



ADITI

Organic Certifications Pvt. Ltd.

Bengaluru
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CIRCULAR

Subject: Notification of Changes in Canadian Organic Standards 2026

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Dear Valued Clients,

We would like to inform you that the **Canadian Organic Standards (COS) 2026** have been officially revised. These revisions introduce updates to organic production practices, management requirements, and permitted substances, with the objective of enhancing clarity, aligning with current organic practices, and strengthening compliance obligations.

Access to Standards and Reference Documents

For your reference and implementation, both the **full revised standards** and the **comparison documents (including rationale for changes)** are being provided:

🔗 [General Principles and Management Standards - CAN/CGSB-32.310](#)

🔗 [Permitted Substances Lists- CAN/CGSB-32.311](#)

The full standards outline the complete set of updated requirements, while the comparison documents highlight clause-wise changes along with the rationale for each amendment.

Attachments

Please find the following documents attached for your review:

- Full Revised COS 2026 Standards
- Comparison Documents with Change Rationale

Training Resources

To support effective implementation, **training session recordings** covering key changes and compliance expectations are also being shared. Operators are strongly encouraged to review these materials to ensure a clear understanding of the revised requirements.

1. [Crop Production – Updates to the 2026 Canadian Organic Standards](#)
2. [Livestock Production – Apiculture – Organic Insects](#)
3. [Organic Composition – Organic Integrity – Permitted Substances Lists in Processing](#)

Transition Period

Operators are provided with a **one-year transition period** from the publication date (**March 2026**) to comply with the revised standards.

Full compliance is required by March 2027.

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Action Required

- Review the updated standards and comparison documents carefully
- Assess the impact on your current practices, inputs, and processes
- Implement necessary changes within the transition period
- Maintain records demonstrating compliance

We urge all operators to update their systems accordingly and ensure full compliance. These requirements are essential for maintaining the credibility of your organic certification and continued access to international markets.

For any clarification or support, please contact us.

Kind regards,
For Aditi Organic Certifications Pvt Ltd.

For ADITI ORGANIC CERTIFICATIONS PVT. LTD.

Narayana Upadhyaya
Managing Director

Managing Director

Compared versions of the 2020-2026 Canadian Organic Standards

Organic production systems

General principles and management standards – CAN/CGSB-32.310

Prepared by the Organic Federation of Canada

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0 Introduction

	2020 with tracked changes	Rationale
0.1	Description Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop operations that are sustainable and harmonious with the environment. CAN/CGSB-32.310, Organic Production Systems – General Principles and Management Standards, describes the principles and management standard of organic production systems. CAN/CGSB-32.311, Organic Production Systems – Permitted Substances Lists, provides lists of substances that are allowed for use in organic production systems. As is the case for all products sold in Canada, organic inputs—such as, but not limited to, fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing additives or aids, sanitizing and cleaning material—and products derived from organic agriculture, such as, but not limited to, feed and food, should comply with all applicable regulatory requirements.	
0.2	General principles of organic production Organic Agriculture is based on the following general principles : Principle of health – Organic agriculture should sustain and enhance the health of soil, plants, animals, humans and the planet as one and indivisible.	See article about climate change and organic farming at https://mailchi.mp/organicfederation/reducing-ghg. See articles about social justice at https://mailchi.mp/organicfederation/survey-social-justice, https://mailchi.mp/organicfederation/rev

	Principle of ecology – Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them. Principle of care – Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment. Principle of fairness – Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.	iew-rejectedpetitions, and https://mailchi.mp/organicfederation/tcmtg-diverseschanges.
0.3	Organic practices Neither this standard nor organic products produced in accordance with this standard represent specific claims about the healthiness, safety and nutrition of such organic products. Management methods are carefully selected in order to restore and then sustain ecological stability within the operation and the surrounding environment. Soil fertility is maintained and enhanced by promoting optimal biological activity within the soil and conservation of soil resources. Pests, including insects, weeds and diseases, are managed using biological and mechanical control methods, and cultural practices that include minimized tillage, crop selection and rotation, recycling of plant and animal residues, water management, augmentation of beneficial insects to encourage a balanced predator–prey relationship, the promotion of biological diversity and ecologically based pest management. Under a system of organic production, livestock are provided with living conditions and space allowances appropriate to their behavioural requirements and organically produced feed. These practices strive to minimize stress, promote good health and prevent disease. Organic products are produced and processed under a system that strives to preserve the integrity of the principles in this standard. Organic practices and this standard cannot ensure that organic products are entirely free of residues of substances prohibited by this standard and of other contaminants, since exposure to such compounds	

	from the atmosphere, soil, ground water and other sources may be beyond the control of the operator. The practices permitted by this standard are designed to ensure the least possible residues at the lowest possible levels. In the development of the standard, it was recognized that differences between Canada's agricultural regions require varying practices to meet production needs. This standard is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification process assesses operational compliance. Certification is granted to compliant products. Certification bodies must allow a period of up to 12 months after the publication date of an amendment to this standard and to CAN/CGSB-32.311 for an applicant to come into compliance with any changes to the requirements.	
0.4	Notes and examples in this standard In this standard, notes and examples are used for giving additional information intended to assist the understanding or use of the document and are not a normative part of the standard.	

1 Scope

1.1	This National Standard of Canada applies to the following organic products:	
a)	Unprocessed plants and plant products, livestock and livestock products, to the extent that the principles of production and specific verification rules for them are described in the standard;	
b)	Processed agricultural crop and livestock products intended for human consumption or use and derived from the items mentioned in 1.1 a);	
c)	Livestock feed;	
d)	Processed agricultural crop and livestock products intended for animal consumption or use and derived from the items mentioned in 1.1 a).	
1.2	Organic products referenced in this standard are derived from a production system that:	
a)	seeks to nurture ecosystems through its management practices in order to achieve sustainable productivity; and	
b)	provides control of pests including insects, weeds and disease through enhancement of biodiversity, recycling of plant and animal residues, crop selection and rotation, water management, tillage and cultivation.	
1.3	Units of measure Quantities and dimensions in this standard are given in metric units with yard/pound equivalents, mostly obtained through soft conversion, given in parentheses. The metric units shall be regarded as being official in the event of dispute or unforeseen difficulty arising from the conversion.	
1.4	Prohibited materials or techniques in organic production and preparation If producing or preparing organic products, the following materials or techniques are prohibited since they are incompatible with the general principles of organic production:	
a)	all products of and materials from genetic engineering (GE), as defined in this standard, and as specified in 4.1.3, 5.1.2 and 6.2.1 of CAN/CGSB-32.311;	

b)	all products, materials or processes intentionally using nanotechnology, as defined in this standard, with the following exceptions:	
1)	naturally occurring nano-sized particles or those produced incidentally through processes such as grinding flour;	
2)	contact surfaces, such as equipment, work surfaces or packaging, where transference of nano-sized particles to organic crops, livestock or products is unintended and unlikely to occur;	
c)	irradiation, as defined in this standard, for the treatment of organic products and inputs used in the production of organic products, except as specified in CAN/CGSB-32.311;	
d)	cloned livestock (see definition in Clause 3) and its descendants;	
e)	equipment, harvest and storage containers, storage facilities and packaging materials treated with fungicides, preservatives, fumigants and pesticides not listed in CAN/CGSB-32.311, except as permitted in 8.2.3 and 8.3.3 of CAN/CGSB-32.310.	
1.5	Prohibited substances in organic production and preparation	
	In addition to Clause 1.4, when producing or preparing organic products, the following substances are prohibited since they are incompatible with the general principles of organic production:	
a)	soil amendments, such as fertilizer or composted plant and animal material, that contain a substance not listed in CAN/CGSB-32.311;	
b)	sewage sludge;	
c)	any crop production aids or substances not listed in CAN/CGSB-32.311;	
d)	plant, fungal and animal growth regulators, except as specified in CAN/CGSB-32.311;	
e)	veterinary drugs, including antibiotics and parasiticides, except as permitted by this standard;	
f)	non-organic ingredients, food additives and processing aids used in organic product preparation, including sulphates, sulphites, nitrates and nitrites, except as permitted by this standard or specified in CAN/CGSB-32.311;	
g)	formulants except as specified in CAN/CGSB-32.311.	
NOTE	See the PSL Decision Tree in Annex B for a methodology that may assist in the completion of input reviews.	

2 Normative references

2	Normative references The following normative documents contain provisions that, through reference in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below.	
NOTE	The addresses provided below were valid at the date of publication of this standard.	
	An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.	
2.1	Canadian General Standards Board (CGSB)	
	CAN/CGSB-32.311 – <i>Organic production systems – Permitted substances lists.</i>	
	CAN/CGSB-32.312 – <i>Organic production systems: Aquaculture—General principles, management standards and permitted substances lists</i>	
2.1.1	Source	
	The above may be obtained from the Canadian General Standards Board, Sales Centre, Ottawa, ON Canada K1A 0S5. Telephone: 1-800-665-2472. E-mail: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site: www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html .	
2.2	Canadian Food Inspection Agency (CFIA)	
	<u>Method of production claims on food labels</u>	
NEW	<u>Health of Animals Act (S.C. 1990, c. 21)</u>	Added reference.
NEW	<u>Health of Animals Regulations (C.R.C., c. 296)</u>	Added reference.
	<i>Safe Food for Canadians Act</i> (S.C. 2012, c. 24)	
	<i>Safe Food for Canadians Regulations</i> (SOR/2018-108), Part 13.	
NEW	<u>Seeds Regulations (CRC c1400)</u>	Added reference.

2.2.1	Source	
	The above may be obtained from CFIA at http://www.inspection.gc.ca/ or from Justice Laws Web site at http://laws-lois.justice.gc.ca.	
2.3	IFOAM Organics International	
	<i>Principles of Organic Agriculture.</i>	
2.3.1	Source	
	The above may be obtained from the IFOAM Web site at https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic .	
2.4	National Farm Animal Care Council (NFACC)	
	In the event of any conflict or inconsistency between this standard and a Code of Practice listed below, this standard shall take precedence.	
	<i>Code of Practice for the Care and Handling of Dairy Cattle</i>	
	<i>Code of Practice for the Care and Handling of Beef Cattle</i>	
	<i>Code of Practice for the Care and Handling of Veal Cattle</i>	
	<i>Code of Practice for the Care and Handling of Pigs</i>	
	~~<i>Code of Practice for the Care and Handling of Farm Animals: Transportation</i>~~	This Code of Practice is defunct. Replaced by the Health of Animals regulations added to 2.2.
	<i>Code of Practice for the Care and Handling of Pullets and Laying Hens</i>	
	<i>Code of Practice for the Care and Handling of Hatching Eggs, Breeders, Chickens and Turkeys</i>	
	<i>Code of Practice for the Care and Handling of Sheep</i>	
	<i>Code of Practice for the Care and Handling of Goats</i>	
	<i>Code of Practice for the Care and Handling of Rabbits</i>	
	<i>Code of Practice for the Care and Handling of Bison</i>	

2.4.1	Source	
	The above may be obtained from the NFACC Web site at https://www.nfacc.ca/codes-of-practice .	
<u>2.5</u>	<u>Animal Health Canada</u> <u>Canadian Livestock Transport Course</u> <u>2.5.1 Source</u> <u>The above may be obtained from the Animal Health Canada web site at https://campus.animalhealthcanada.ca/.</u>	Added reference.

3 Terms and definitions

For the purposes of this National Standard of Canada, the following terms and definitions apply.

	2020 Definition with Tracked Changes	Rationale
aeroponics (<i>aéroponie</i>)	soil-free cultivation method whereby plants are suspended with their roots exposed to the air.	
agricultural products, agricultural ingredients (<i>produits agricoles, ingrédients agricole</i>)	pertaining to crops and livestock and any products, <u>including processed ingredients, resulting from crops and livestock. Processed agricultural ingredients and products may be manipulated physically or biologically but are no longer considered to be agricultural products or agricultural ingredients if they are more than minimally processed or if they are chemically altered in a way that creates new compounds.</u>	This definition was fleshed out to help identify when a product or ingredient loses its "agricultural" status especially if heavily processed. This should reduce the misuse of the "commercially available" clause which allows the use of non-organic agricultural ingredients in place of organic versions in >95% products. This allowance was always intended for organic agricultural commodities not overly refined ingredients derived from agricultural commodities.
agro-ecosystem (<i>agro-écosystème</i>)	system consisting of the form, function, interaction and equilibrium of the biotic and abiotic elements present within the environment of a given agricultural operation.	
allopathic (<i>allopathique</i>)	use of allopathy.	
allopathy (<i>allopathie</i>)	method of treating disease with substances that produce a reaction or effects different from those caused by the disease itself.	
annual seedling (<i>semis annuel</i>)	young plant grown from seed that will complete its life cycle or produce a yield and be able to be harvested within the same crop year or season in which it was planted.	
antibiotic (<i>antibiotique</i>)	any drug or combination of drugs which is prepared from certain microorganisms, or which formerly was prepared from microorganisms but is now made synthetically, and which possesses inhibitory action on the growth of other microorganisms including fungi, bacteria and viruses.	

apiculture (<i>apiculture</i>)	management and production of honeybees, queens and their products. Examples are honey, beeswax, pollen, royal jelly, propolis and bee venom.	
beak treatment (<i>traitement du bec</i>) [NEW]	<u>blunting of the beak using a non-invasive procedure (i.e., infra-red).</u>	Definitions were needed to differentiate between beak trimming and beak treatment.
beak trimming (<i>rognage du bec</i>) [NEW]	<u>removal of a portion of the beak, usually by hot blade, an instrument that simultaneously cuts and cauterizes.</u>	
bedding (<i>litière</i>)	material added to livestock housing environments for the purpose of adding comfort and to encourage natural behaviours. Examples: chopped straw, wood shavings.	
biobased (<i>biosourcé</i>)	substance that is derived from a plant, animal or microbial source.	
biodegradable (<i>biodégradable</i>)	crop and livestock inputs and production aids capable of microbial decomposition within 24 months in soil (with the exception of plant biomass), one month in aerated water and two months in anaerobic water, with minimal impact on the environment.	
biological (<i>organique</i>)	pertaining to multicellular or unicellular organisms (or their components), such as animals, plants, fungi, bacteria, proteins, nucleic acids and viruses, etc.	
buffer zone (<i>zone tampon</i>)	clearly defined and identifiable boundary area that separates an organic production unit from adjacent non-organic areas.	
carbohydrate (<i>glucides</i>)	sugar or starch compound, such as dextrose (glucose).	
cloned animals (<i>animaux clonés</i>)	identical animals resulting from human manipulation of embryos and embryo transfer, using techniques such as somatic cell nuclear transfer, embryonic cell nuclear transfer or embryo splitting.	
colony (<i>colonie</i>)	typically an aggregate of several thousand worker bees, drones, and a queen bee living together in a hive or in any other dwelling as one social unit.	
commercially available (<i>disponible sur le marché</i>)	documented ability to obtain a production input or an ingredient in an appropriate form, quality, quantity or variety, irrespective of cost, in order to fulfill an essential function in organic production or preparation.	

commingling (mélange)	mixing of or physical contact between bulk, unbound or unpackaged organic products and non-organic products during production, preparation, transportation, or storage.	
compost (compost)	product of a carefully managed aerobic process by which biological materials are digested by microorganisms.	
compost tea (thé de compost)	liquid soil amendment or foliar feed used to promote beneficial bacterial growth that is created by steeping mature compost in water.	
<u>compromised animal (animal fragilisé)</u> [NEW]	<u>as defined in <i>Health of Animals Regulations Part XII (Transport of Animals)</i>, or generally an animal that exhibits any signs of infirmity, illness, injury, or of a condition that indicates that it has a reduced capacity to withstand transport.</u>	Compromised and unfit animals are specific terms to describe animals that are not in sufficiently good condition to be transported, unless for veterinary care. These terms align with the federal regulations for livestock transport. The terms help operators judge whether an animal can be transported according to the COS and are used in clause 6.5.
crop rotation (rotation des cultures)	practice of alternating crops grown in a specific field in a planned sequence and in successive crop years so that crops of the same species or family are not continuously grown in the same field. Perennial cropping systems employ techniques such as alley cropping, intercropping and hedgerows to introduce biological diversity in lieu of crop rotation.	
~~derivative (dérivé)~~	~~a substance created by a molecular modification of another substance (the source) usually by a chemical substitution or additional reaction.~~	Adding a definition for "derived from biological or mineral sources" that directs readers to Annex B will help everyone understand the intent of the standard with regards to input sources. Simultaneously replacing the one occurrence of "derivative" in the standard (which was in Annex B) with "substances" further reduces confusion as many thought "derivative" in that context meant something that is derived from (which was not the case).
<u>derived from biological or mineral sources (dérivé de sources organiques ou minérales)</u> [NEW]	<u>isolated/extracted from primary biological or mineral sources (or derived from a named biological or mineral source) without creating new chemical compounds. See CAN/CGSB-32.310 Annex B — Permitted Substances Decision Tree.</u>	
<u>disbudding (ébourgeonnage)</u> [NEW]	<u>a procedure that removes the horn bud (from which the horn grows) before it attaches to the skull, which usually occurs at eight weeks of age in cattle and at three weeks of age in goats. When horns are removed after the horn bud attaches to the skull, it is called <u>dehorning</u>.</u>	A definition was needed to differentiate between disbudding and dehorning.

<u>environmental enrichment (livestock)</u> <u>(enrichissement de l'environnement (production animale))</u> [NEW]	<u>provision of safe materials or objects to an animal's environment that encourage the expression of natural behaviour and exercise. The materials or objects shall be appropriate for the livestock production system and stage of production and do not include functional equipment or other objects or materials required by this standard.</u>	Clarification of term.
feed additive (additif pour alimentation animale)	substance added to feed in small quantities to fulfil a specific nutritional need. Examples are essential nutrients in the form of amino acids or vitamins and minerals, and non-nutritive additives such as anticaking agents and antioxidants.	
feed supplement (supplément alimentaire)	feed that is used in conjunction with other feeds to improve the nutritive balance of the total and that is intended to be: a) fed undiluted as a supplement to other feeds, b) available separately and offered free choice, along with other parts of the ration, or c) further diluted and mixed to produce a complete feed. NOTE In Canada, the Feeds Act requires that the resulting feed is acceptable for registration.	
fermentation (fermentation)	conversion of a carbohydrate into simpler or more complex carbon-based compounds by an enzyme or enzymes produced by microorganisms. For example, sugars can be fermented in the presence of yeast to produce alcohol or acetic acid along with carbon dioxide. Fermentation followed by extraction and purification can isolate the substance from other products of fermentation and impurities; this can be used to produce compounds such as enzymes, antibiotics, amino acids and organic acids (e.g., citric, gibberellic, lactic acids). Also known as microbial fermentation or biofermentation.	
fertilizer (engrais)	single or blended substance composed of one or more recognized plant nutrients.	
filtrate (filtrat)	liquid that passes through an osmosis filter in the production of maple or other tree sap syrup.	
food additive (additif alimentaire)	has the same meaning as in B.01.001 of the <i>Food and Drug Regulations</i> .	

food-grade (qualité ou grade alimentaire)	designation used to identify that a substance (for example, a cleaning material, gas, etc.) or material (for example, a counter, containers, a conveyor, etc.) may come in contact with food, food contact surfaces or is safe for human consumption.	
forage (fourrage)	vegetative material in fresh, dried or ensiled state that is fed to livestock, for example, pasture, hay or silage.	
Formulant, production aid (produits de formulation utilisés avec les auxiliaires en production végétale)	<u>any component of a production aid (CAN/CGSB-32.311 Table 4.2 Column 2) added for its functional effect on the input substance, such a stabilizer , surfactants or spreader. These formulants will not have an active effect on pests.</u>	Definitions for formulants were created to support formulant listings (used in soil amendments or used in crop aids). The new definitions clearly limit the formulant to a functional effect on the substance, thereby discouraging the misuse of formulants as active ingredients (i.e., formulants cannot be used as a primary source of nutrient or pest control).
Formulant, soil amendment (produits de formulation utilisés avec les amendements du sol)	<u>any component added to a soil amendment (CAN/CGSB-32.311, Table 4.2 Column 1) for its functional effect on the input substance, such as a preservative or pH adjuster. These formulants will not chemically react with the active components or otherwise modify the soil amendment's capacity to change soil fertility, chemistry or tilth.</u>	See definition of formulant, production aid.
frass (scuire d'insectes)	<u>A mixture of insect excreta, insect parts and exoskeletons, as well as undigested feed and bedding.</u>	Frass has been added to Table 4.2 of CAN/CGSB-32.311; the definition was added to provide clarity.
genetic engineering (génie génétique) also commonly known as resulting in Genetically Modified Organisms (GMOs)	artificial manipulation of living cells for the purpose of altering its genome constitutes genetic engineering and refers to a set of techniques from modern biotechnology by which the genetic material of an organism is changed in a way that does not occur other than through traditional breeding by multiplication or natural recombination. The genome is considered an indivisible entity; artificial technical/physical insertions, deletions, or rearrangements of elements of the genome constitute genetic engineering.	
	Techniques developed in future may be considered genetic engineering. Examples of the techniques used in genetic engineering include, but are not limited to:	

	• genome/gene editing techniques, such as but not limited to CRISPR, that replace one DNA sequence with another, transposes, deletes or adds a gene sequence or a part of gene sequence; • recombinant DNA (rDNA) techniques that use vector systems; • cisgenesis; • intragenesis; • agro-infiltration; • techniques involving the direct introduction into the organism of hereditary materials prepared by whatever means, inside or outside the organism; • cell fusion (including protoplast fusion) or hybridization techniques that overcome natural physiological, reproductive or recombination barriers, where the donor cells/protoplasts do not fall within the same taxonomic family or are created outside, or manipulated within, the organism through techniques such as, but not limited to, synthetic biology. Unless the donor/recipient organism is derived from any of the above techniques, examples of techniques not covered by this definition include: • in vitro fertilization; • conjugation, transduction, transformation, or any other natural process; • polyploidy induction; • cell fusion (including protoplast fusion) or hybridization techniques where the donor cells/protoplasts are in the same taxonomic family and not created outside, or manipulated within, the organism through techniques such as, but not limited to, synthetic biology.	
grazing season <i>(saison de pâturage)</i> [NEW]	<u>The period of time when pasture is available for grazing due to local seasonal climate, available moisture, soil condition, availability of forage and other land access constraints. Grazing season dates may vary because of seasonal variations or extreme weather events and may not be continuous. The grazing season may be extended, for example, by grazing stockpiled pasture or annual crops, as outlined in the operation's organic system plan.</u>	The addition of a definition of grazing season helps clarify when ruminants, and other grazing animals, are expected to be getting forage from pasture.
herbivore <i>(herbivore)</i>	animal that feeds chiefly on plants.	
hive <i>(ruche)</i>	human-constructed housing for bees including related components.	

hydroponics production (<i>production hydroponique</i>) [NEW]	<u>cultivation of plants in aqueous nutrient solutions without the aid of soil. Plants grown in hydroponic production systems mainly draw their nutrients from supplied solutions of soluble nutrients. The hydroponic growing system is characterized by a growing medium which can vary and can be as diverse as an aqueous matrix, or an inert material (e.g., rockwool), or carbon-based material (e.g., coir) and any combination thereof, and may or may not contain soil.</u>	This definition was revised in an attempt to clarify how the organic sector in Canada defines hydroponic production (hydroponic products cannot be certified as organic under the Canadian Organic Regime).
incidental additives (<i>additifs indirects</i>)	substances used in organic processing facilities that have the potential to remain present in organic products as residues. Examples are: hand products (cleaners, antiseptics, lotions, barrier creams), boiler water treatment compounds, water treatment compounds, lubricants (release agents, solvents), anti-foaming agents and non-food chemicals (sanitizers, disinfectants, cleaning agents and detergents).	
ingredient (<i>ingrédient</i>)	substance, including a food additive, used in the manufacture or preparation of a product. The substance is present in the final product, possibly in a modified form.	
Input (<i>intrant</i>)	substance used in production or preparation. Examples are: fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing aids, sanitizing and cleaning materials.	
irradiation (<i>irradiation</i>)	<u>refers to</u> treatment with ionizing radiation (see definition of ‘radiation’).	See rationale for Radiation.
isolation distance (<i>distance d’isolement</i>)	distance established to segregate an organic crop from a commercialized GE crop of the same crop type. An isolation distance is the shortest distance from the edge of an organic crop to the edge of the nearest GE crop of that crop type.	
litter (<i>portée</i>)	a group of young animals born at one time to one mother. Example: a litter of piglets.	
litter material (<i>fumier</i>)	a mixture of bedding material with animal excreta, such as manure, dust and feathers, collected from the floor of livestock housing (e.g., barn, coop).	
livestock (<i>animaux d’élevage</i>)	any domestic or domesticated animal including bovine, ovine, porcine, caprine, equine, lagomorph (rabbits), poultry and bees raised for food or used in the production of food. The products of hunting or fishing of wild animals are not included in this definition.	
manure (<i>déjections animales</i>)	livestock feces, urine and other excrement.	

microgreens (micro-verdurettes)	edible young plants that are harvested later than sprouts, generally when cotyledons are fully formed or when two or four true leaves are present.	
mushroom mycelium (mycélium de champignon) [NEW]	<u>the main vegetative body of a fungus, consisting of a network of thread-like filaments called hyphae, from which mushrooms fruit or grow. In commercial mushroom production, mycelium is also used to colonize or inoculate spawn media to produce spawn and a subsequent crop of mushrooms (fruiting bodies).</u>	Definitions have been added to provide clarity.
mushroom spawn (blanc de champignon) [NEW]	<u>a combination of mycelium and substrate or growth media used to inoculate substrate to propagate mycelium and mushrooms.</u>	Definitions have been added to provide clarity.
nanotechnology (nanotechnologie)	manipulation of matter at atomic, molecular, or macromolecular dimensions typically between 1 and 100 nm to create materials, devices and systems with fundamentally new properties and functions. Nanoscale chemical substances, or nanomaterials, behave differently from their macroscale counterparts, exhibiting different mechanical, optical, magnetic or electronic properties.	
nutrient management plan (plan de gestion des nutriments)	nutrient budget or plan in which the timing and rate of nutrient application is based on soil nutrient status (soil test results), crop nutrient needs, the amendment (manure, compost, plow-down crop or other permitted substance), nutrient content and expected nutrient release rates. The goal of a nutrient management plan is to minimize nutrient loss, protect water quality, maintain soil fertility and ensure effective use of permitted soil amendments.	
operation (exploitation)	farm, company or organization that produces or prepares an organic product; an operation may have multiple production units (see definition of ‘production unit’).	
operator (exploitant)	person, company or organization that produces, prepares, packages or owns the brand of product(s) with a view to the subsequent sale, trade or marketing of products labelled as organic.	
organic integrity (intégrité biologique)	maintenance of the inherent organic qualities of a product from the receipt of ingredients through to the end consumer.	
organic product (produit biologique)	any commodity or output produced by a system compliant with this standard.	

organic production (<i>production biologique</i>)	method of agricultural production in compliance with this standard.	
parallel production (<i>production parallèle</i>)	simultaneous production or preparation of organic and non-organic crops, including transitional crops, livestock and other organic products of the same or similar varieties that are visually indistinguishable by the common person when the crops, livestock or products are positioned side by side.	
parasiticide (<i>antiparasitaire</i>)	pharmaceutical substance or veterinary drug, such as an anthelmintic (dewormer), used to control internal or external parasites in livestock.	
perennial crop (<i>culture vivace</i>)	crop, other than a biennial crop, that can be harvested from the same planting for more than one crop year ~~or that requires at least one year after planting before harvest.~~	Changed to provide more clarity.
pest (<i>organisme nuisible</i>)	organism causing damage to humans or to resources used by humans, such as certain viruses, bacteria, fungi, weeds, parasites, arthropods and rodents.	
pesticide (<i>pesticide</i>)	substances used, directly or indirectly, to attract, prevent, destroy, repel or mitigate pests; or to alter the growth, development or characteristics of weeds. Includes any organism, substance or mixture of substances, and devices, such as lures or traps.	
planting stock (<i>matériel de reproduction végétale</i>)	plant or plant tissue other than ~~annual seedlings~~ <u>or transplants</u> , used in plant production or propagation. <u>Refers to material without soil or growth media.</u> Examples are ~~rhizomes, shoots,~~ leaf or stem cuttings, <u>bare roots or, rhizomes, shoots, crowns,</u> tubers, bulbs or cloves.	This definition now indicates the planting stock is unpotted, meaning without soil.
prebiotics (<i>prébiotiques</i>)	fibre food and potential carriers for bacteria. Examples of prebiotic substrates are inulin, lactulose, various galacto-oligosaccharides, fructo-oligosaccharides, xylo-oligosaccharides and sugar alcohols.	
preparation (<i>préparation</i>)	includes, with respect to an organic product, post-harvest handling, manufacturing, processing, treatment, preservation, and slaughter.	
probiotics (<i>probiotiques</i>)	microorganisms that provide health benefits when consumed.	

processing aids <i>(auxiliaires de production)</i>	substances added to food during processing for a technological effect but are not present in the finished product or are at insignificant and non-functional levels.	
production unit <i>(unité de production)</i>	identifiable portion of an operation as outlined in the organic plan in which production or preparation of an organic product occurs. For example, a production unit may be a field with clearly marked boundaries, a pasture, a greenhouse, a series of greenhouses, a building or buildings. A “livestock production unit” is a herd or flock of animals or birds with its associated infrastructure such as barns and pastures. An entire operation, even one with disconnected fields or buildings, may be considered one production unit if the whole operation is organic and following one organic plan. Where there is split or parallel production, organic production units are sufficiently segregated from non-organic production units to ensure that there is no cross-contamination.	
prohibited materials <i>(matériaux interdits)</i>	materials prohibited by Clause 1.4.	
prohibited substances <i>(substances interdites)</i>	substances prohibited by Clause 1.5 or not listed in CAN/CGSB-32.311.	
<u>radiation, ionizing</u> <i><u>(radiation, ionisante)</u></i> [NEW]	<u>any type of electromagnetic radiation that is capable of freeing electrons from an atom, causing the atom to become charged (or ionized). Ionizing radiation includes X-rays and gamma rays. Irradiated food is typically exposed to ionizing radiation generated from Cobalt-60 or Cesium-137; or X-rays generated by a machine source operated at or below an energy level of 5 MeV; or from electrons generated by a machine source operated at or below an energy level of 10 MeV.</u>	The definition of irradiation in the Canadian organic standards is being updated to clearly distinguish between ionizing and non-ionizing radiation by specifying the wavelength threshold where ionizing radiation begins. Ionizing radiation, which alters DNA or chemical structure, remains prohibited.
<u>radiation non-ionizing</u> <i><u>(radiation, non ionisante)</u></i> [NEW]	<u>any type of electromagnetic radiation that does not carry enough energy to ionize atoms. Has longer wavelengths (>100 nm), lower frequencies, and lower energy (mega-electron volts (MeV)) than ionizing radiation. Includes ultraviolet light, visible light, infra-red, microwaves, radio frequencies, and low, very low and extremely low frequencies.</u>	At the same time, the standards will explicitly recognize that non-ionizing technologies, such as ultraviolet (UV) treatments, can be used for pest and pathogen management on crops and food-contact surfaces. To ensure clarity, these updates will be reflected in Table 4.2 (Substances for crop production) and Table 7.3 (Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event) of CAN/CGSB-32.311.

		This improved clarity will help address ambiguities and ensure precise understanding of the use of these radiation technologies permitted within organic production.
records (registres)	information in written, visual or electronic form that documents the activities undertaken by an operator engaged in the production or preparation of organic products. <u>See 4.4. for details.</u>	Note: many changes have been made to 4.4 Record keeping and identification. See 4.4 for details.
removal event (intervention subséquente)	procedure performed prior to organic production runs, batches or loads, to prevent organic product from coming into contact with prohibited substances or commingling with non-organic products. Examples of removal events are rinsing with potable water, letting surfaces drip-dry, and purging a system with organic product.	
Salt (sel)	sodium chloride, or low-sodium and sodium-free substitutes that serve the purpose of providing salt flavour, nutrition or microbial control in a product. When used as a soil amendment, the term "salt" also includes calcium chloride and potassium chloride.	
seed coating (pelliculage des semences)	a substance applied to the surface of a seed for a function distinct from seed pelleting.	
seed pelleting (enrobage des semences)	augmenting a seed with substances to increase the size of seed to facilitate seeding.	
seed priming (trempage des semences)	adding water-based solutions into seeds, before sowing, to improve the uniformity and speed of germination. Once wetted, the seed is dried to allow for shipping and short-term storage.	
seed treatment (traitement des semences)	adding pest control products, plant growth regulators or inoculants, etc., to seeds to assist with their field performance. Can be performed pre- or post-sowing.	
sewage sludge (boues d'épuration)	solid, ~~semi-solid and liquid or semisolid residues~~ <u>fractions</u> generated by municipal or industrial sewage treatment facilities. ~~Sewage sludge includes~~ including, but is not limited to, domestic septage, scum or solids (<u>biosolids</u>) ~~removed in primary, secondary or~~	The definition has been modified to be consistent with the Permitted Substances List. The 2025 COS PSL Table 4 for crop production

	~~advanced wastewater treatment processes; or material derived from sewage sludge/systems.~~	includes struvite that has been extracted from wastewater that has received advanced treatment. "Sewage sludge" is prohibited, however, it is reasonable to distinguish sewage sludge (biosolids) from the wastewater after advanced treatment. The wastewater is not sewage sludge, but water cleaned or "treated" to release into the environment.
soil (sol)	mixture of minerals, organic matter and living organisms.	
Specified Risk Material (SRM) (matériel à risque spécifié [MRS])	the skull, brain, trigeminal ganglia (nerves attached to the brain), eyes, tonsils, spinal cord and dorsal root ganglia (nerves attached to the spinal cord) of cattle aged 30 months or older; and the distal ileum (portion of the small intestine) of cattle of all ages.	
~~split production—split operation (production exploitation fractionnée)~~	operation that produces or prepares <u>both</u> organic and non-organic agricultural products, including transitional products.	Divided the definition of “split production—split operation” into two separate definitions.
~~split production—split operation (production exploitation fractionnée)~~	~~operation that produces or prepares~~ <u>production or preparation of both</u> organic and non-organic agricultural products, including transitional products.	
symbiotics (symbiotiques)	combination of prebiotics and probiotics. Many contain a combination of probiotic culture with a prebiotic substrate that favours its growth.	
synthetic biology (biologie synthétique)	broadly describes the design and construction of novel artificial biological pathways, organisms or devices, or the artificial redesign of existing natural biological systems.	
synthetic substance (substance synthétique)	manufactured substance, including petrochemicals, formulated by a chemical process or by a process that chemically alters compounds extracted from plant, microorganisms, animal or mineral sources. This term does not apply to compounds synthesized or produced by physical processing or biological processes, which may include heat and mechanical processing. However, minerals altered through chemical reactions caused by heating or burning are classified as synthetic.	

traceability (<i>traçabilité</i>)	ability to track product, backwards and forwards, through all stages of production and preparation.	
traditional breeding (<i>sélection génétique traditionnelle</i>)	traditional breeding has its basis in biological sexual reproduction. It occurs between closely related organisms, in reproductive cells, and between related chromosomes through homologous recombination.	
transitional period (<i>période de conversion</i>)	period of time between the start of an organic management program and the attainment of organic status by a production unit or operation.	
transplant (<i>plant repiqué</i>)	seedling that has been removed from its original place of production, transported and replanted.	
unfit animal (<i>animal inapte</i>)	<u>as defined in <i>Health of Animals Regulations Part XII</i>, or generally, an animal that exhibits any signs of infirmity, illness, injury or of a condition that indicates it cannot be transported without suffering.</u>	Compromised and unfit animals are specific terms to describe animals that are not in sufficiently good condition to be transported, unless for veterinary care. These terms align with the federal regulations for livestock transport. They help operators judge whether an animal can be transported according to the COS and are used in section 6.5.
veterinary biologic (<i>produit biologique vétérinaire</i>)	helminth, protozoa or microorganism; or a substance or mixture of substances derived from animals, helminths, protozoa or microorganisms; or a substance of synthetic origin that is manufactured, sold or represented for use in restoring, correcting or modifying functions in animals or for use in the diagnosis, treatment, mitigation or prevention of a disease, disorder, abnormal physical state, or the symptoms thereof, in animals. Veterinary biologics include vaccines, bacterins, bacterin-toxoids, immunoglobulin products, diagnostic kits and any veterinary biologic derived through biotechnology.	
veterinary drug (<i>médicament vétérinaire</i>)	substance or mixture of substances represented for use or administered in the diagnosis, treatment, mitigation or prevention of disease, disorder, abnormal physical state or its symptoms in animals; restoring, correcting or modifying functions in animals.	
wild crop (<i>plante sauvage</i>)	plants collected or harvested in their natural habitat.	
yeast (<i>levure</i>)	single-celled microorganisms that produce enzymes, carbon dioxide (CO ₂), and other metabolites from carbohydrates, whose functional roles are frequently used in the	

	processes of fermentation, baking and flavouring foods, adding nutritional value and providing health benefits.	
yeast autolysate extract <i>(extraits d'autolysats de levure)</i>	water-soluble components of the yeast cell, generally produced by autolysis, a process in which the rupture of the cell wall is induced mechanically or chemically.	

4 Organic plan

4.1	The operator shall prepare an organic plan outlining the details of transition, production, preparation and management practices.	Rationale The record-keeping requirements in the 2020 COS did not fully reflect the range of activities at the farm, trader, and exporter levels. The proposed changes enhance traceability for both domestic and imported organic products and improve the ability of Certification Bodies to conduct accurate mass balance calculations. They also provide clearer expectations for record-keeping, ensuring greater consistency across operators. Additionally, the updates to Section 4, Organic Plan, clarify when operators must update and submit their organic plans to their Certification Body.
4.2	The organic plan shall be updated, <u>at a minimum, on an annual basis annually</u> to address changes to the plan or management system, problems encountered in executing the plan, and measures taken to overcome such problems. <u>If there are any other changes throughout the year, the organic plan will need to be updated and submitted to the Certification Body. Examples of such changes include growing a new crop, processing a new organic product, adding or dropping a field from production, or adding new inputs.</u>	
4.3	The organic plan shall include a description of the internal record-keeping system, with documents sufficient to meet the ~~traceability~~ audit requirements as specified in <u>Clause 4.4 4.4.2</u> , and other record-keeping requirements <u>indicated throughout the standard.</u>	
4.4	~~Record keeping and~~ Identification and record keeping	
4.4.1	<u>The operator shall record the lot code or other unique identifier, such as harvest date, manufacture date, best-before date, animal ear tag number, or flock number, etc., that was assigned to an organic product, animal or flock for the purposes of identification, traceability and accountability. Lot codes or other unique identifiers shall be apparent on all non-retail and retail final consumer sale units. Documentation indicating lot codes or other unique identifiers shall accompany bulk products. The operator shall maintain records and relevant supporting documentation such as visual aids (for example, maps, work flow charts) concerning inputs and details of their use, production, preparation and transport of organic crops, livestock and products. The operator shall maintain the organic integrity of products and shall fully record and disclose all activities and transactions in sufficient detail to be easily understood and sufficient to demonstrate compliance with this standard.</u>	
4.4.2	<u>The operator shall maintain records and relevant supporting documentation in sufficient detail to ensure they are readily understood and auditable. These records shall include documentation on inputs and materials, production, preparation, storage, transport and sales related to:</u> <u>a) organic unprocessed plants and mushrooms, and plant and mushroom products;</u> <u>b) organic livestock and insects, and livestock and insect products;</u>	

	<u>c) organic processed agricultural crop and livestock products;</u> <u>d) organic livestock feed; and</u> <u>e) organic seed.</u> Records shall make it possible to trace ~~a) the origin, nature and quantity of organic products that have been delivered to the production unit or operation;~~ ~~b) the nature, quantity and consignees of products that have left the production unit;~~ ~~c) any other information for the purposes of verification, such as the origin, nature and quantity of inputs, ingredients, additives and manufacturing aids delivered to the production unit, and the composition of processed products;~~ ~~d) activities or processes that demonstrate compliance with this standard.~~	
4.4.3 [NEW]	An identification system shall be implemented to distinguish organic and non-organic crops, livestock (for example, general appearance, colour, variety and types) and products. <u>The records shall reflect the scope, complexity, and activities of the operation and are not limited to:</u> <u>a) visual aids such as maps, and flow charts.</u> <u>b) common operational records, such as:</u> <u>1) purchase and sales records;</u> <u>2) receiving logs,</u> <u>3) records of inputs and substances used, including remaining inventories;</u> <u>4) sanitation logs and checklists;</u> <u>5) inventories of raw ingredients and finished goods;</u> <u>6) training records; and</u> <u>7) inbound and outbound transportation and distribution records.</u>	

	<u>c) other crop and livestock production records, such as crop rotations, planting, tillage, harvest, herd or flock records, livestock health and storage.</u> <u>d) preparation and handling records, such as manufacturing logs and production records.</u>	
4.4.4	~~The operator shall design and implement a risk management plan to prevent GE contamination which may include strategies such as physical barriers, border rows, delayed planting, testing of seeds, isolation distances and equipment and storage sanitation protocols.~~ <u>Records, supporting documentation, and organic certification documentation shall be readily available and auditable to demonstrate compliance with this standard. They shall fully disclose all activities and transactions allowing for complete traceability and accountability. They shall identify:</u> <u>a) the origin, nature, composition and quantity of organic products, including ingredients that have been delivered to, used, and/or produced on the production unit or operation;</u> <u>b) the origin, nature and quantity of inputs, non-organic ingredients, and processing aids used in organic production and delivered to the production unit;</u> <u>c) all international shipment documents upon import (e.g., phytosanitary certificates, transaction certificates, and other applicable documents) to ensure organic integrity is maintained;</u> <u>d) the nature, quantity and consignees of products that have left the production unit or operation;</u> <u>e) for incoming shipments, all the roles and activities of intermediaries (such as brokers, traders, distributors, third party storage, repackers, conditioners, or cross dockers) involved in handling or moving shipment to the operation;</u> <u>f) for outgoing shipments, intermediary details are required only up to the change in ownership;</u> <u>g) organic certification documentation is required for any repacking, conditioning or relabelling activities.</u>	
4.4.5 4.4.3	~~An identification system shall be implemented to distinguish organic and non-organic crops, livestock (for example, general appearance, colour, variety and types) and products from their organic counterparts. For example, organic and non-organic crops or livestock could differ in their general appearance, colour, or types.~~	Change provides more clarity.

4.4.6 4.4.4	The operator shall design and implement a risk management plan to prevent GE contamination which may include strategies such as physical barriers, border rows, delayed planting, testing of seeds, isolation distances; and equipment and storage sanitation protocols. <u>When transition is preceded by GE crop production, the operator shall implement a risk management plan to prevent emergence of GE seed after the 36-month transition period.</u>	The change outlines GE risk management measures in case GE seed remains in the soil after transition.
4.4.7 4.4.5	Records shall be maintained for at least five years beyond their creation.	See Record keeping at https://mailchi.mp/organicfederation/review-rejectedpetitions
4.4.8 4.4.6	If a pest control substance that is not listed in CAN/CGSB-32.311 is used under any mandatory government program, the operator shall monitor and document its use.	
NOTE	In the event of an emergency pest outbreak, Canadian operators are required to notify their certification body immediately of any change that may affect organic product certification.	

5 Crop production

		Rationale
	Clause 8.4 on Transport applies to the transportation of plants and harvested crops.	
5.1	Land requirements for organic crop production	
5.1.1	This standard shall be fully applied on a production unit for at least 12 months before the first harvest of organic products. Prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop. <u>When transition is preceded by GE crop</u>	The clause describes how to calculate the 36-month transition period following GE

	<u>production, the 36-month transition period is calculated from the date on which the growth of a prohibited GE crop is terminated (e.g., by harvest, tillage, etc.). The operator shall implement a risk management plan to prevent emergence of GE seed after the 36-month transition period (per subclause 4.4.4).</u>	crops (e.g., after harvest/destruction) and the need for a risk management plan.
5.1.2	When new production units are added to an existing organic operation, the operator shall provide records to show that prohibited substances have not been used for at least 36 months (see <u>subclause 5.1.1</u>) and verification shall be conducted before the first harvest of products from this new production unit.	
Note	Part 13 Organic Products of the <i>Safe Food for Canadians Regulations</i> requires that the application for the organic certification of crops grown in fields, gardens or pastures be filed at least 15 months before the day on which the food is expected to be sold. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before these crops may be eligible for certification and one inspection, during production, in the year these crops are eligible for certification.	
5.1.3	The operation shall aim at a complete transition of its production. During the transition period, the operation can maintain, in addition to the production in transition, a non-organic system of production (split operation) that shall be entirely separate and identified separately, pending its incorporation into the overall transition process.	
5.1.4	The operation can be converted one production unit at a time, and each converted production unit shall respect the requirements of this standard. The exception to this norm, parallel production, is only allowed in the following cases: a) annual crops harvested during the final 24 months of the transition period when fields are added to existing operations; b) perennial crops (already planted); c) agricultural research facilities; and d) production of seed, vegetative propagating materials and transplants.	See https://mailchi.mp/organicfederation/review-rejectedpetitions
5.1.5	The following special conditions shall be observed for parallel production:	

	a) The operator shall clearly demonstrate that the identity of the crops produced in this manner can be maintained during their production, harvesting, storage, processing, packaging and marketing; b) The operator shall maintain verifiable, accurate records of both non-organic and organic produce and product storage, transportation, processing and marketing.	
Note	Parallel production crops, both organic and non-organic, are inspected just prior to harvest and an audit of all parallel production crops occurs after harvest.	
5.1.6	All production units shall have distinct, defined boundaries.	
5.1.7	Production ~~methods~~ <u>units</u> shall not alternate between organic and non-organic ~~on a production unit~~ <u>management</u> .	
5.1.8	<u>By exception, due to catastrophic or uncontrollable factors, the operator may temporarily take land out of organic management, provided that:</u> <u>a) the operator submits written notice to the certification body of the intent to remove temporarily a production unit from organic management, justifies why organic status cannot be maintained, and receives conditional approval prior to the use of substances or methods prohibited by this standard. The final decision of the certification body to approve alternation between organic and non-organic management will be based on a written action plan that includes:</u> <u>1) a description of the intended change in management, including a timeline and details of the substances and practices that will be used during the period of non-organic management;</u> <u>2) a timeline for transitioning the land back to organic management; and,</u> <u>3) a description of how the organic plan will be amended to avoid future recurrence, if applicable.</u>	This clause allows alternating between organic and non-organic production on a production unit by exception for catastrophic or uncontrollable factors but only with full disclosure and an action plan in place. The production unit must complete a 36-month transition period before regaining organic status. See Alternating between organic and non-organic production 1 / 2 https://mailchi.mp/organicfederation/alternating-between-organic-and-nonorganic and Alternating between organic and non-organic production 2 / 2

	<u>b) The operator shall maintain verifiable, accurate records of both non-organic and organic production and product storage, processing, transportation, and marketing.</u> <u>c) The land shall comply with requirements established in subclause 5.1.1 to transition back to organic status and comply with subclause 5.1.3.</u> <u>Without prior approval by the certification body as described in subclause 5.1.8 a), the production unit shall not be eligible for organic status for five (5) years following the last use of a prohibited substance or prohibited practice.</u> <u>Note Operators are required to notify their certification body immediately of any change that may affect organic product certification.</u>	https://mailchi.mp/organicfederati on/alternate-survey-results
5.2	Environmental factors	
5.2.1	Measures shall be taken to minimize the physical movement of prohibited substances onto organic land and crops from: a) adjacent areas; b) equipment used for both organic and non-organic crops.	
5.2.2	If unintended contact with prohibited substances is possible, distinct buffer zones or other features sufficient to prevent contamination are required: a) buffer zones shall be at least 8 m (26 ft 3 in.) wide; b) permanent hedgerows or windbreaks, artificial windbreaks, permanent roads, or other physical barriers may be used instead of buffer zones; c) crops grown in buffer zones shall not be considered organic whether or not they are used on the operation; d) crops at risk of contamination from commercialized GE crops shall be protected from cross-pollination. Mitigation strategies such as, but not limited to, physical barriers, border rows, strategic testing or delayed planting shall be implemented unless generally accepted isolation distances for the at-risk crop type are present (see Note below).	

Note	Generally accepted isolation distances for crops at risk of contamination from commercialized GE crop types include: soybeans – 10 m (33 ft); corn – 300 m (984 ft); canola, alfalfa (for seed production) and apples – 3 km (1.8 mi.).	
5.2.3	Untreated wood or wood treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 are permitted, such as for fence posts. a) For new installations or replacement purposes, fence posts or wood treated with prohibited substances are ~~prohibited~~, <u>not permitted</u>. Alternatives, such as metal, plastic, concrete or protective sleeves, may be used. b) <u>An exception, fence posts treated with prohibited substances are permitted as perimeter fencing of production units to manage non-organic livestock or keep wildlife out. Treated fence posts shall not come into contact with an organic crop (including roots). If the livestock is organic, see 6.7.9.</u> c) Recycling of ~~existing~~ <u>previously used</u> fence posts treated with prohibited substances within the operation is permitted: <u>provided that they were installed prior to the operation's initial certification or installed per exception b) and there is no contact with organic crop (including roots).</u>	The issue of treated fence posts has been discussed at every COS revision. Although less harmful treatments for preserving wood have been developed, some of these are still toxic (albeit less so than past treatments) and others are not available in all parts of Canada. The reuse of treated wood and posts within the operation is allowed to enable recycling resources on the operation, and because there is no way to dispose of treated wood other than sending it to a landfill. Additional conditions have been added to strengthen this clause. Due to the important contribution of livestock on an operation, an exception was added to allow perimeter fencing using treated posts under certain conditions. For more info, see https://mailchi.mp/organicfederation/welfare-biodiversity.

5.2.4	~~Management practices shall include measures to promote and protect ecosystem health on the operation and incorporate one or more of the following features:~~ The operator shall include, within the operation, measures that protect existing biodiversity and shall intentionally promote and protect ecosystem health by incorporating one or more of the following features (in addition to the organic practices of cover cropping, green manures, responsible tillage, and diversified crop rotation): <u>a) agroforestry;</u> <u>b) biomass plantings such as for biofuel or bedding;</u> <u>c) grassed waterways;</u> <u>d) pollinator ~~habitat;~~ habitats or insectary areas; ~~c) plantings (such as interplanting, companion planting, or banker plants to provide habitat or beneficial organisms, including beneficial insects);-~~</u> ~~e) other measures which promote biodiversity wildlife habitat; d) maintenance or restoration of riparian areas or wetlands; or e) other measures which promote biodiversity.~~ <u>avian sanctuary;</u> <u>f) tree and shrub establishment;</u> <u>g) vegetative barriers and field borders, wind breaks, or shelter belts;</u> <u>h) water conservation;</u> <u>i) restoration and maintenance or restoration of riparian areas or of wetlands; or</u> <u>j) perennial forage or perennial plantings; or</u> <u>k) pasture.</u>	The change clarifies that ecosystem management measures beyond organic agricultural practices are required (keeping in mind that all agricultural practices disturb natural ecosystems). That said, some organic practices promote biodiversity, such as those identified in (g), j) and k)). The list of measures has been expanded. For more information, see https://mailchi.mp/organicfederation/welfare-biodiversity
Note:	Existing native prairie, parkland, or wetland habitats should be maintained and enhanced whenever possible.	
5.2.5 NEW	<u>Inorganic waste materials shall not be left to accumulate on, or be incorporated into production units. Examples include baler twine, irrigation drip tape, agricultural tarps, potting containers and row cover.</u>	Within the context of protecting and enhancing sustainable agricultural production (ecosystem health), it is

		reasonable to expect operators to have measures in place to avoid the build-up of debris that can degrade into the soil. For more information, see https://mailchi.mp/organicfederation/some-modifications
5.3	5.3 Seeds, <u>seedlings</u> and planting stock	These clauses were modified to ensure clarity of the requirements for seed, annual seedlings and planting stock and to further clarify the specific needs of both perennial planting stock and perennial seedlings/transplants as it relates to the harvest period from planting and the organic status of the harvest. In an effort to clarify and refine the language to support the intent; 5.3.1 was reorganized.
5.3.1	Organic seed, ~~bulbs, tubers, cuttings,~~ annual seedlings, ~~/transplants,~~ <u>perennial seedlings/transplants,</u> planting stock, ~~and (such as bulbs, tubers or cuttings) or other propagules (such as tissue culture)~~ shall be used. ~~Organic seed and planting stock may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.~~	
		Requirements for seed and planting stock are addressed when these are used as inputs for production. However, the 2020 COS requirements were not clear for an operation selling certified organic potted perennial transplants. The clause now specifies that perennial transplants (in pots with soil) when propagated from non-organic planting stock shall be managed organically for at least 12 months before being eligible for organic status.

5.3.2	<u>Organic seed and planting stock may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.</u>	
5.3.3	<u>Perennial transplants propagated from non-organic planting stock shall be managed in accordance with this standard for at least 12 months before the consumer prepackaged transplant (for retail) may be organic. Transplants for use as an input to organic crop production (subclause 5.3.6 e) may be organic in a shorter period of time.</u> ~~Annual seedling transplants started in winter or spring which will be planted in the operation may be started by the operation in structures under 100% artificial lights from seeding to first transplanting. The expression “first transplanting” means moving a seedling to another growing medium (in a box, pot, container or in the ground). All clauses of 7.5 except soil volumes (7.5.2.2, 7.5.2.3, 7.5.2.4) apply to annual seedlings grown in structures.~~	Currently, seed from buffer zones or transitional land cannot be considered organic or used without demonstrating that organic seed is not commercially available. The use of seed from buffer zones or transitional land should be permitted without having to demonstrate that organic seed is not commercially available. Buffer zone and transitional land is managed under organic practices provided the buffer zone is within the operation and not maintained by an adjacent landowner. Using resources from within the operation is preferable to purchasing organic or conventional seed from off-farm.
5.3.4	<u>Non-organic seed (or planting stock) produced on transitional land within the operation or in buffer zones may be planted within the same operation, providing the buffer zone is managed within the operation.</u>	
5.3.5 5.3.2	Non-organic seed and <u>annual or biennial</u> planting stock <u>from outside the operation</u> ~~is~~ <u>are</u> permitted provided that: a) the ~~organic~~ seed or planting stock variety is not produced on or available from within the operation; <u>and</u> b) <u>the</u> organic seed or planting stock ~~of that variety~~ is not commercially available, and a documented search involving potential, known organic suppliers has been conducted; <u>and</u> c) when treated, primed, pelleted or coated, it is with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 with the following exceptions:	See rationale for 5.3.1.

	1) seed primed with substances not listed on Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 is permitted providing that the priming process does not contain substances that are not listed on Table 4.2 (Column 2) or Table 7.3 of CAN/CGSB-32.311; 2) Seeds and planting stock treated with substances necessary for compliance with international, federal or provincial phytosanitary or food safety regulations and approved for use by regulatory agencies such as Pest Management Regulatory Agency (PMRA) are permitted. ~~d) non-organic perennial planting stock treated with substances prohibited by 1.5 a), 1.5 b), 1.5 c) or 1.5 d) shall be managed in accordance with this standard for at least 12 months before the first harvest of organic products. The land on which non-organic stock is planted is subject to the requirements of 5.1.1.~~	
5.3.6	<u>Non-organic perennial seedlings/transplants and perennial planting stock are permitted (see “perennial crop” and “planting stock” definitions in Clause 3) provided that:</u> <u>a) the variety is not produced on or available from within the operation;</u> <u>b) organic seedlings/transplants or planting stock of that variety are not commercially available, and a documented search involving potential, known organic suppliers has been conducted;</u> <u>c) when treated, it is with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 except if the planting stock has been treated with substances necessary for compliance with international, federal or provincial phytosanitary or food safety regulations and approved for use by regulatory agencies such as Pest Management Regulatory Agency (PMRA);</u> <u>d) the land on which perennial planting stock or perennial seedlings/transplants are planted is subject to the requirements of subclause 5.1.1;</u> <u>e) perennial seedlings/transplants, such as strawberry plugs or potted thyme, shall be organic when the first harvest of organic product is within 12 months of planting into the organic production unit. Operators are granted an exemption until the 2030 planting season allowing the use of non-organic perennial seedlings/transplants for harvest within 12 months of planting;</u> <u>f) non-organic perennial seedlings/transplants shall be managed in accordance with this standard for at least 12 months between planting into the organic production unit and the first harvest of organic products;</u>	This clause was created to separate the requirements for perennial production with planting stock from production from seedlings/transplants. The COS 2020 was not clear on whether or not planting stock included perennial seedlings/transplants and did not clearly address the requirements when perennial crops are harvested within 12 months of planting seedlings. For example, strawberry planting stock or seedlings/transplants can produce within a few months of planting, much like an annual production system. Non-organic, untreated planting stock (not treated with prohibited substances after the planting material is harvested and before being planted on the organic operation) such as crowns, plantlets or cuttings (without soil) may produce

	<u>g) non-organic perennial planting stock (which is without soil or growth media as defined in Clause 3) that has not been treated with prohibited substances post-harvest (e.g., treated during storage after being dug up from the non-organic field) may be used to produce organic product within 12 months of planting on the organic operation and being managed in accordance with this standard; and</u> <u>h) non-organic perennial planting stock (which is without soil or growth media as defined in Clause 3) that has been treated with prohibited substances post-harvest (e.g., during storage after being dug up from the non-organic field) shall be managed in accordance with this standard for at least 12 months between planting on the organic operation and the first harvest of organic products.</u>	organic crops within 12 months of planting. This aligns with the allowance of product grown from non-organic, untreated (soilless) tubers, rhizomes and cuttings (i.e., onion sets, garlic bulbs, potato seed) which may be considered to be organic within 12 months of planting. When perennial seedlings/transplants are used, they must be organic in order for the crop harvested within 12 months to be considered organic. This aligns with the requirement for organic annual seedlings. When perennial seedlings/transplants are not organic, these must be under organic management for not less than 12 months after planting before a crop harvest can be considered organic.
5.3.7	<u>Seedlings/transplants</u> <u>Seedlings and transplants shall be produced under the following conditions:</u> <u>a) all subclauses of 7.5 apply to the soil used for production (except soil volumes specified in subclauses 7.5.5.2, 7.5.5.3, and 7.5.5.4). A soilless substrate/growth media may be used at first seeding without nutrient supplementation;</u> <u>b) seedlings/transplants that are started in winter or spring for use within the operation may be grown by the operation in structures under 100% artificial lights from seeding to final transplanting, meaning moving a seedling into the production unit (container or soil); and</u> <u>c) substrates used in the production of propagules produced through plant tissue culture or micropropagation shall comply with 1.4 a) of this standard.</u>	The new wording clarifies that a soilless substrate can be used in the initial stage of seedling growth when seed vigour is all that is needed for sprouting and no nutrient supplementation is required. It also clarifies that the clause refers to all seedlings, not just annuals, whether grown in structures or outside. Regarding starting seedlings with 100% artificial light, the reference to "first transplanting" was changed to "final transplanting" because some plants may be moved to bigger pots several times before being moved to natural light or to the final

		production site, whether it is a field, greenhouse soil, or greenhouse container.

5.4	Soil fertility and nutrient management	
5.4.1	The main objective of the soil fertility and nutrient management program shall be to establish and maintain a fertile soil using practices that: a) maintain or increase levels of soil organic matter, b) promote an optimum balance and supply of nutrients, and c) stimulate biological activity within the soil. <u>d) mitigate excess nutrient build-up in the soil or leaching into the environment.</u>	Clause 5.4.1 d) was added to emphasize that nutrients should be managed responsibly and not cause a build-up or leaching of excess nutrients into the environment.
<u>5.4.2</u>	~~Where appropriate, the~~ Soil fertility and biological activity shall be maintained or increased through: a) crop rotations <u>or sequences</u> that are ~~as varied as possible and include~~ diversified, ~~and include~~ including: 1) plow-down crops, legumes, catch crops and deep-rooting plants; <u>2) cover crops to prevent erosion; and</u> <u>3) no more than two consecutive years of the same annual crop species (when intended for sale);</u> b) incorporation of plant and animal matter in compliance with this standard and with Table 4.2 (Column 1) of CAN/CGSB-32.311, including ~~the following~~: 1) composted animal and plant matter; 2) non-composted plant matter, specifically legumes, plow-down crops or deep-rooting plants within the framework of ~~an appropriate multi-year~~ a multi-crop rotation; and 3) unprocessed animal manure, including liquid manure and slurry, subject to the requirements of 5.5.1; <u>and</u> <u>c) where appropriate, perennial cropping systems employ techniques, such as alley intercropping with permanent cover, cover crops or plow-down crops.</u>	The clause has been amended to reinforce the need for soil enrichment practices, including farms practicing perennial crops.

5.4.3 5.4.4	Plant and livestock materials, <u>as well as supplemental minerals and fertilizers</u> shall be managed to maintain or improve soil organic matter content, crop nutrients and soil fertility, <u>while minimizing negative environmental impact.</u> ~~and This shall be done~~ in a manner that does not contribute to the contamination of crops, soil or water by plant nutrients, pathogenic organisms, heavy metals or residues of prohibited substances.	Clause 5.4.3 was modified to include supplemental minerals since these could pose risks if applied in excess.
5.4.4 5.4.5	The organic matter produced on the operation shall be the basis of the nutrient cycling program. It may be supplemented with other nutrient sources described in ~~the~~ <u>this</u> standard or listed in Table 4.2 (Column 1) of CAN/CGSB-32.311. <u>However, water-soluble sources of nitrogen and phosphorus shall be limited to 20% of the crop's needs of each nutrient based on realistic yields for the crop. Manure, anerobic digestate, and compost or compost tea are not included in the 20% limitation unless fortified with water-soluble sources of nitrogen and phosphorus.</u> Manure is ~~also~~ subject to the requirements of 5.5.1-, <u>and, in all cases, section 5.4.3 shall be respected.</u> <u>If the 20% limitations of soluble nitrogen or phosphorus are exceeded in existing nutrient management plans, the operator shall develop a corrective action plan by the end of March 2027, to reduce the use of these soluble nutrients by the end of December 2029.</u>	Clause 5.4.4 now includes a restriction on the application rates of water-soluble nutrients nitrogen and phosphorus limiting them to 20% or less of crop needs. These soluble nutrients can be used to address immediate issues, but should not be the basis of the nutrient plan.
5.4.5 5.4.3	~~Tillage and cultivation practices,~~ <u>when practiced,</u> shall <u>be conducted in a responsible manner in order to:</u> a) maintain or improve the physical, chemical and biological condition of soil, ~~and~~ b) minimize damage to the structure and tilth of soil, ~~and~~ c) <u>reduce soil salinization, and</u> d) minimize soil erosion. <u>The operator shall maintain records of tillage events.</u> <u>Responsible tillage to mitigate risks of soil degradation from erosion, compaction/plow pan formation, salinization, and soil organic matter loss is described as: The use of tillage strategically and purposefully within cropping systems to enhance management and productivity in cropping systems while minimizing soil degradation. Practices may include reducing the frequency, intensity, aerial extent, and depth of tillage, as well as minimizing topsoil inversion and maintaining surface residue.</u>	<i>The order of clauses changed: this was 5.4.3.</i> The clause has been modified because tillage practices can affect soil health. Reduction of soil salinization has been added as a potential reason for tillage. The requirement to maintain records of field work (as stated in 4.4.1) has been reiterated here. Responsible tillage has been defined in detail with the goal of reducing soil degradation and to emphasize the importance of tillage as a tool in organic agriculture that should be used wisely and responsibly. See https://mailchi.mp/organicfederation/tcmtg-diverseschanges.

5.4.6	Burning to dispose of crop residue produced on the operation is prohibited. However, burning may be used for documented problems with pests, including insects, diseases or weeds (see 5.6.1), or to stimulate seed germination.	
5.5	Manure management	
5.5.1	Manure sources	
5.5.1.1	Animal manure produced on the operation shall be used first. When all available manure is used up, organic manure from other sources may be used. If organic manure is not commercially available, non-organic manure is permitted provided that:	See https://mailchi.mp/organicfederation/some-modifications .
a)	the non-organic source is not a fully caged system in which livestock cannot turn 360°; and	
b)	livestock is not permanently kept in the dark; and	
c)	the source and quantity of manure, type of livestock, and evaluation of the criteria in <u>subclauses</u> 5.5.1.1 a) and 5.5.1.1 b) shall be recorded.	
Note:	Organic operations should make it a priority to use manure obtained from transitional or extensive livestock operations, not from landless livestock production units or from livestock operations that use genetically engineered (GE) ingredients or GE derivatives in animal feeds.	
5.5.2	Land application of manure	
5.5.2.1	The manure application program shall address land area, rate of application, time of application, incorporation into the soil and retention of nutrient components.	
5.5.2.2	Soil amendments, including liquid manure, slurries, compost tea, solid manure, raw manure, compost and other substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311, shall be applied to land in accordance with good nutrient management practices.	
Note:	In Canada, some additional provincial requirements may also apply.	

5.5.2.3	Where manure is applied, the soil shall be sufficiently warm and moist to ensure active bio-oxidation.	
5.5.2.4	The seasonal timing, rate and method of application shall ensure that manure does not: a) contribute to the contamination of crops by pathogenic bacteria; b) create significant run-off into ponds, rivers and streams; c) contribute significantly to ground and surface water contamination.	
5.5.2.5	~~The non-composted solid or liquid manure shall be:~~ <u>Animal manure that is neither composted (according to Table 4.2 Compost of CAN/CGSB 32.311), nor dried (according to Table 4.2 Animal manure, dried), nor otherwise specifically listed in Table 4.2 Column 1, must be:</u>	The annotation was changed to reflect other changes in manure listings and also to clarify when the requirements for 90 or 120 days between application and harvest apply.
	a) incorporated into the soil at least 90 days before the harvest of crops that do not come into contact with soil and are intended for human consumption. <u>As an exception, the manure may be incorporated into the soil at least 70 days before the harvest of grain crops that do not come into contact with soil and are intended for human consumption when not consumed in their raw state;</u> or	
	b) incorporated into the soil at least 120 days before the harvest of crops that have edible parts that come into direct contact with the surface of the soil or with soil particles.	
<u>Note</u>	<u>Operators should ensure compliance with federal, provincial, and commodity association on-farm food safety regulations and guidelines.</u>	
5.5.2.6	If livestock are used as part of the cropping or pest control program, a management plan shall be in place to ensure that livestock are controlled and that manure or manure-related contamination does not reach the portion of the crop intended for harvest.	
5.5.3	Manure processing	
	Processing of animal manure using physical treatment (for example, dehydration), biological treatment or ~~chemical~~ treatment with substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 is permitted. Loss of nutritional elements due to processing shall be minimized.	The word “chemical” was removed because it is unnecessary.

5.6	Management of crop pests, including insects, diseases and weeds	
5.6.1	Practices to control pests, including insects, diseases and weeds, shall focus on organic management practices that enhance crop health and reduce losses due to weeds, disease, insects and other pests. Management practices include cultural practices (for example, crop rotations, establishment of a balanced ecosystem, and use of resistant varieties), mechanical techniques (for example, sanitation measures, cultivation, trapping, mulching and grazing) and physical techniques (for example, flaming against weeds and the use of heat against diseases).	
5.6.2	When organic management practices alone cannot prevent or control crop pests, including insects, diseases and weeds, a biological or botanical substance, or other substance listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 may be used. Conditions that led to the use of substances shall be documented in the organic plan (see clause 4).	
5.6.3	If application equipment, such as a sprayer, is used to apply prohibited substances, it shall be thoroughly cleaned prior to use in an organic crop.	
5.7	Irrigation	
	The irrigation of organic crops is permitted provided that the operator documents the precautions taken to prevent contamination of land and products with substances not included in CAN/CGSB-32.311.	
5.8	Crop product preparation	
	Wherever organic product preparation takes place, 8.1 and 8.2 apply.	
5.9	Facility pest management	
	Subclause 8.3 applies to pest management practices in and around crop facilities.	

6 Livestock production

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	Livestock excludes apiculture which is covered in 7.1.	Rationale
	Subclause 8.4 on Transport applies to the transportation of organic livestock.	

6.1 General		
6.1.1	Livestock can make an important contribution to an organic agricultural system by: a) improving and maintaining the fertility of the soil; b) managing the flora through grazing; c) enhancing biodiversity; and d) facilitating complementary interactions on the operation.	
6.1.2	~~Organic livestock products shall be from livestock raised according to this standard. 6.2.1~~ Livestock breeds, strains and types shall be a) suitable for, and able to adapt to, site-specific conditions within the local environment and production system; b) known for their absence of disease and health problems, specific to breeds or strains; c) recognized for their vitality and resistance to prevalent diseases and parasites.	Moved from 6.2.1 to 6.1.2 for flow. The 2020 COS 6.1.2 is moved to 6.2, integrating “origin of livestock” and “livestock products”.
6.1.3	Livestock production is a land-related activity.	

a) Herbivores shall have <u>daily</u> access to pasture during the grazing season (see definition in Clause 3) and access to the open air at other times whenever weather conditions permit: a) calculated on the basis of <u>daily</u> dry matter intake, the consumption of grazed forage by ruminants that have reached sexual maturity shall represent a minimum of 30% of the total forage intake; b) consumption of grazed forage shall rise above 30% <u>of forage intake</u> during high forage growth periods; <u>c) consumption of grazed forage below 30% of forage intake is permitted at the beginning and end of grazing season;</u> <u>d) producers shall record the following details of the grazing season:</u> 1) <u>date of the beginning and end of the grazing season,</u> 2) <u>dates of confinement periods and reasons for confinement,</u> 3) <u>c) rotation details: entry and exit dates, size of area and number of animals on each paddock or pasture. For example, a grazing calendar or grazing chart can be used.</u>	New numbering of items. This change addresses three concerns: 1) clarifies how to calculate the dry matter requirement from pasture. It needs to be done on a daily basis; 2) addresses milking cows that are transitioning onto pasture; they cannot have an abrupt change in diet so would not be able to attain 30% of forage intake from pasture on day 1; 3) encourages producers to put animals out on pasture even when their consumption from grazing would make up less than 30% of forage intake (for example, cleaning up a pasture at the end of the season). To address 2) and 3), wording was added to allow pasture to be less than 30% of forage intake during the transition into and out of the grazing season for all ruminants, 6.1.3 a) 3) The 2025 COS would require recording the timing and other details of grazing. This is more important with the modification of the definition of grazing season in the 2025 COS, and with the uptake of robotic milkers, which change the way dairy cows are sent to pasture. It is important for producers to document precisely when grazing is happening given the need to calculate forage intake from the start of the grazing season.
e) a minimum of 0.13 ha (0.33 ac.) per animal unit shall be devoted to grazing. [One animal unit = one cow or one bull, or two calves each 102 to 227 kg (225 to 500 lb), or five calves, each less than 102 kg (225 lb), or four ewes and their lambs, or six does and their kids];	

	f) Other livestock, including poultry, shall have access to the outdoors whenever weather conditions permit;	
	g) Winter-only production of poultry is restricted to operations that are able to comply with land-related requirements for the specific livestock type, regardless of the time of year (see <u>subclause 6.13.13</u>);	
	h) Exceptions in subclauses 6.7.2 and 6.11 may apply.	
6.1.4	Livestock stocking rates shall correspond to local agri-climatic conditions and take into consideration feed production capacity, stock health, nutrient balance and environmental impact.	
6.1.5	Livestock management shall aim to utilize natural breeding methods, minimize stress, prevent disease, progressively eliminate the use of chemical allopathic veterinary drugs, including antibiotics, and maintain animal health and welfare.	
6.1.6	As a general principle, the operator shall demonstrate their commitment to animal welfare. When an animal welfare issue is identified, the operator shall develop a corrective action plan. The operator shall document demonstrated improvements in animal welfare practices and shall make available upon request any documents or assessments mandated by industry associations.	
<u>6.1.7</u>	<u>The health and welfare of organic livestock shall be monitored, as well as their housing, feeding, watering and fencing systems at the frequency required in the applicable Code of Practice (see Clause 2.4) or an equivalent or superseding welfare program.</u> <u>a) Where the Code of Practice or equivalent programs do not regularly require daily checks, at a minimum, all confined livestock (those not on pasture or extensive rangeland) and livestock reliant on a mechanical feed or water source shall be monitored at least once daily.</u> <u>b) Individuals responsible for monitoring livestock shall be trained.</u>	To ensure the equivalency to relevant welfare standards, including the codes of practice, requirements regarding the frequency of checking animals has been added. The type of monitoring has not been specified and may include by drone, automated system, or in person. See https://mailchi.mp/organicfederation/welfare-biodiversity.
6.2 Origin of livestock <u>and livestock products</u>		

		The change integrates livestock products into section 6.2.
6.2.1	~~Livestock breeds, strains and types shall be~~ <u>Origin of livestock</u>	Previously, livestock products were mentioned in 6.1.2 (with other unrelated clauses in between), and 6.1.2 didn't include any details. Details were all under 6.2 in 2020 COS.
	~~suitable for, and able to adapt to, site-specific conditions within the local environment and production system;~~	
b)	~~known for their absence of disease and health problems, specific to breeds or strains;~~	
c)	~~recognized for their vitality and resistance to prevalent diseases and parasites.~~	
6.2.1.1	~~Livestock breeders~~	Reworded with the same meaning to put focus on the livestock instead of "livestock breeders".
6.2.2	<u>Breeding stock shall:</u>	
a)	~~be bred using~~ use natural methods of reproduction. ~~A or artificial insemination is permitted, including the use of sexed semen if it is mechanically separated~~ <u>sexed semen</u> ;	
b)	~~not be bred using~~ not use embryo transfer techniques or breeding techniques using genetic engineering or related technology;	
c)	~~not be administered~~ use reproductive hormones to trigger and synchronize estrus.	Already required in other areas, such as 4.4.2, and added here for clarity.
d)	<u>be permanently identifiable and traceable to their birth on an organic operation or to their date of entry into organic management.</u>	
6.2.1.2 NEW	<u>Livestock shall be continuously managed organically from birth or their transition date.</u>	No change for operators. Change of wording to focus on the organic livestock instead of the organic livestock products, which are now covered in 6.2.5.
6.2.3	~~Livestock used for organic livestock products~~	Language around livestock being born on organic production units is now clearly included in 6.2.5 and 6.3.1
6.2.3.1	~~Livestock used for organic livestock products (e.g., eggs, milk, meat, etc.) shall~~	
a)	~~be born or hatched on organic production units;~~	

b)	be the offspring of organic parents;	List of products is now more clear in 6.2.5.
c)	be managed organically throughout their lifetime.	
6.2.3.2	Exceptions to 6.2.3.1 a), b), and c) apply to poultry:	
a)	~~poultry products shall be from poultry that has been under continuous organic management, beginning no later than the second day of life; and~~	These two sections (6.2 and 6.3) had many contradictory statements, which resulted in confusion for inspectors and producers. The statements have been reworded for clarity and moved to: • 6.2.2 if the information applies to all organic livestock; • 6.2.1.3 if the information only applies for conventional replacement breeding stock; • 6.3 as to how they apply in transition for new operations; • 6.6.10 for impact of usage of prohibited healthcare products on gestational offspring.
b)	~~no medication other than vaccines shall be used to treat fertilized eggs or day-old poultry.~~	
6.2.3.3	~~An exception to 6.2.3.1 a), b) and c) applies when herds and individual animals (used as new breeding stock), whether from within or from outside the operation (according to 6.2.4), are converted to organic production:~~	
a)	~~animals used for milk production shall have been under continuous organic management for at least 12 months; and~~	
b)	~~animals used for meat shall have been under continuous organic management from the beginning of the last third of the dam's gestation period.~~	
a)	<u>Breeding stock and dairy animals shall only enter organic management once, either at birth or when transitioned into organic management. When a non-organic breeding animal enters into organic management, its meat shall never be organic.</u>	
6.2.3.2	Exceptions to 6.2.3.1 a), b), and c) apply to poultry:	Combines 2020 COS 6.2.4 a) and 6.2.4 b) and makes it more clear.
a)	~~poultry products shall be from poultry that has been under continuous organic management, beginning no later than the second day of life; and~~	
b)	~~Livestock or livestock products removed from an organic operation and subsequently managed on a non-organic operation shall be considered non-organic, and shall not be re-transitioned into organic management.~~	

6.2.3.3	An exception to 6.2.3.1 a), b) and c) applies when herds and individual animals (used as new breeding stock), whether from within or from outside the operation (according to 6.2.4), are converted to organic production:	The clause was changed to clearly prohibit the process of alternating in and out of organic, and is intended to strengthen the concept at the root of the Standards Interpretation Committee response 259. See articles at https://mailchi.mp/organicfederation/alternating-between-organic-and-nonorganic and https://mailchi.mp/organicfederation/alternate-survey-results.
a)	animals used for milk production shall have been under continuous organic management for at least 12 months; and	
b)	animals used for meat shall have been under continuous organic management from the beginning of the last third of the dam's gestation period.	
6.2.1.3 6.2.4	Animals purchased for breeding shall be organic, <u>except in the following circumstances:</u> However:	This contains a new requirement for a documented search for commercially available organic breeding stock before non-organic breeding stock can be brought into the operation. This is similar to the requirements for purchasing non-organic seed in organic crop production. The requirement to enter organic management before gestation begins is included here for non-organic breeding stock (from COS 2020 6.2.4 a and c). For replacement gilts, the weaker requirement of enabling non-organic gilts to enter organic management as late as the last third of gestation is allowed under COS 2020 6.2.3.3 b) but is specifically addressed here to provide more clarity. (A gilt is a female pig that has not had a litter.) The requirement that “meat from such animals shall be non-organic” is now found under 6.1.7.3. The information from the 2020 COS 6.2.4 c is now included in 6.3.5 and reworded for clarity.
a)	~~if when suitable organic breeding stock is not commercially available, non-organic breeding stock may be integrated into the organic operation provided that: non-gestating breeder animals and non-organic breeding males may be brought onto an organic operation and integrated into the organic system. Meat from such animals shall be non-organic;~~ <u>1) a documented search of potential, known organic breeding stock suppliers has been conducted; and</u> <u>2) females are non-gestating and non-lactating at their time of arrival on the organic production unit, except replacement gilts, which must be integrated before the last third of gestation.</u>	
b)	~~if transferred outside the organic operation, livestock obtained from non-organic sources in accordance with 6.2.4 a) shall be considered non-organic, either for breeding or slaughter;~~	

e)	~~when expanding a herd and increasing the land base, breeding stock brought onto the operation may graze third year transitional pasture until the end of the second trimester;~~	
d)	~~non-organic animals brought into a milk production unit shall be non-lactating;~~	The information in the 2020 COS 6.2.4 d is now included in 6.2.1.3 a) 2, and combined with 2020 COS 6.2.4 a), so that it covers both dairy cows and non-organic breeding stock for meat operations.
<u>b-e)</u>	in case of catastrophic events, such as a barn fire or disease leading to a need for ~~herd~~ repopulation, non-organic breeding stock (excluding poultry) may be brought onto an organic operation before the last third of gestation if suitable organic animals are not commercially available (as defined in Clause 3).	Removes the word ‘herd’ to make it more broadly applicable.
<u>6.2.1.4</u>	<u>Organic ruminant producers shall produce sufficient suitable replacement stock within the organic operation. When suitable replacement stock cannot be produced on the operation in sufficient numbers, purchase of replacement stock may be supplemental (less than 50%) to on-farm production of ruminant breeding stock.</u> <u>Note: It is expected that breeding stock replacement rates in organic farms be low and breeding stock lifespans be long and healthy. If a significant portion of the breeding stock on an operation requires replacement each year, operators are encouraged to review their organic management practices and investigate potential changes to improve sustainability and increase breeding stock longevity.</u>	Retains the intent of the COS 2020 6.2.3.1 b) in that organic operators are expected to raise as much of their own replacement breeding stock as possible and avoid being reliant on external breeding stock. Organic principles show a preference for all livestock on organic farms to be certified organic: both the breeding stock and the animals that are producing organic products (COS 2020 6.2.3). However, the standards cannot require operators to produce 100% of their own breeding stock for many reasons, including the need for genetic diversity. For poultry and swine, most producers currently do not raise their own breeding stock, and instead rely on non-organic breeding stock to produce hybrid offspring. Therefore, it is more likely that ruminant operations can adhere to the principles stated in the COS 2020 6.2.3. This new clause expands and clarifies this expectation.

6.2.5	Livestock or livestock products removed from an organic operation and subsequently managed on a non-organic operation shall be considered non-organic.	This is now included under 6.2.1.2 b).
6.2.2	<u>Organic livestock products</u>	
6.2.2.1	6.1.2 Organic livestock products shall be from livestock raised according to this standard.	From COS 2020 6.1.2.
6.2.2.2	~~6.2.3.3 b) animals used for~~ 6.2.2.2 Organic milk production shall ~~have been~~ be the product of lactating ruminants born on organic production units and under continuous organic management ~~for at least 12 months~~ , <u>except in the following circumstances:</u> a) <u>when operations initially transition into organic production following the requirements and allowances in 6.3, or</u> b) <u>integration of non-organic breeding stock following the requirements and allowances in 6.2.1.3 and under continuous organic management for at least 12 months.</u>	From COS 2020 6.2.3.3 a). When entire operations transition into organic production, the organic management of breeding stock starts a minimum of 12 months prior to start of organic production
6.2.2.3	~~6.2.3.3 b) animals used for~~ Organic meat and slaughter by-products (e.g., bones, gelatin etc.), <u>excluding poultry products,</u> shall ~~have been~~ be the product of animals born on organic production units and under continuous organic management from the ~~beginning of the last third start~~ of the dam's gestation period, <u>except in the following circumstances:</u> a) <u>when operations initially transition into organic production following the requirements and allowances in 6.3, or</u> b) <u>integration of non-organic breeding stock following the requirements and allowances in 6.2.1.3.</u>	From COS 2020 6.2.3.3. b) and 6.2.4 a). This change cleans up a significant source of confusion between these two clauses, which is shown in Standards Interpretation Committee Question 87. 6.2.3.3 b) allows animals to enter organic management until the last third of gestation while 6.2.4 a) cuts off entry into organic management at the start of gestation. We have now made it clear that all breeding females must enter organic management by the start of gestation to produce organic offspring, with the only exception being for gilts first entering into organic management, covered in 6.2.1.3.a) 2.

6.2.2.4	~~6.2.3.2 Exceptions to 6.2.3.1 a), b), and c) apply to poultry: a) Organic poultry products (e.g., eggs, meat and slaughter by-products) shall be from poultry that has been the product of birds under continuous organic management, beginning no later than the second day of life.~~ ~~b) No medication other than vaccines shall be used to treat fertilized eggs or day-old poultry.~~	Content from COS 2020 6.2.3.2: no change just re-worded.
6.3	Transition of livestock production units to organic production ~~[except poultry covered by 6.13.1]~~	This clause now applies to all livestock.
6.3.1 6.3.2	~~6.3.2 Transition of land intended for feed crops or pasture shall comply with 5.1.~~ Production of organic livestock products may begin, and offspring born of transitioned breeding stock may receive organic status, only when the livestock production unit has met the following requirements: a) <u>all land to which livestock have direct access, including pastures and outdoor areas, have completed organic transition as per Clause 5.1;</u> b) <u>all rations meet organic feeding requirements in 6.4, with the exception for transitional feed in subclause 6.3.5; and</u> c) <u>all applicable organic livestock production practices are implemented and documented.</u>	Improves clarity and divides the transition requirements into three clear time intervals: the moment of certification (6.3.1), 3 months before certification (6.3.2) and 12 months before certification (6.3.3). Aligns with crop requirements (5.1.2) - the verification will be conducted before the first harvest of products, which will be in the final 3 months
6.3.2 6.3.1	~~6.3.1 If an entire dairy herd is under conversion to organic production, the operator shall provide:~~ a) ~~in the first nine months of the 12-month transition period, a minimum of 80% feed, calculated in terms of dry matter intake, that is either organic or raised on land included in the organic system plan that is managed in accordance with clause 5 (Crop Production) of this standard; and~~ b) ~~only organic feed during the final three months of the 12-month transition period.~~ <u>During the final three months of transition of livestock production units:</u>	

	<u>a) feed shall be organic, or produced within the operation on lands that are in their final year of transition into organic production, and</u> <u>b) all applicable organic livestock production practices are implemented and documented.</u>	
6.3.3 ~~6.3.1 a)~~	~~6.3.1 a) in the first nine months of the 12-month transition period, a minimum of 80% feed, calculated in terms of dry matter intake, that is either organic or raised on land included in the organic system plan that is managed in accordance with clause 5 (Crop Production) of this standard; and~~ <u>During the first nine months of the 12-month of transition of livestock production units:</u> <u>a) at least 80% of feed (dry matter basis) for transitioning breeding stock shall be either organic, or transitional feed produced within the operation,</u> <u>1) the remaining 20% of feed for transitioning breeding stock may be non-organic;</u> <u>2) use of non-organic feed (which may contain GMOs or other prohibited substances) shall be documented and traceable; and</u> <u>b) plans shall be in place to comply with all applicable organic livestock production requirements.</u>	
6.3.1 b)	~~only organic feed during the final three months of the 12-month transition period.~~	Content is captured in 6.3.2.
6.3.4 6.3.3	<del>6.3.3 When an animal production unit, such as an entire herd or flock, is in transition to organic production, the pasture and feed and forage that is produced during the final 12 months of the land transition period may be considered organic when on the operation in the final 12 months of the land transition period may be consumed by livestock on in the same production unit. ~~When~~ this feed and forage is stored, it:</del> <u>a) may be fed as organic within the livestock production unit for up to 36 months following the completion of transition, and</u>	Re-written to provide clarity. There is a new allowance for transitional feed produced on the same operation to be used for 36 months after transition. Previously, there was a lack of clarity, as demonstrated in Standards Interpretation Committee response 257.

	b) shall not be considered organic outside the <u>livestock</u> production unit.	
6.3.5 6.2.4 c)	~~6.2.4 c) when expanding a herd and increasing the land base,~~ <u>When transitioning additional land and expanding existing organic herds, transitioning breeding stock brought onto the operation may graze third-year transitional pasture until the end of the second trimester beginning of the last third of gestation.</u>	Reworded for clarity and consistency (using “the last third of gestation” as in 6.2.1.3 a) 2) of the 2026 version. Bringing transition information into the appropriate section.

6.4 Livestock feed		
6.4.1	The operator shall provide an organic feed ration that is balanced to meet the nutritional requirements of the livestock.	
6.4.2	Livestock feed shall consist of substances that are necessary and essential for animal health, well-being and vitality, and that meet the physiological and behavioural needs of the species in question.	
6.4.3	<u>Operators shall hold relevant professional qualifications, or maintain a relationship with a qualified expert or registered professional, such as an agrologist, nutritionist or experienced peer, who can assist with nutritional needs of animals as described in 6.4.1 and 6.4.2.</u>	There are two associated changes (see rationale in 6.4.4 k). Removal of the long stem forage requirement, and the addition of requiring to consult with an animal nutrition expert.
6.4.4 6.4.3	Specific livestock rations shall take the following into account: a) for young mammals, the need for natural milk, including colostrum, within the first day of life; b) in dairy operations, ~~calves, lambs and kids~~ offspring may be taken from their mothers at the age of 24 hours, provided that they receive colostrum. If contagious diseases are present in the herd <u>or flock</u> , removal can occur sooner than 24 hours provided that the calves, lambs ~~and or~~ kids receive colostrum.	Prolonged periods of contact between dams and offspring, or the use of a foster animal (e.g., nurse cow) offer species-appropriate natural behaviour and address consumer concerns. These practices have been shown in studies to improve both calf weight gain and social

	<u>Note: It is recommended to allow prolonged suckling or contact, beyond 24 hours, between dairy offspring and dams, for example by keeping offspring with their dam for some portion of the day (calf-sharing) or using foster animals (nurse cows). This note will be reviewed in 2031.</u>	behaviour, and decrease both suckling on other calves and concentrate intake. The 2025 COS recommends, but doesn't require, a prolonged suckling period; this note will be revisited in the next review.
	c) <u>in meat operations</u> when removal of ~~beef~~ calves, lambs ~~and or~~ kids from their mother is necessary to prevent the spread of a contagious disease, the use of non-organic milk or non-organic milk replacer is permitted as part of a veterinary-approved plan of disease eradication if organic alternatives are commercially unavailable. The veterinary-approved plan of eradication shall include a timeline and preventative measures such as testing milk, blood or manure, or pasteurizing milk. In order of preference, the following can be used (provided it is free of medication): organic milk (including pasteurized). In order of preference, the following can be used (provided it is free of medication): 1) organic milk (including pasteurized), 2) organic milk replacer 3) non-organic milk, or 4) non-organic milk replacer;	The change clarifies that clause 6.4.3 c) only refers to meat animals, not dairy animals. In ruminant operations raising animals for meat, there is no readily available source of organic milk on the farm like there is in a dairy operation - it is generally not feasible to milk a beef cow, for example. In these situations, operators can use non-organic milk as described in the clause. On an organic dairy operation, organic milk is much more accessible, so 6.4.3 c) does not apply.
	d) calves shall be given fresh, whole, organic milk or reconstituted organic milk provided that it is free of medication until the age of three months;	
	e) calves can be fed milk from an organic cow that received treatment with antibiotics if a withholding period of twice the label requirement or 14 days, whichever is longer, is applied;	
	f) lambs and kids shall be given fresh, whole, organic milk or reconstituted organic milk until the age of two months or a weight of 18 kg (39.7 lb);	
	<u>g) ruminants shall be weaned gradually to minimize stress.</u> <u>1) dam-raised calves, lambs, and kids shall be weaned by limiting dam contact or nursing using strategies such as fenceline weaning, nose paddle/two-stage weaning, or natural weaning.</u> <u>2) calves, lambs, and kids that are separated from their dams shortly after birth and fed milk (hand-raised) shall be weaned from milk gradually by reducing the quantity or frequency of milk feeding over at least five days.</u>	Reducing milk feeding over time rather than cutting it off abruptly has significant benefits to the welfare and health of young ruminants, and is in line with organic principles. This change would require young ruminants for both dairy and meat production to be weaned from milk gradually. This is a relatively new requirement in the <i>Code of Practice for the Care and Handling of Dairy Cattle</i> and is not regularly used for other types of livestock. For some beef, lamb and non-dairy goat producers, this change will require a change

	<u>Note: Research on the benefits and methods of gradual weaning in non-ruminants is still growing, and operators are encouraged to monitor developments in this area.</u> g-h) if they are not nursing, young animals shall be fed to meet their nutritional requirements and to achieve optimal growth and health by using artificial teats to satisfy their motivation to suck; h) i) dairy calves, <u>kids, and lambs</u> shall have access to ~~solid food~~ <u>forage</u> at all times;	in management, but there are different options available to fit different systems. Meat animals gradually move from milk to solid food, as the offspring are with the dam for much longer than for dairy animals. But abrupt separation from the dam is still very stressful even though the nutritional transition is gradual. A survey of beef producers in Canada in 2022-2023 found that 51% are using traditional weaning while 32% using fenceline weaning and 12% used nose paddles, so these methods are already coming into use. With this change, gradual weaning will be a way for organic producers (of non-dairy ruminants) to differentiate themselves from conventional producers.
		This change makes it so that all young dairy animals must have free choice access to "solid food", and improves the clause by replacing "solid food" with "forage", which is what the young ruminants really need. There is no requirement to provide free-choice access to grain.
Note:	Refer to the <i>Code of Practice for the Care and Handling of Dairy Cattle</i> for recommendations on colostrum feeding and the quantity of milk to be fed to dairy calves. ¹	
	j) for ruminants, at least 60% of dry matter in daily rations shall consist of: hay; fodder that is fresh or dried; or ensiled forage, for example, fermented grass, legumes, and corn plants. An	See a rejected petition on the Forage to grain ratio in the diet of ruminants at

¹ In this standard, Codes of Practice or Code of Practice refers to Canada's best practices for the care and handling of livestock (<https://www.nfacc.ca/codes-of-practice>). See 2.4.

	increased grain ration is permitted to ensure that nutritional requirements are met during uncommonly cold periods or when forage quality is compromised due to extraordinary weather events; ~~k j) if ensiled forage is fed to ruminants, at least 15% of the total dry matter in daily rations shall consist of long fibre forage, that is greater than 10 cm (4 in.) stem length. When ensiled corn is fed, unless there is analysis to the contrary, it shall be considered 40% grain/60% forage. The proportion of grain in ensiled corn shall be included in the percentage of grains in the ration (see 6.4.4 j);~~ ~~l k) in the finishing phase, poultry shall be given grain;~~ ~~m t) poultry and pigs shall be given have daily access to organic plant material vegetable matter other than grain; (i.e., the cereals, pulses and oilseeds normally found in the concentrate portion of a ration). Acceptable sources include but are not limited to pasture, hay, straw, alfalfa pellets, corn cobs, vegetables or fruit;~~	https://mailchi.mp/organicfederation/review-rejectedpetitions. There are two associated changes (see also the new 6.4.3): 1) Removal of the long stem forage requirement and 2) the additional requirement to consult with an animal nutrition expert: 1. There is new knowledge and under-standing about forage quality. Stem length is no longer the main measurement of effective fibre; we have other tools and criteria to measure this: the amounts of NDF (neutral detergent fibre) and ADF (acid detergent fibre) in the ration (i.e., direct measurements of the quantity and quality of the fibre) and the Penn State Particle Separator for silage particle size. 2. There is an issue in auditing the length and percentage of long stem fibre in a ration. This is difficult to measure or judge with the eye. 3. This clause doesn't exist in other organic standards so this clause can put Canada at a competitive disadvantage. Other countries do not see the need to require long-stem forage in organic production. 4. The services of a nutritionist or similar advisor should be used as the effective fibre question is more complex than can be mandated in the standards, but it is very important that ruminants get the correct amount and quality of fibre. To help ensure that all organic livestock have suitable diets, all organic livestock producers must now have access to nutrition advice.

		To provide more clarity in the dietary requirement for pigs and poultry, the term "vegetable matter" was replaced with the term "organic plant material." Examples of plant material that are suitable to a variety of flock/herd sizes and type of barns was added. The new text also clarifies that this plant material is separate from grain and that it shall be provided daily. It turns out that vegetable matter, particularly roughage, provides many benefits. It supports a healthy gut biome (intestinal microorganisms) in pigs and poultry. As well, fibre provides a sense of satiation. Basically, the pigs and chickens feel 'full,' not hungry, and this reduces the frequency of aggressive behaviours such as feather picking. In addition, vegetable matter enriches the environment by giving livestock something to manipulate, whether it is hay or vegetables, but environmental enrichment is addressed specifically in other clauses.
	<u>n. 4</u>) poultry shall be fed daily. A "skip-a-day" feeding regime for breeding birds is prohibited;	
	<u>o. 4</u>) rabbits shall be given forage, such as grass and hay, and have access to material that keeps teeth healthy, such as gnawing blocks, root vegetables and tree branches. Substances in gnawing blocks shall be listed in Table 5.2 of CAN/CGSB-32.311.	
6.4.5	The following feed, feed additives and supplements are prohibited:	
6.4.4	a) feed and feed additives, including amino acids and feed supplements, that contain substances not listed in Table 5.2 of CAN/CGSB-32.311;	

	b) feed medications or veterinary drugs, including hormones and prophylactic antibiotics, to promote growth; c) approved feed supplements or additives used in amounts greater than those required for adequate nutrition and health maintenance for the species at its specific stage of life; d) feeds that are chemically extracted or defatted with prohibited substances; e) feed that contains mammalian or avian slaughter by-products; f) feed that contains preservatives unless they are listed in Table 5.2 of CAN/CGSB-32.311; g) silage preservation products unless they are listed in Table 5.2 of CAN/CGSB-32.311; h) appetite enhancers or flavour enhancers unless they are listed in Table 5.2 of CAN/CGSB-32.311; i) feed formulas that contain manure or other animal waste; and j) feed that contains colouring agents unless they are listed in Table 5.2 of CAN/CGSB-32.311.	
6.4.6 ~~6.4.5~~	Livestock of all ages shall have access to clean, fresh water on demand. Livestock water sources shall be tested according to livestock drinking water quality guidelines and procedures outlined in <u>quality assurance programs mandated by industry associations, if available, otherwise water testing shall be conducted according to</u> the relevant Code of Practice (see 2.4)~~and quality assurance programs mandated by industry associations.~~	This change addresses what happens when the Code of Practice in question does not require water testing: if there is an industry quality assurance program, it takes precedence. The Code's guidelines on water are followed only in the absence of a quality assurance program that includes water guidelines. For some types of livestock, there might not be a need for testing if neither the industry quality assurance program nor the Code require it.
6.4.7 ~~6.4.6~~	Force feeding of ducks and geese is prohibited.	
6.4.8	By exception, non-organic feed is permitted under the following circumstances described in subclauses 6.4.8.1 and 6.4.8.2. <u>Exceptional use of non-organic feed or forage in the case of a</u>	This clause is modified so that there are no repercussions to the organic status of animals

6.4.7	<u>catastrophic event or forage shortage shall not affect the organic status of livestock for milk or meat.</u>	that are fed non-organic feed in a catastrophic event.
6.4.8.1 6.4.8 a)	If organic feed is unobtainable as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions), non-organic feed may be used for a maximum of ten consecutive days (or up to 30% non-organic feed for up to 30 consecutive days), to ensure a balanced livestock ration. Non-organic feed from land in transition to organic production and free of prohibited substances shall be used in preference to non-organic feed; <u>Note: The certification body should be notified as soon as possible after non-organic feed or forage is used.</u>	This clause now addresses non-organic feed in a catastrophic event separately from the feeding of forage in a forage shortage.
6.4.8.2 6.4.8 b)	<u>Non-organic forage, non-genetically engineered forage is permitted as follows, by exception, in the event of a regional forage shortage that is documented by the operator and, when possible, confirmed by a regional authority, when possible;</u> <u>a) ~~Breeding herds~~ Non-lactating cows, ewes and does, and replacement females</u> may be given non-organic forage provided that the animals are segregated, are visually distinguishable (for example, have ear tags and age verification records), and record keeping is maintained. ~~For breeding herds, forage from land in transition to organic production and free of prohibited substances shall be used in preference to non-organic forage. Use of genetically engineered forage crops is prohibited at all times. In all other respects, breeding herds whose offspring is intended for organic products shall be under organic management at all times. The breeding herd shall be re-transitioned when an organic forage supply becomes available. Subclause 6.2.3 applies to any offspring. The organic status of other livestock on the operation is not affected; and the non-organic forage is chosen~~ with the following in order of priority preference: 1) non-organic forage from land in transition; 2) non-organic forage grown without the use of prohibited substances; 3) non-organic forage grown without the use of prohibited substances for at least 60 days prior to harvest;	This clause now addresses the feeding of non-organic forage in a forage shortage separately from catastrophic events. The term "breeding herd" is replaced with clearer wording.

	4) non-organic forage provided it is not a genetically engineered crop. ~~c-b)~~ In the event of a forage shortage documented by the operator and confirmed by a regional authority, when possible, and if the quantities of feeds-forage allowed in ~~6.4.7 b)~~ 6.4.8.2 ~~a-b)~~ are insufficient, non-organic forage may comprise up to 25% of the forage ration for the entire ruminant herd in order of priority preference <u>as outlined in 6.4.8.2 a)</u>. ~~d-c)~~ The operator shall design a contingency plan to address future forage shortages which may include strategies such as growing more climate-adapted varieties,; improving grazing practices,; stockpiling a supply of forage,; identifying alternative supply chains,; varying herd size,; and improving the resilience <u>of on-farm forage production.</u> Note: ~~For the exception in 6.4.7 a), the certification body should be notified as soon as possible after non-organic feed or forage is used. For the exceptions in 6.4.7 b) and c), t~~ The certification body should be notified before non-organic feed or forage is used.	

6.5 Handling and transport

6.5	<u>Transport and Handling and transport</u>	
6.5.1	Livestock shall be managed responsibly, with care and consideration. Stress, injury and suffering shall be minimized in all livestock handling practices, including transport and slaughter.	The changes expand the handling section to provide guidance on safe and humane handling with the aim of minimizing animal stress. Electric prods are not completely prohibited because in rare circumstances they may be needed for human and animal safety. For example, if a large animal becomes stuck in a handling facility such as a chute, the animal's life may be at risk and electric prod use could save it. The handling section now requires documentation if an electric prod is used, and requires the operator to have a plan to avoid its use in the future. Note that poultry have different considerations from
6.5.2	<u>Operators shall demonstrate that all persons involved in handling livestock are trained in and use low-stress handling techniques to safeguard animal health and welfare.</u>	
6.5.3	<u>Handling areas shall be maintained to provide good traction. Distractions that cause animals to balk shall be minimized or removed.</u>	
6.5.4	<u>When moving animals, operators and staff shall use the following techniques in order of preference:</u> a) <u>working with an animal's flight zone;</u> b) <u>visual aids, such as alternative driving aids (e.g., flags or sticks with plastic ribbons); or</u>	

	<u>c) gentle use of paddles or boards.</u>	animals that are herded, and are included in all but clauses 6.5.3, 6.5.4 and 6.5.7. Larger birds, such as turkeys, that can be herded fit under all the clauses in the section.
6.5.5	<u>When small animals other than poultry are picked up, they shall be moved in an upright position while fully supporting its body and/or placing them in a container or small vehicle (e.g., cart, sled).</u>	The changes to the transport section make it easier to audit and unenforceable clauses have been removed. The references are updated from the <i>Transportation Code</i> , which is defunct, to the <i>Health of Animals Regulations</i> (HAR) and Codes of Practice.
6.5.6	<u>Animals must not be pulled or lifted by the fleece, hair, tail, skin, ears or limbs. Birds must not be picked up solely by the head, neck, one wing or feathers.</u>	
6.5.7	<u>The use of electric prods is prohibited except when human or animal health or safety is at risk. In this case, electric prods can only be used:</u> <u>a) as a last resort;</u> <u>b) when the animals have a clear path to move; and</u> <u>c) following the requirements in the applicable Code of Practice.</u>	As well as updating the references to regulations, the language has been updated to match the current regulations:
6.5.8	<u>Any use of electric prods shall be documented. The operator shall develop a plan to avoid using the electric prod in the future. For example, the operator could identify issues that are triggering dangerous behaviour in livestock and remove such triggers, and/or improve handling facilities.</u>	1. Using "compromised or unfit" animals instead of the more vague "sick", and definitions have been added for these terms to Clause 3.
6.5.9 6.5.2	~~Stocking density within transport vehicles shall conform to recommendations in the Code of Practice for the Care and Handling of Farm Animals: Transportation (see 2.4).~~ <u>For the duration of the transport period (starting when feed, water, or rest are restricted until slaughter or until restoration of free access to feed, water and rest), the health and welfare of animals shall be protected. Factors that shall be taken into consideration to prevent harm in transport include:</u> <u>a) Selection and condition of transport equipment (truck, trailer, container, crate etc) appropriate for the species and size of animals and environmental conditions,</u>	2. Being more specific about methods of euthanasia (i.e., the method must be an approved method in the Code of Practice).
		The grey areas around who is responsible for the animal's well-being during transport and slaughter is addressed with the modifications to the note (now 2nd note) at the end of the transport section. Transport and slaughter are regulated by CFIA and do not fall under the COS.

	<u>b) Transport densities, taking into account temperature and environmental conditions, animal health, body condition, horn and coat status, and journey length, and</u> <u>c) Compatibility of animals in the transport group, including species, size, age, horn status, sex and familiarity of individuals.</u>	
6.5.10 ~~6.5.2~~	The use of ~~electrical stimulation or~~ allopathic tranquilizers is prohibited.	
6.5.11 ~~6.5.3~~	~~While in transit and before slaughter~~ For the duration of the transport period as described in 6.5.9, animals shall have shelter against inclement weather, such as wind, rain and excessive heat or cold.	
6.5.4	If possible, animals shall be transported directly from the operation to their final destination.	
6.5.5	The duration of transportation shall be as short as possible. If animals are in transit for more than 5 hours, recommendations regarding maximum transit times, minimum feed and water requirements, and rest times, as provided in the <i>Code of Practice for the Care and Handling of Farm Animals: Transportation</i> , shall apply.	
6.5.12 ~~6.5.6~~	Fitness for transport shall be assessed before loading. a) <u>Compromised animals (see definition in Clause 3) have a reduced capacity to withstand transport and shall not be transported except directly to the nearest place, other than an assemble centre, where they can receive care or be humanely killed, and with special provisions required by Part XII (Transport of Animals) of the Health of Animals Regulations.</u> b) ~~Sick or~~ Unfit animals <u>(see definition in Clause 3) shall cannot be transported without suffering and shall not be transported other than for veterinary care, and with special provisions required by Part XII (Transport of Animals) of the Health of Animals Regulations.</u>	
6.5.13 ~~6.5.7~~	If livestock is unfit for transport and euthanasia is necessary, it shall be performed by competent personnel with appropriate equipment. The method used shall be ~~quick and cause the least possible pain and distress~~ <u>an approved method from the relevant Code of Practice (see 2.4).</u>	
		Operator and handler training requirements are addressed in 6.5.2. For transport, a note with recommendations for operator/transporter training and competency has been added. This is outside the scope of the COS so it cannot be made an auditable requirement. Although it would align with organic principles to have higher welfare standards for the transportation of organic livestock, there are some significant reasons why those changes were not made: 1. There is a new federal regulation (HAR) that is just coming into effect, and standards for livestock transportation across Canada have been very recently improved. 2. Auditing the transportation of organic livestock is a grey area, as it occurs beyond the farm gate, and is regulated federally. 3. Requirements for slaughter of organic livestock already make it very challenging to find an abattoir that will take them, and that will allow inspectors on the premises. Abattoirs have more than enough business without the extra work that organic livestock already require, so adding additional requirements was judged to be insurmountable.

Note 1	<u>It is recommended that all persons involved in transport participate in training to ensure competency in essential skills such as animal handling and knowledge of animal transport regulations. Available courses include Animal Health Canada's Canadian Livestock Transport Course (see 2.5).</u>	
Note 2	<u>Operators must comply with all application provincial and federal regulations related to transport and slaughter. For transportation and federal slaughter establishments in Canada, see also the <i>Health of Animals Regulations</i> under the <i>Health of Animals Act</i> (Canadian Food Inspection Agency) and the <i>Safe Food for Canadians Regulations</i> under the <i>Safe Food for Canadians Act</i> (Canadian Food Inspection Agency). For additional guidance, refer to the transportation requirements sections in the relevant Code of Practice (see Clause 2.4) for each animal type. For provincially regulated slaughter, refer to provincial legislation.</u>	

6.6 Livestock health care

6.6.1. The operator shall establish and maintain preventative livestock health care practices, including:

- a) the choice of appropriate breeds or strains of livestock, as specified in 6.2.1;
- b) a feed ration sufficient to meet the nutritional requirements of the livestock, including vitamins, minerals, protein, fatty acids, energy sources, and fibre;
- c) housing, pasture conditions, space allowance and sanitation practices that minimize crowding and the occurrence and spread of disease and parasites;
- d) conditions appropriate to the species that allow for exercise, freedom of movement, and minimal stress;
- e) prompt treatment for animals with detectable disease, lesions, lameness, injury or other physical ailments;
- f) vaccines, in accordance with this standard and Table 5.3 of CAN/CGSB-32.311, if it has been documented that the targeted diseases are communicable to livestock on the production unit or operation and cannot be combated by other means;
- g) monitoring livestock Body Condition Scores (as defined in the relevant Code of Practice, see 2.4) and documenting any corrective actions taken;

This change would require the operator to take action if animals are too thin. Organic animals should have superior welfare, and good body condition is an indicator of good health and welfare. Thin animals indicate something is wrong in the system and that must be rectified.

	<u>h) holding relevant professional qualifications or maintaining a relationship with a qualified expert or registered professional, such as a veterinarian, experienced peer, or expert at a provincial animal health centre, who can assist in the event of health issues.</u>	This change would require livestock producers to have a working relationship with an animal health expert. The clause is clear that there are many options for this type of advice. It is not restricted to a formal client relationship because of cost (there is a fee associated with being a documented customer) and limited availability of vets in many regions. Prevention is the key for managing animal health organically and having an existing relationship is very important in both preventative and emergency situations.
6.6.2	The operator shall not administer: a) veterinary drugs, in the absence of illness, other than vaccines. Anaesthetics and analgesics are permitted, subject to the requirements for physical alterations in 6.6.4; b) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion; c) synthetic parasiticides, except by way of an exception provided in 6.6.11; d) antibiotics to meat animals or to birds for meat or egg production; e) chemical allopathic veterinary drugs for preventative treatments, for example, pharmaceuticals, antibiotics, hormones and steroids.	
6.6.3	Hormonal treatment shall only be used for therapeutic reasons and under veterinary supervision. The meat from treated animals shall not be organic unless the treatment is listed in Table 5.3 of CAN/CGSB-32.311.	
Clause 6.6.4 was rewritten and reorganized. Due to the many changes, we are presenting text in two forms. Immediately below this message, you will find the tracked changes to the 2020 version with a general rationale and explanation of the changes. Below that in green, you can find the text presented in a different way. Next to each clause of the 2020 standards, we inserted the relevant information from the 2025 draft (with tracked changes) and a specific rationale for each change.		

6.6.4	<u>For all livestock, physical alterations are prohibited unless they are essential for animal health, welfare or hygiene, for identification or for safety reasons, and are listed below in 6.6.4.7.</u> <u>Operators shall take steps to avoid physical alterations and should work towards phasing out routine alterations, other than for identification as required by law.</u> a) ~~The following physical alterations are permitted; restrictions in 6.6.4 c) apply:~~ b) ~~If they are the only remaining option, the following physical alterations are permitted; restrictions in 6.6.4 c) apply:~~ ~~1. castration of piglets, lambs, kids and calves~~ ~~2. tail docking of lambs~~ ~~3. branding and ear tagging; and~~ ~~4. debudding/disbudding~~ b) ~~If they are the only remaining option, the following physical alterations are permitted; restrictions in 6.6.4 c) apply:~~ ~~1. minimal beak trimming or treatment to remove sharp hooks;~~ ~~2. trimming of needle teeth in piglets~~ ~~3. tail docking of pigs and cattle; and~~ ~~4. dehorning~~ c) ~~Restrictions on physical alterations:~~ <u>All physical alterations are subject to the following:</u> ~~1) Physical alterations shall be carried out in a manner that minimizes pain, stress and suffering;~~ ~~2) Regardless of age or method, consideration shall be given to the use of anaesthetics, sedatives and non-steroid anti-inflammatory analgesics, such as lidocaine, xylazine and ketoprofen;~~	For more information see: Physical alterations in livestock 1 / 2 https://mailchi.mp/organicfederation/physicalalterations-discussions Physical alterations in livestock 2 / 2 https://mailchi.mp/organicfederation/physical-alterations Changes include: ● Pain control is now required. ● Dehorning is now prohibited unless done by a vet. Caustic paste disbudding is now prohibited. Disbudding is permitted if done by the method and the age limit provided for cattle and goats. ● Age limits and specific methods are now required for castration for all types of livestock and for tail docking of lambs. ● Branding is now prohibited unless required by law and in that situation, only freeze branding can be used. ● Beak treatment by infrared at 1 day old is permitted, otherwise, beak trimming is only permitted in exceptional circumstances. ● In case of injury, the operator can perform tail docking on a cow, but preventative tail docking of cattle is still prohibited. Tail docking of pigs is only permitted in case of cannibalism outbreak when other methods to control the outbreak have failed.

6.6.4.1 Except for poultry and tagging, regardless of age or method, anesthetics and non-steroid anti-inflammatory analgesics shall be used in consultation with a veterinarian to provide sufficient pain control; sedatives should be considered to further minimize stress.

6.6.4.2 Physical alterations should be done at as young an age as possible. Other than for poultry, they shall be done after the first 24 hours of life.

6.6.4.3 Physical alterations shall be performed by, or under the direct supervision of, competent personnel using proper, clean, sanitized, and well-maintained tools, and accepted techniques.

6.6.4.4 Tagging for identification is permitted when required by law. One additional ear tag, or tail web tag (for goats) is permitted.

6.6.4.5 Physical alterations permitted by livestock type are listed in subclause 6.6.4.7. Physical alterations not listed are permitted by exception if they are required to protect the health or welfare of the animal and if they are done by a licensed veterinarian. They shall be on an individual basis rather than for a group of animals. Exceptional events that require physical alterations shall be documented and corrective action shall be taken to avoid recurrence.

6.6.4.6 The following physical alterations are prohibited even under veterinary supervision: caustic paste disbudding, ~~e) 6)~~ castration of cull boars, ~~e) 7)~~ spaying of female beef cattle, and preventative tail docking of cattle.

a) The following physical alterations are permitted; restrictions in 6.6.4 c) apply:

- 1) ~~castration of piglets, lambs, kids and calves;~~
- 2) ~~tail docking of lambs;~~
- 3) ~~branding and ear tagging; and~~
- 4) ~~debudding/disbudding.~~

b) If they are the only remaining option, the following physical alterations are permitted; restrictions in 6.6.4 c) apply:

- 1) ~~minimal beak trimming or treatment to remove sharp hooks;~~
- 2) ~~trimming of needle teeth in piglets;~~
- 3) ~~tail docking of pigs and cattle; and~~

For more details, see the table below.

~~4) dehorning;~~

~~c) 3) For castration, tail docking, dehorning, debudding/disbudding or branding, operators shall consult the applicable Code of Practice (see 2.4) and follow the requirements for age restrictions and methods and the use of pain control medications;~~

~~4) Beak trimming of birds, tail docking of pigs and trimming of needle teeth in piglets are permitted when they are necessary to control problem behaviour that has a negative impact on the welfare of other livestock. Operators shall document the other measures taken to control or eliminate problem behaviour;~~

~~6) Castration of piglets shall take place in the first two weeks of life.~~

6.6.4.7 Specifications by species:

a) Poultry:

1) Infrared beak treatment is permitted for one day old laying hens.

2) Infrared beak treatment and spur removal is permitted for one day old turkeys.

3) Beak trimming is allowed by exception for laying hens and turkeys until ten days old in situations when infrared beak treatment failed or in flocks where infrared beak treatment is not available. In case of cannibalism outbreak, beak trimming is allowed after ten days of age under veterinary supervision. Beak trimming shall be done in a way that no more than one-third of the upper beak is removed, as measured from the tip to the entrance of the nostrils. If beak trimming is used, it shall be documented.

See definitions of beak treatment and beak trimming in Clause 3.

Note: This subclause (6.6.4.7 a)) will be reviewed in 2031.

b) Pigs:

1) Castration is permitted for piglets under ten days of age.

2) Tail docking is permitted only if a documented outbreak of cannibalism occurs and the issue cannot be addressed with other methods. The docked tail shall be at least 2.5 cm in length and the operator shall follow the method outlined in written instructions by a veterinarian.

c) Cattle:

- 1) Disbudding by hot iron is permitted under two months of age.
- 2) Clamp castration and rubber ring castration are permitted under two months of age.
- 3) ~~e) 5)~~ Tail docking of cattle is permitted only when necessary for veterinary treatment of injured animals.
- 4) Branding is prohibited unless required by law. If required by law, freeze branding with pain control shall be used, and the operator shall provide documentation showing that it is required by law.

d) Sheep:

- 1) Clamp castration is permitted for lambs under two months of age and rubber ring castration for lambs under seven days of age.
- 2) Tail docking is permitted for lambs under seven days of age, with the following methods in order of preference (the least painful technique is listed first):
 - i) hot iron,
 - ii) rubber ring in conjunction with a clamp; or
 - ii) rubber ring.
- 3) Docked tails must cover the vulva in ewes and the equivalent length in rams. Tails must be docked no shorter than the distal end of the caudal fold.

e) Goats:

- 1) Disbudding (defined in Clause 3) by hot iron is permitted for kids under 21 days of age.
- 2) Clamp castration is permitted for kids under two months of age and rubber ring castration is permitted for kids under 14 days of age.

Note: The National Farm Animal Care Council's *Code of Practice for the Care and Handling of Sheep* and *Code of Practice for the Care and Handling of Beef* (see Clause 2.4) are under revision at the time of publishing the 2026 Canadian Organic Standard. Operators are expected to keep up to date with current Codes of Practice, as this standard is expected to meet or exceed the current published Codes of Practice at their time of implementation.

Physical alterations in livestock: a focus on 6.6.4

		Rationale
6.6.4	6.6.4. <u>For all livestock, physical alterations are prohibited unless they are essential for animal health, welfare or hygiene, for identification or for safety reasons, and are listed below in 6.6.4.7. Operators shall take steps to avoid physical alterations and should work towards phasing out routine alterations, other than for identification as required by law. ...</u> <u>6.6.4.4 Tagging for identification as required by law is permitted. One additional ear tag, or tail web tag (for goats) is permitted.</u>	The physical alterations section needed to be reviewed to ensure it was up to date with the latest research and Codes of Practice and consistent with the animal welfare goals of organic production. The section (6.6.4) was difficult to understand so it has been reorganized to be more logical and more clear. Some of the more general statements in the section were removed (e.g., the former 6.6.4 c) 1)) and replaced with specific requirements. These general statements are still covered in 6.1.6 and 6.5. The structure of the section is as follows: 6.6.4 intro and 6.6.4.1-6.6.4.4 apply to all physical alterations. 6.6.4.5 is for exceptional situations that do not fall under 6.6.4.6 or 6.6.4.7. 6.6.4.6 lists the alterations that are prohibited under any circumstances. 6.6.4.7 lists the alterations that can be routinely done if justified, giving age limits and methods required. By default, alterations are prohibited and should be avoided whenever possible. It also acknowledges that in certain situations, avoiding the physical alteration would result in inferior welfare outcomes for the animals. For all alterations, pain control must now be used, the practitioner must be trained, and tools must be well-maintained and clean.

6.6.4 a)	6.6.4 ... <u>All physical alterations are subject to the following: restrictions in 6.6.4 c) apply: (the restrictions that apply to all physical alterations are now listed in 6.6.4.1, 6.6.4.2, and 6.6.4.3, and those that apply to each type of livestock are listed in 6.6.4.7)</u> <u>6.6.4.7 Specifications by species: 6.6.4 a) The following physical alterations are permitted;</u>	The restrictions that apply to all physical alterations are now listed first, in 6.6.4.1, 6.6.4.2, and 6.6.4.3. 6.6.4.7 lists the physical alterations that are permitted if justified, by type of livestock, and lists any restrictions like age or method. These alterations can be done by the operator (a vet is not required to perform them, as in 6.6.4.5).
6.6.4 a) 1)	<u>6.6.4.7 b) Pigs: 1) Castration is permitted for piglets under ten days of age.</u> <u>6.6.4.7 c) Cattle: 2) Clamp castration and rubber ring castration are permitted under two months of age.</u> <u>6.6.4.7 d) Sheep: 1) Castration is permitted by clamp for lambs under two months of age and by rubber ring for lambs under seven days of age.</u> <u>6.6.4.7 e) Goats: 2) Clamp castration is permitted for kids under two months of age and rubber ring castration is permitted for kids under 14 days of age.</u>	Castration is generally permitted with specific methods that are least painful for the animal as per the research. An age limit for castration is provided for each type of livestock. Castration above these age limits would only be permitted by a veterinarian under 6.6.4.5. Castration allows male and female meat animals to be kept together in the same herd or flock without early pregnancies, aggressive behaviour and harassment of the females. For some livestock types, operator safety is improved by having as few as possible intact males. For pigs, castration is needed to avoid boar taint in the meat.
6.6.4 a) 2)	<u>6.6.4.7 d) Sheep: 2) Tail docking is permitted for lambs under seven days of age, with the following methods in order of preference (the least painful technique is listed first):</u> <u>i) hot iron,</u> <u>ii) rubber band with a clamp, or</u> <u>iii) rubber band.</u> <u>3) Docked tails must cover the vulva in ewes and the equivalent length in rams. Tails must be docked no shorter than the distal end of the caudal fold.</u>	Tail docking of sheep is permitted in order to avoid fly strike, a condition where maggots infest the skin. Age limits and methods are clearly designated.

6.6.4 a) 3)	<u>6.6.4.4 Tagging for identification as required by law is permitted. One additional ear tag, or tail web tag (for goats) is permitted.</u> <u>6.6.4.7 c) Cattle: 4) Branding is prohibited unless required by law. If required by law, freeze branding with pain control shall be used, and the operator shall provide documentation showing that it is required by law.</u>	New prohibitions on branding are brought in. Branding is a painful practice and alternatives exist (tagging). There are certain situations, like community pastures or rangeland, where animals must be branded. In those situations the operator must provide documentation showing that it is required by law and freeze branding, the less painful option, must be used.
6.6.4 a) 4)	<u>6.6.4.5 The following physical alterations are prohibited even under veterinary supervision: caustic paste disbudding, e) 6) castration of cull boars, e) 7) spaying of female beef cattle, and preventative tail docking of cattle.</u> <u>6.6.4.7 c) Cattle: 1) Disbudding by hot iron is permitted under two months of age.</u> <u>6.6.4.7 e) Goats: 1) Disbudding by hot iron is permitted for kids under 21 days of age.</u>	The method for disbudding is now being specified, with hot iron being the least painful and therefore the only method allowed. For dairy animals (cattle and goats), polled breeds are generally not available, so disbudding is necessary to keep animals and their handlers safe. Dehorning is not permitted except by a veterinarian as covered under 6.6.4.5. Note that a definition for disbudding has been added to Clause 3.
6.6.4 b)	<u>6.6.4 All physical alterations are subject to the following: restrictions in 6.6.4 c) apply: (the restrictions that apply to all physical alterations are now listed in 6.6.4.1, 6.6.4.2, and 6.6.4.3, and those that apply to each type of livestock are listed in 6.6.4.7)</u> <u>6.6.4.7 Specifications by species: 6.6.4 b) If they are the only remaining option, the following physical alterations are permitted;</u>	6.6.4.7 lists the physical alterations that are permitted if justified, by type of livestock, and lists any restrictions like age or method. These alterations can be done by the operator (a vet is not required to perform them, as in 6.6.4.5). The physical alterations previously separated into 6.6.4 a) and 6.6.4 b) are combined into one list. As physical alterations are prohibited by default, we did not see the benefit to keeping some alterations on a “permitted” list and others on a “permitted if they are the only remaining option” list. All the alterations

		previously listed in 6.6.4 b) are either permitted with clear and strict restrictions (beak trimming and tail docking of pigs and cattle), or only permitted by a vet in exceptional circumstances (trimming of piglets' needle teeth and dehorning). The specific methods that are listed in 6.6.4.7 stem from recently updated Codes of Practice and/or from peer reviewed research on physical alterations and pain.
6.6.4 b) 1)	<u>6.6.4.7 a) Poultry:</u> <u>1) Infrared beak treatment is permitted for one day old laying hens.</u> <u>2) Infrared beak treatment and spur removal is permitted for one day old turkeys.</u> <u>3) Beak trimming is allowed by exception for laying hens and turkeys until ten days old in situations when infrared beak treatment failed or in flocks where infrared beak treatment is not available.</u> <u>4) In case of cannibalism outbreak, beak trimming is allowed after ten days of age under veterinary supervision. Beak trimming shall be done in a way that no more than one-third of the upper beak is removed, as measured from the tip to the entrance of the nostrils. If beak trimming is used, it shall be documented.</u> <u>Note: This clause (6.6.4.7 a)) will be reviewed in 2030.</u>	For poultry, outbreaks of feather pecking and cannibalism can occur in organic laying hens and turkeys. These outbreaks lead to very poor welfare outcomes and high mortality. These behaviours are the result of many risk factors including beak form, lighting, genetics, nutrition, foraging opportunities, flock size and rearing. Beak treatment is a non-invasive, automated procedure done at the hatchery that removes the sharp tip of the bird's beak. It is different from beak trimming, which is more invasive. Beak treatment is routinely done on day-old chicks and is currently the best approach to prevent cannibalism. Beak trimming is allowed only as a last resort. Due to rapid development in research and practices regarding feather pecking and cannibalism, this standard will be reviewed in 2030. Analgesics and anesthetics are not required for poultry as there are no approved drugs in these classes for food-producing birds at this time.

		Note that definitions for beak trimming and beak treatment have been added to Clause 3.
6.6.4 b) 2)	<i>[no exception made for this practice, therefore it is not permitted except under 6.6.4.5]</i> <u>6.6.4.5 Physical alterations permitted by livestock type are listed in 6.6.4.7. Physical alterations not listed are permitted by exception if they are required to protect the health or welfare of the animal, if they are done by a licensed veterinarian, and should be on an individual basis rather than for a group of animals. Exceptional events that require physical alterations shall be documented and corrective action shall be taken to avoid recurrence.</u>	Physical alterations that are not listed under 6.6.4.7 (permitted by type of livestock) or under 6.6.4.6 (prohibited without exception), are permitted only under the conditions described in 6.6.4.5.
6.6.4 b) 3)	<u>6.6.4.6 The following physical alterations are prohibited even under veterinary supervision: ... preventative tail docking of cattle.</u> <u>6.6.4.7 b) Pigs: 2) Tail docking is permitted only if a documented outbreak of cannibalism occurs and the issue cannot be addressed with other methods. Tail docking shall be to a minimum length of 2.5 cm and the operator shall obtain written instructions from a veterinarian indicating the method to be used.</u> <u>6.6.4.7 c) Cattle: 3) Tail docking of cattle is permitted only when necessary for veterinary treatment of injured animals;.</u>	Tail docking of pigs and cattle are only permitted in exceptional circumstances as described in 6.6.4.7, but can be performed by the operator. Please note that tail docking of dairy cattle in the case of a severe injury to the tail now falls under this category (6.6.4.7 c) 3)). It is a time-sensitive procedure that needs quick action by the operator to address bleeding, and pain control is required.
6.6.4 b) 4)	<i>[no exception made for this practice, therefore it is not permitted except under 6.6.4.5]</i> <u>6.6.4.5 Physical alterations permitted by livestock type are listed in 6.6.4.7. Physical alterations not listed are permitted by exception if they are required to protect the health or welfare of the animal, if they are done by a licensed veterinarian, and should be on an individual basis rather than for a group of animals. Exceptional events that require physical alterations shall be documented and corrective action shall be taken to avoid recurrence.</u>	6.6.4.5 is for exceptions that are not listed. These are one-off situations where a vet is needed. Examples are dehorning or castration of an older animal, for example if they had a health issue that made it impossible to respect the age limit for these practices.
6.6.4 c)	~~e) Restrictions on physical alterations:~~ <u>All physical alterations are subject to the following:</u>	
6.6.4 c) 1)	~~1) Physical alterations shall be carried out in a manner that minimizes pain, stress and suffering;~~ <u>6.6.4.2 Physical alterations should be done at as young an age as possible. Other than for poultry, they shall be done after the first 24 hours of life.</u>	Instead of a vague statement of intention, we have added specific ways to minimize pain (6.6.4.1), stress and suffering (6.6.4.2 and 6.6.4.3).

	<u>6.6.4.3. Physical alterations must be performed by, or under the direct supervision of, competent personnel using proper, clean, sanitized, and well-maintained tools, and accepted techniques.</u> <i>For additional information:</i> 6.1.6 As a general principle, the operator shall demonstrate their commitment to animal welfare. When an animal welfare issue is identified, the operator shall develop a corrective action plan. The operator shall document demonstrated improvements in animal welfare practices and shall make available upon request any documents or assessments mandated by industry associations. <i>From 6.5, Handling and Transport:</i> 6.5.1 Livestock shall be managed responsibly, with care and consideration. Stress, injury and suffering shall be minimized in all livestock handling practices, including transport and slaughter. 6.5.2 Operators shall demonstrate that all persons involved in handling livestock are trained in and use low-stress, calm handling methods to safeguard animal health and welfare.	6.1.6 requires a commitment to animal welfare and interacts with the requirements for physical alterations. This also interacts with the handling section, 6.5, which has also been updated. In 6.5 it describes how animals must always be handled calmly.
6.6.4 c) 2)	~~2) Regardless of age or method, consideration shall be given to the use of anaesthetics, sedatives and non-steroid anti-inflammatory analgesics, such as lidocaine, xylazine and ketoprofen;~~ <u>6.6.4.1 Except for poultry, regardless of age or method, anesthetics and non-steroid anti-inflammatory analgesics shall be used in consultation with a veterinarian to provide sufficient pain control; sedatives should be considered to further minimize stress.</u> <u>6.6.4.5 .Physical alterations permitted by livestock type are listed in 6.6.4.7. Physical alterations not listed are permitted by exception if they are required to protect the health or welfare of the animal, if they are done by a licensed veterinarian, and should be on an individual basis rather than for a group of animals. Exceptional events that require physical alterations shall be documented and corrective action shall be taken to avoid recurrence.</u>	The research and the public perception of pain control has moved forward since the 2020 COS, so a new requirement for pain control has been brought in.
6.6.4 c) 3)	<i>[See specific details in 6.6.4.7]</i> <u>Note: The Code of Practice for the Care and Handling of Sheep and the Code of Practice for the Care and Handling of Beef (see 2.4) are under revision at the time of publishing the 2025 Canadian Organic Standard. Operators are expected to keep up to date with current Codes of Practice, as this standard is expected to meet or exceed the current published Codes of Practice at their time of implementation.</u>	The specific methods that are listed in 6.6.4.7 come from recently updated Codes of Practice and/or from peer reviewed research on physical alterations and pain.

6.6.4 c) 4)	<u>6.6.4.7 a) Poultry:</u> <u>1) Infrared beak treatment is permitted for one day old laying hens.</u> <u>2) Infrared beak treatment and spur removal is permitted for one day old turkeys.</u> <u>3) Beak trimming is allowed by exception for laying hens and turkeys until ten days old in situations when infrared beak treatment failed or in flocks where infrared beak treatment is not available.</u> <u>4) In case of cannibalism outbreak, beak trimming is allowed after ten days of age under veterinary supervision. Beak trimming shall be done in a way that no more than one-third of the upper beak is removed, as measured from the tip to the entrance of the nostrils. If beak trimming is used, it shall be documented.</u> <u>Note: This clause (6.6.4.7 a)) will be reviewed in 2030.</u> <u>6.6.4.7 b) Pigs: 2) Tail docking is permitted only if a documented outbreak of cannibalism occurs and the issue cannot be addressed with other methods. Tail docking shall be to a minimum length of 2.5 cm and the operator shall obtain written instructions from a veterinarian indicating the method to be used.</u>	Beak trimming of birds and tail docking of pigs are only permitted if outbreaks of cannibalism occur and cannot be addressed with other methods. Documentation of such an outbreak, the methods used to treat it and how the operator intends to prevent it in the future are required. Beak trimming would also be allowed if a flock does not have access to infrared beak treatment or the treatment failed. These situations will be part of the review of this clause in 2030. Trimming of needle teeth is only permitted by a vet under 6.6.4.5, as it is not mentioned in 6.6.4.7. Note that definitions for beak trimming and beak treatment have been added to Clause 3.
6.6.4 c) 5)	<u>6.6.4.7 c) Cattle:</u> <u>3) ~~c) 5)~~ Tail docking of cattle is permitted only when necessary for ~~veterinary~~ treatment of injured animals;</u> <u>6.6.4.6 The following physical alterations are prohibited even under veterinary supervision: caustic paste disbudding, ~~c) 6)~~ castration of cull boars, ~~c) 7)~~ spaying of female beef cattle, and preventative tail docking of cattle.</u>	The physical alterations that were completed prohibited in the 2020 COS are still prohibited and listed in 6.6.4.6. We added caustic paste disbudding to this list, as research shows it is very painful. There are reasonable alternative methods for disbudding and they are listed in 6.6.4.7 by species. Tail docking of cattle is only permitted in case of an injury.
6.6.4 c) 6)	<u>6.6.4.7 b) Pigs:</u> <u>1) Castration is permitted for piglets under ten days of age. ~~6.6.4 c) 6) Castration of piglets shall take place in the first two weeks of life.~~</u>	The age limit for castration of piglets has been lowered from 14 days to 10 days. Castration is painful for piglets at any age and this brings the Standards in line with practices required in the Code of Practice for the Care and Handling of Pigs regarding use of pain control, and
6.6.4 c) 7)		

		brings the Organic Standards to a level above the Code of Practice by requiring castration to be complete by ten days. This change was acceptable to organic pork producers who were consulted. The restrictions on the physical alterations listed for each type of livestock are now listed in 6.6.4.7.

		Rationale
6.6.5	Biological, cultural, and physical treatments and practices outlined in Table 5.3 of CAN/CGSB-32.311 are permitted, if preventative practices and vaccines are inadequate to prevent sickness or injury and treatment is required.	
6.6.6	Medical treatment shall not be withheld from sick or injured livestock to preserve their organic status. If methods acceptable to organic production fail, all appropriate medications shall be used to restore livestock to health.	
6.6.7	If the presence of injured or diseased livestock presents a health risk to individual animals or birds, ~~they~~ <u>the injured or diseased animals</u> shall be separated from the herd or flock, and/or euthanized, if necessary (see 6.6.13). <u>Isolated animals shall be kept in spaces that adhere to the requirements of subclause 6.7.1. Where possible, the isolated animal shall have physical contact with other conspecifics. If physical contact with conspecifics endangers animal health or welfare, the operator may provide visual and auditory contact with conspecifics instead. In case of an emergency, the animal may be isolated temporarily until its condition improves sufficiently to rejoin other conspecifics.</u>	<u>This change adds clarity regarding the isolation of sick or injured animals. Contact with other animals is required, whenever possible, when an animal is isolated. Livestock are herd/flock animals and it is stressful for an animal to be separated from the group.</u>
6.6.8	Shipping diseased livestock to slaughter is prohibited if the end product is intended for human consumption.	
6.6.9		

6.6.10	Products from sick animals or those undergoing treatment with restricted substances shall not be organic or fed to organic livestock. The use of veterinary medicinal substances shall comply with the following (see definitions of veterinary drug, veterinary biologic, parasiticide and antibiotic in Clause 3): a) If no alternative treatments or management practices exist, veterinary biologics, including vaccines, parasiticides or the therapeutic use of medications may be administered, provided that such medications are permitted by this standard and Table 5.3 of CAN/CGSB-32.311 or are required by law. b) Phytotherapeutic medicines, that is, botanical compounds such as atropine, butorphanol and other medicines from herbaceous plants, excluding antibiotics; and homeopathic or similar products, shall be used in preference to chemical, allopathic veterinary drugs or antibiotics, provided that they are effective for the species and the condition for which the treatment is intended.	
f)		
	c) If the products permitted by 6.6.10 a) and b) are ineffective in combating illness or injury, prescribed veterinary drugs not listed in this standard or in Table 5.3 of CAN/CGSB-32.311 may be administered to breeding stock, layers or dairy animals with written authorization by a veterinarian. Some restrictions apply (see 6.6.2, 6.6.11 d) and 6.6.12). With the exception of parasiticides administered according to 6.6.11, meat from animals treated with veterinary pharmaceutical drugs not listed in Table 5.3 of CAN/CGSB-32.311 shall not be organic, <u>and meat from offspring of animals treated in the last third of gestation shall not be organic.</u>	
	d) If a veterinary drug is administered and it does not have specific withdrawal requirements, a withholding period of twice the label requirement or 14 days, whichever is longer, shall be observed before livestock products from treated animals may be considered organic.	
	e) Animals that require the use of antibiotics or other substances restricted in 1.5 e) for the same disease for three consecutive years shall be removed from the herd within nine months following the last course of treatment.	
	f) In emergencies, antibiotic treatment of dairy animals is permitted under the following conditions:	
	1) The operator shall have written instructions from a veterinarian indicating the product and the treatment method to be used;	

Addresses the Standards Interpretation Committee [Question 565](#), which referred to 6.2.3.3 (b).

	2) Treatment shall result in a milk withdrawal period of at least 30 days after the last day of a course of treatment, or a withholding period that is twice the label requirement, whichever is longer; 3) Antibiotic use shall be documented in herd health records; 4) If dairy animals receive more than two treatments of veterinary drugs annually, whether of antibiotics, parasiticides or one of each, they shall lose their organic status and go through a 12-month transition period.	
6.6.11	Organic livestock operations shall have a comprehensive plan to minimize parasite problems. The plan shall include preventative measures, such as genetic selection, pasture management, fecal monitoring and assessments of tissue at slaughter, and emergency measures in the event of a parasite outbreak. Hygienic cleaning and disinfection methods for barns, such as power washing, steam washing, floor burning and lime washing, shall be included in the plan as well as down time (i.e., when the barn is vacant). By way of an exception, if preventative measures fail due to, for example, climatic conditions or other uncontrollable factors, the operator may use parasiticides that are not listed in Table 5.3 of CAN/CGSB-32.311, provided that:	
	a) observation of the animal, fecal test results, or assessment of tissue as appropriate for the species indicate that livestock is infected with parasites;	
	b) the operator provides a written action plan, with a timeline, describing how they will amend their parasite control plan to avoid similar emergencies;	
	c) the operator has written instructions from a veterinarian indicating the product and method to be used, including provisions to avoid developing parasite resistance, such as rotation of parasiticides;	
	d) withdrawal times are twice the label requirement or 14 days, whichever is longer;	
	If these conditions are met, the following restrictions apply:	
	e) the exception cannot be granted for a group of animals or an entire production unit for more than two years in a row for the same problem;	
	f) a dam from any species may receive only one treatment of parasiticides during gestation;	

	g) meat animals from any species less than 12 months old shall receive at most one parasiticide treatment. Meat animals 12 months of age or older that receive more than two parasiticide treatments in their lifespan shall lose their organic status; h) dairy animals that receive more than two treatments in a 12-month period, whether of parasiticides, antibiotics or one of each, shall lose their organic status and go through a 12-month transition period; i) dairy cull animals that receive more than two treatments with parasiticides over their lifespan shall never be considered organic for meat; j) dairy cull animals that receive antibiotics shall never be considered organic for meat; k) swine breeding stock animals that present with a high parasite load may receive up to three parasiticide treatments in a year as part of a parasite reduction plan. This exception cannot be applied systematically [refer to 6.6.11 b) and e)]; l) laying hens that receive more than two parasiticide treatments in a 12-month period shall lose their organic status. Treatment of the flock, rather than individual hens, is permitted.	
6.6.12	Poultry or breeding livestock treated with a parasiticide or veterinary drug not listed in Table 5.3 of CAN/CGSB-32.311 shall be considered non-organic meat animals. Exceptions pertaining to parasiticide use may apply (see 6.6.11).	
6.6.13	Injured, diseased or sick animals shall be given individual treatment designed to minimize pain and suffering, which may include euthanasia.	
6.6.14	Forced moulting of poultry is prohibited.	

6.7 Livestock living conditions

6.7.1	The operator shall establish and maintain animal living conditions that accommodate the health and natural behaviour of animals, including:	

a) access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and daylight, suitable for the species and stage of production taking into consideration the climate and the environment; b) access to fresh water (see 6.4.5) and high-quality feed that meets the needs of the animal; c) sufficient space and freedom to stretch out while lying down, stand up, stretch limbs and turn freely, and to express normal patterns of behaviour; d) space allowances in proportion to local conditions, feed production capacity of the operation, livestock health, nutrient balance of livestock and soils, and environmental impact; e) production techniques that foster the long-term health of livestock, especially when high levels of production or growth rates are required of animals; f) good air quality. <u>Operators shall prevent H-humidity, airborne dust particles and ammonia from reaching levels that can shall not impair the well-being of animals. Ammonia levels shall not exceed 25 ppm. If ammonia levels exceed 2520 ppm, remedial action shall be taken. Ammonia levels shall not exceed 25 ppm. In addition, air quality shall be managed according to the Code of Practice for the type of livestock in question (see 2.4);</u> g) appropriate resting and bedded areas that meet the needs of the animal. Indoor areas shall be large enough, solidly built, comfortable, clean and dry. Resting areas shall be covered with a thick layer of dry bedding that absorbs excrement. If organic bedding is commercially unavailable, bedding material from non-genetically engineered sources that is free of prohibited substances for at least 60 days prior to harvest may be used. Non-agricultural absorbent bedding sources (for example, minerals, cellulose, sawdust, and wood shavings) can be used for livestock bedding as long as they meet the requirements in 1.4 and 1.5, and do not contain, or have not been treated with, prohibited substances; h) housing with non-slip floors. Solid flooring is preferable. Where non-slip slatted floors exist, the floor shall not be entirely of slatted or grid construction. The floor design shall ensure that the feet of the smallest animal cannot get caught in a void. Areas between voids shall be at least as wide as the feet of the animals; i) animals that give birth indoors shall be provided with sufficient space and a clean, dry, well-bedded space with stable footing. Birthing facilities shall allow for separation from other animals and all the mother's needs shall be accommodated, including milking and nursing, until the	This change adds clarity around monitoring air quality. Of livestock housing types, poultry barns are the most prone to ammonia issues. This is reflected in the Codes of Practice, which give required maximum ammonia levels for only certain types of livestock. The COS sets an ammonia level limit for all types of livestock and housing, reflecting the fact that all housing structures may encounter air quality issues, which reflect manure and bedding management, and, in the case of mobile coops, the frequency of movement of the structure. The method used to test ammonia levels is intentionally left undefined so that producers can use the method that best suits their budget and operation.

	mother is recovered from the birthing process. Animals shall not be tied or tethered when giving birth; j) construction and management of outdoor exercise areas and pasture to encourage appropriate use by livestock to prevent animal discomfort, and to avoid soil degradation, long-term damage to vegetation and the contamination of water.	
6.7.2	Access to the outdoors and freedom of movement may be restricted for the following reasons, provided that confinement is temporary: a) inclement weather; b) conditions in which livestock health or safety is jeopardized, given the stage of production; and c) conditions in which soil, water or plant quality would be compromised. The operator shall document the reasons for, and duration of, confinement. Measures taken to reduce the need to restrict outdoor access in the future shall also be documented when circumstances are within the operator's control.	
6.7.3	<u>When livestock are housed indoors, at least one form of environmental enrichment shall be provided so that all animals in the group have daily access. For dairy cows in tie stalls (are permitted under subclause 6.12.1), enrichment shall be provided during the exercise period if not provided in each stall. Enrichment does not include functional equipment or other objects or materials required by this standard.</u> <u>Environmental enrichments suitable for different types of livestock</u> <u>Type of Livestock: Examples of suitable enrichments</u> <u>Poultry: Hanging peck objects, ramps, tunnels, straw/hay bales, pecking block products</u> <u>Pigs: Suspended chew toys, chains, rubber hoses, rubber toys, cloth strips, hanging knotted cotton ropes, scratch pads, straw/hay bales</u> <u>Cattle: Brushes, hanging ropes or chains, straw/hay bales</u> <u>Sheep and goats: Brushes, platforms, opportunities for climbing and hiding, brush or branches, straw or hay bales</u>	Animals housed indoors for any period of time benefit from environmental enrichment. To improve the welfare and health of organic livestock, we have added a clause covering all types of livestock that would require environmental enrichment <i>when housed indoors</i>. Examples for the main types of livestock enrichments are given in Table 1. A definition of environmental enrichment (livestock) has been added to Clause 3 to complement 6.7.3. See Environmental enrichment for livestock https://mailchi.mp/organicfederation/tcmtg-diverseschanges

6.7.4 ~~6.7.3~~	The continuous tethering of livestock is prohibited, with an exemption for dairy cattle under conditions specified in 6.12.1.	
6.7.5 ~~6.7.4~~	Housing, pens, runs, equipment and utensils shall be cleaned and disinfected to prevent cross infection and build-up of disease-carrying organisms. Appropriate cleaners and disinfectants listed in Tables 5.3, 7.3 and 7.4 of CAN/CGSB-32.311 shall be used. If these substances are not effective, other cleaners and disinfectants are permitted on the recommendation of a veterinarian and with confirmation of a disease issue. In the event of a reportable disease, any effective disinfectant may be used to clean housing, pens and runs. Such uses shall be documented. For equipment that comes into contact with food products, the requirements in 8.2 apply, and substances listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311 are permitted.	
6.7.6 ~~6.7.5~~	All livestock in a production unit shall be managed organically. Individual, non-organic animals may be present in the production unit if they are clearly identified and managed organically. Non-organic livestock production units may be present on an operation if they are clearly identified and kept separate from organic livestock production units.	
6.7.7 ~~6.7.6~~	Organic animals may graze with non-organic animals on common land, that is, crown range or community pasture, provided that: a) documentation confirms that the land has not been treated with prohibited substances for at least 36 months; b) documentation confirms that health care and feed products available to organic livestock while on common land are in accordance with this standard; c) identification permits a clear distinction between organically and non-organically raised animals.	
6.7.8 ~~6.7.7~~	For new installations or replacement purposes, wood for livestock barns and shelters treated with prohibited substances is allowed if livestock or feed does not come in contact with the wood. For existing barns and shelters, operators shall take measures to prevent contact, such as applying a barrier or establishing a buffer zone. ~~If major renovation of barns on existing operations is required in order to comply, operators are granted an extension until December 2023. For fence posts, see 5.2.3.~~	Timeline is eliminated.

6.7.9	<u>Wood used for livestock fencing shall be untreated or treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311, except in the circumstances listed below.</u> <u>a) existing fence posts treated with prohibited substances are permitted if they are in use on the production unit at the start of the organic transition. These posts may be reused within the operation as allowed in 6.7.9 b) and c);</u> <u>b) new or reused fence posts treated with prohibited substances are permitted for exclusion or inclusion of livestock or wildlife on the perimeter of production units, but are not permitted for interior subdivision (e.g. for rotational grazing); and</u> <u>c) new or reused fence posts treated with prohibited substances are permitted if the operator provides documentation showing that they are required by law.</u>	Treated fence posts are now addressed in both the crop section and the livestock section of the COS. This clause addresses the requirements for fence posts when they are used to fence organic livestock. New or re-used treated fence posts are only allowed for perimeter fencing and in situations where the law requires treated fence posts. Use of treated posts for perimeter fencing would improve the situation for operations that have been struggling with (and sometimes losing certification due to) the lack of alternatives to treated posts for structural elements of a fence. For the purposes of 6.7.9, a fence is considered a perimeter fence if it borders a Production unit, which is defined in Clause 3.

6.8 Manure management		
6.8.1	Manure management practices used to maintain areas in which livestock is housed, penned or pastured shall be implemented in a manner that minimizes soil and water degradation, <u>and maintains animal health.</u>	This change aims to make the link between manure management and animal health. Conceptually this is also linked to 6.7.1 f) regarding air quality.
6.8.2	Manure storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water. See also 5.5.2.	
6.9 Livestock product preparation		
	Wherever organic livestock product preparation takes place (for example, facilities used for milking), 8.1 and 8.2 apply.	

6.10 Pest management in livestock facilities		
	Clause 8.3 applies to pest management practices in and around livestock facilities.	

6.11 Additional requirements for cattle, sheep and goats		
6.11.1	Herbivores shall have access to pasture (see definition in Clause 3) during the grazing season. At other times, including the finishing phase, they shall have access to ~~the open air or~~ an outdoor exercise area, weather permitting. <u>The operator shall document the reasons and duration of confinement.</u> Exceptions to the pasture requirement can be made for: a) breeding males; or b) young animals, when it can be documented that their health and welfare are jeopardized. <u>This clause will be reviewed in 2031.</u>	This change clarifies requirements for outdoor access, especially for dairy cows now that they are primarily housed in free stall barns. The COS only allows "temporary" confinement (indoor housing without an outdoor exercise period) of livestock (6.1.3, 6.7.2 and 6.11.1). The new requirement for documentation when cows are kept indoors is based on the perspective that outdoor access should be prioritized for animal health reasons in alignment with organic principles, and steps should be taken to increase outdoor access if it is being regularly restricted (such as improving the surface of the exercise area). This is the current intent of the standards and it is in line with all main organic certification programs in the world. However, there are arguments against this reasoning, including that there will always be periods of confinement outside of the grazing season in Canada's harsh winters. Secondly, in new free stall barns, cows have ample exercise and good ventilation, footing and lighting without going outside. The welfare benefits of access to outdoor and exercise time for dairy cows in tie stalls are clearly identified and

		researched, but not for dairy cows in free stall housing. This is an area that needs more research. In Quebec, the major organic dairy area of Canada, the provincial Ministry of Environment has strict and complex requirements for the construction of outdoor exercise areas to limit environmental contamination, which has added to the expense of the construction of such exercise areas. We will review Clause 6.11.1 in 2030. This time period will allow for 1) more research on the reasons for and frequency of restricting outdoor access on Canadian organic dairy farms, 2) to clarify Quebec's Ministry of Environment's exercise yard regulations, and 3) to allow more research regarding outdoor access for cows in free stall barns									
6.11.2	Minimum indoor and outdoor space requirements for cattle are shown in Table 1: Dairy and Table 2: Beef below.	The footnote requires this clause to be revisited in the 2030 COS review to ascertain if the COS should reduce the ratio of cows to stalls in free stall barns, as a differentiation factor between organic and conventional. Right now, the Code of Practice requirement for conventional dairy allows fewer stalls than cows (maximum 1.2 cows per stall). However, the Code of Practice intends to require 1 cow per stall for conventional dairies starting in 2031, making it the same as the 2020 COS. The recommendation of the Code (best case scenario) is 0.9 cows per stall. This suggests that for organic producers to retain an advantage in									
	Table 1 – Minimum indoor and outdoor space requirements for dairy cattle <table border="1"> <thead> <tr> <th>Cattle</th><th>Indoor space</th><th>Outdoor runs and pens</th></tr> </thead> <tbody> <tr> <td>Free stall</td><td>Ratio of cows to stalls shall not exceed 1:1*</td><td>No minimum area required</td></tr> <tr> <td>Bedded pack barn</td><td>11 m² (118 ft²)/head (of bedded area)</td><td>No minimum area required</td></tr> </tbody> </table>		Cattle	Indoor space	Outdoor runs and pens	Free stall	Ratio of cows to stalls shall not exceed 1:1*	No minimum area required	Bedded pack barn	11 m ² (118 ft ²)/head (of bedded area)	No minimum area required
Cattle	Indoor space	Outdoor runs and pens									
Free stall	Ratio of cows to stalls shall not exceed 1:1*	No minimum area required									
Bedded pack barn	11 m ² (118 ft ²)/head (of bedded area)	No minimum area required									

Individual maternity pens NOTE 1 maternity pen per 35 cows is recommended.	15 m ² (161 ft ²)/head (of bedded area)	Not applicable
Group maternity pens	11 m ² (118 ft ²)/head (of bedded area)	Not applicable
Calves and young cattle	2.5 m ² (27 ft ²)/head for young calves; increasing to 5 m ² (54 ft ²)/head for growing steers and heifers (12 months old)	5 m ² (54 ft ²)/head to 9 m ² (97 ft ²)/head, depending on the size of animals
Tie stalls (see 6.12.1)	Stall size appropriate for size of cow	6.5 m ² (70 ft ²)/head in spring and fall when not on pasture
Note: Table 1 reflects the space requirements for Holstein cattle; with justification, space requirements may be reduced for small breeds of cattle. <u>*Note: This shall be reviewed by December 2030.</u>		

this area, the ratio may need to be reduced in the future.

There is certainly a benefit to having more stalls than cows in free-stall barns, but there is also a significant cost. The 2020 standard (1 cow per stall) is the same or better as the other organic standards around the world.

Table 2 – Minimum indoor and outdoor space requirements for beef cattle

Cattle	Indoor space (when provided)	Outdoor runs and pens
Adult beef cows	5.6 m ² (60 ft ²)/head for 500 kg (1,102 lb) cows increasing to ~~7.259~~ <u>7.897</u> m ² (7897 ft ²)/head for 900 kg (1,984 lb) cows (of bedded area) ^a	9 m ² (97 ft ²)/head

	<table><tr><td>Cattle finishing phase</td><td>Indoor confinement is prohibited in grazing season Space requirements as per Calves and young cattle below</td><td>23 m² (247.5 ft²)/animal for 363 kg (800 lb) finishers and increase to 46.5 m² (500 ft²)/animal for 545 kg (1,200 lb) finishers</td></tr><tr><td>Calves and young cattle</td><td>2.5 m² (27 ft²)/head for young calves; increasing to 5 m² (54 ft²)/head for growing steers and heifers (12 months old) (of bedded area)</td><td>5 m² (54 ft²)/head to 9 m² (97 ft²)/head, depending on the size of animals</td></tr><tr><td>Maternity pens NOTE 1 maternity pen per 20 cows is recommended.</td><td>13.4 m² (144 ft²)/head (of bedded area)</td><td></td></tr><tr><td colspan="3"><u>^a If construction of new infrastructure is required in order to comply with minimum indoor space requirements for 900 kg+ beef cattle of 9 m²/head, operators are granted an exemption that permits 7.25 m²/head for 900 kg+ beef cattle until the end of December 2028.</u></td></tr></table>	Cattle finishing phase	Indoor confinement is prohibited in grazing season Space requirements as per Calves and young cattle below	23 m ² (247.5 ft ²)/animal for 363 kg (800 lb) finishers and increase to 46.5 m ² (500 ft ²)/animal for 545 kg (1,200 lb) finishers	Calves and young cattle	2.5 m ² (27 ft ²)/head for young calves; increasing to 5 m ² (54 ft ²)/head for growing steers and heifers (12 months old) (of bedded area)	5 m ² (54 ft ²)/head to 9 m ² (97 ft ²)/head, depending on the size of animals	Maternity pens NOTE 1 maternity pen per 20 cows is recommended.	13.4 m ² (144 ft ²)/head (of bedded area)		<u>^a If construction of new infrastructure is required in order to comply with minimum indoor space requirements for 900 kg+ beef cattle of 9 m²/head, operators are granted an exemption that permits 7.25 m²/head for 900 kg+ beef cattle until the end of December 2028.</u>			
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	~~If construction of new infrastructure is required in order to comply with 6.11.3, operators are granted an exemption that permits the use of existing infrastructure until the end of December 2025, provided that a plan for the new construction or renovation is in place by December 2023.~~	Timelines are eliminated or adjusted as needed.
6.11.4 <i>NEW</i>	Milking parlors for dairy sheep and goats shall meet the requirements of 6.12.4.	In various places, the COS now includes goats and sheep where it previously just mentioned cattle.
6.12 Additional requirements for dairy cattle housing		
6.12.1	Tie stalls in existing dairy barns may be used for lactating dairy cows, and for a period of one month for the training of heifers raised in loose housing. Tie stalls are prohibited in new construction and major renovations. All use of tie stalls will be phased out of organic dairy production by December 2030. ~~By December 2020,~~ If tie stalls are used, dairy cows shall have an exercise period at least twice a week, preferably every day, <u>for a period of at least one hour.</u> <u>An exercise period is defined as time when the cow is untied outside of routine handling procedures, such as milking.</u>	This change clarifies the length of the required exercise period for dairy cows housed in tie stalls in response to reports of some producers calling the walk to the milking parlour an exercise period. The trip to the milking parlour could be as short as a few minutes' walk twice per day and an exercise period should be longer than that. The exercise period length is tied to the weather (as most barns do not include indoor space for exercising the cows) because if the cows are out of the barn for too long in cold weather, given that some barns are heated by the warmth generated by the cows themselves, pipes in the barn may freeze. Therefore the exercise period, in addition to being outside of routine handling, must be at least 1 hour but could be shortened in extreme weather.
6.12.2	In a free-stall system, the ratio of cows to stalls shall not exceed 1:1.	
6.12.3	Electric trainers are prohibited. The tails of cows in stalls may be tied to prevent the tail from lying in the gutter, provided that the tying allows for natural behaviour, free movement of the tail and quick release when necessary.	

6.12.4	If milking parlours are in use: a) operators shall minimize animal waiting time between the time they are moved to the holding area and the time they return to the barn or pasture; b) portable milking units shall be available for sick or weak animals that are unable to make it to the milking parlour; c) electric crowd gates are prohibited; and d) non-slip flooring shall be used in the holding area, parlour and alleys.	
6.12.5	<u>Unweaned calves that are healthy, thriving, and compatible in age, size, and drinking speed shall be housed in pairs or groups. Operators currently raising calves individually are granted an exemption to allow them to transition to pair/group housing by December 2027, if changes to infrastructure are required.</u> ~~Unweaned calves may be housed in individual pens and hutches if they are sick or if there are too few calves compatible in their age, size, and drinking speed. When housed individually, up to three months of age, provided that the following conditions shall be met:~~ a) ~~calves they~~ are not tethered and have enough room to turn around, lie down, stretch out when lying down, get up, rest and groom themselves; b) individual pens <u>and hutches</u> are designed and located so that each calf <u>has physical contact with</u> ~~can see, smell and hear~~ other calves <u>unless they are sick</u>; c) individual housing has an area of at least 2.5 m² (27 ft²) and a minimum width of 1.5 m (4.9 ft); and d) outdoor hutches shall have access to an enclosed yard or run.	Instead of allowing individual housing up to the age of 3 months, organic calves will now need to be housed in pairs or groups. The research shows that pair housing or group housing has many advantages: it decreases stress, improves growth, improves welfare, helps calves adapt to change and improves their learning ability. This form of housing prepares the calf for life in a herd. The benefits are best realized when calves are grouped starting when they are no more than 2-3 weeks of age. The Code of Practice will require this form of housing for all dairy farms starting in 2031. The exception to allow individual housing is provided because smaller farms may not have many calves of the same age, in which case weaker or smaller calves would suffer from too much competition if they were housed together. Also, animals might need to be housed individually while sick.
6.12.6	Calves shall be group-housed after weaning.	

6.12.7	Dairy replacement calves over nine months of age shall have access to pasture, as appropriate for the season.	
6.12.8	<u>6.12.8 During the grazing season, dairy cows on pasture shall have access to a water source within 200 m.</u>	This change requires that dairy cows are provided with water on pasture in order to ensure cow health and welfare. The change is necessary given the increase in robotic milking systems and in response to shifting strategies of grazing and milking management.

6.13 Additional requirements for poultry		
6.13.1	The operator shall establish and maintain poultry living conditions that accommodate the health and natural behaviour of poultry as follows: a) The keeping of poultry in row, battery, enriched or colony cages, is prohibited; b) Poultry shall be reared in open-range conditions and have free access to pasture, open-air runs, and other exercise areas, subject to weather and ground conditions. Outdoor areas shall: ~~1) be free of prohibited substances for 36 months prior to their use;~~ <u>have completed the necessary transition period and been granted organic status;</u> 2) be covered with vegetation, seeded if necessary, and periodically left empty to allow vegetation to regrow and to prevent disease build-up. To facilitate rodent control, a vegetation-free perimeter around poultry houses is permitted; 3) have effective overhead cover (for shade and protection from avian predators) distributed throughout the range area of barn-raised birds to encourage continual use by the birds. The cover may be natural (such as trees, shrubs and crops) or artificial (such as shade cloth, camouflage netting, screens or trailers). Roof overhangs over pasture may account for up to 50% of the required overhead cover if they are functional (i.e., they provide shade and protection from avian predators). ~~By December 2023, operators shall~~	The outdoor areas required for organic poultry will now need to be certified organic land. The birds eat grass and soil, and therefore it makes sense for the land to be certified organic. Timelines are eliminated or adjusted as needed.

	~~submit a plan to ensure that this~~ Overhead cover shall represent at least 10% of the minimum required range area (as outlined in Table 5 of 6.13.13) ~~by December 2025~~; and 4) show signs of use as appropriate for the season; c) In an emergency, when outdoor access results in an imminent threat to the health and welfare of poultry, access may be restricted. Outdoor access shall resume when the imminent threat ends. Producers shall document periods of confinement; and d) Operators shall have an organic plan that describes outdoor access and how they will protect birds from disease and predators.	
6.13.2	General requirements for layers	
	a) Layers may be confined during onset of lay, that is, until peak production is reached. The laying flock shall have outdoor access for at least one-third of its laying life.	
	b) Rearing facilities that closely match the conditions that exist in the layer barn are recommended. Pullets, however, may be kept indoors until they are fully immunized.	
	c) Layer flocks shall be limited to 10,000 birds. More than one flock may be in the same building if the flocks are separated and have separate runs.	
6.13.3	Enriched verandahs for barn-raised layers	
	a) Enriched verandahs shall be used when barn-raised layers do not have access to outdoor runs because of weather or disease constraints.	
	b) An enriched verandah is a covered, uninsulated, unheated extension to a poultry barn. Birds shall have access to the enriched verandah year-round during daylight hours, at least from spring through fall. The enriched verandah shall:	
	1) have an outdoor climate but offer protection from inclement weather (e.g., wind, rain), rodents, predators and disease threats;	

	2) represent at least 1/3 of the footprint of the indoor barn area; 3) have natural lighting which may be supplemented with artificial lighting; 4) have a sand floor, a dirt floor or a solid floor covered with bedding, such as straw or wood shavings, for comfort and warmth and to encourage foraging, scratching and dust-bathing behaviours; 5) offer <u>environmental</u> enrichments (examples include perches, trays of greens, hay bales, pecking objects) to encourage natural behaviours; and 6) not count towards indoor or outdoor space allowance. c) Enriched verandahs shall be provided in new construction for barn-raised layers. They shall be added to existing infrastructure when the operator cannot demonstrate that at least 25% of layers utilize the outdoor range when there are no weather or disease constraints. d) All existing enriched verandahs shall be accepted as they are as of December 2020; they are exempt from 6.13.3 b) 2) and 6.13.3 b) 6). e) If the operator can demonstrate that the addition of an enriched verandah of the size specified in 6.13.3 b) is not possible for an existing barn due to lack of space or because of design limitations of the existing barn: 1) a smaller enriched verandah shall be allowed provided it is as close in size as possible to the requirement of one third of the footprint of the indoor barn area; or 2) the enriched verandah shall be constructed in the uncovered outdoor area and, as an exception, may count as part of the outdoor space allowance; or 3) operators are granted an exemption that permits the use of existing infrastructure until ~~December 2030~~ <u>March 2031</u>, provided that a plan for the new construction or renovation is in place by <u>March 2026</u> ~~December 2025~~.	The word “environmental” is added to match with the new definition added in Clause 3.
6.13.4	Layers shall have access to ~~an adequate number of nests, as recommended by best management practices.~~ <u>the nest space area listed in the requirements of the <i>Code of Practice for the Care and Handling of Pullets and Laying Hens for Non-Cage systems</i> (see Clause 2.4).</u>	Nest box space requirements are aligned with the Code of Practice requirement, which is based on peer reviewed research. The requirement of the Code of Practice is: "For Non-Cage systems: Each hen must be provided with nest space area at a minimum

		of 83.2 cm ² (12.9 sq in) [1.0 m ² (10.8 sq ft) for each 120 hens] - Nest space must not be included when calculating useable space allowance."
6.13.5	Perches shall meet the following criteria: a) In the first weeks of life, layer chicks shall have continuous access to perch space. b) During the pullet rearing phase, adequate perch space shall be appropriate for the final production system and accessible at all times and at varying heights .<u>By six weeks of age operators shall provide 10 cm of perch space or 100 cm² of platform space per pullet.</u> c) Laying hens shall have a minimum of 15 cm (5.9 in.) perch space per hen, accessible at all times and at varying heights. d) Perches for laying hens shall be purpose-designed, such as alighting (landing) rails in aviaries, which allow birds to wrap their toes around the rail. Feed and water trough edges, slatted floors and ladder rungs are not considered purpose-designed perching objects, but may be used to provide additional perch space beyond what is required in 6.13.5 a), b) and c). e) Perches shall be a minimum diameter or width of 1.9 cm (0.75 in.). f) Other poultry are exempt from 6.13.5 a), b), c), d) and e).	
Note:	Producers are advised to review the <i>Code of Practice for the Care and Handling of Pullets and Laying Hens</i> (see 2.4) to ensure they meet additional perch requirements for both pullets and adult layers contained therein.	
6.13.6	General requirements for meat chickens and turkeys	
a)	Meat chickens that will be raised outdoors in shelters without indoor access shall have access to pasture on a daily basis by four weeks of age, unless weather conditions endanger the health or safety of the birds. Turkeys shall have outdoor access by eight weeks of age.	
b)	Barn-raised meat chickens shall have outdoor access on a daily basis by at least 25 days of age when there are no weather constraints. Operators shall take measures to increase use of the pastures and outside exercise areas and have a goal of a minimum of 15% of birds on range when	This clause will be reviewed in 2030 as there was not enough information to fully review the topic in 2025.

	there are no weather constraints. Operators shall document the use of the range and continue to strive to increase the number of birds on the range in future years. This will be reviewed by ~~December 2025~~ <u>March 2031</u> .																						
Note	Potential measures for increasing the usage of pasture, outdoor range and outside exercise areas: ● use slower-growing foraging (hardy) breeds (characterized by a growth rate of no more than 45 g/day); ● use a ration that has been nutritionally adjusted for slower growth (i.e., lower in protein); ● implement an older slaughter age (e.g., 60 days) provided the health of the birds can be maintained; ● allow outdoor access before the minimum age specified; ● provide mobile units for summer production; ● provide effective overhead cover on pasture; ● provide ~~pasture~~ <u>pasture-environmental enrichment on the pasture</u> (e.g., feed, water, perches, etc.); ● improve pasture access (e.g., pophole changes, etc.); and ● provide enriched verandahs [see descriptions in 6.13.3 b).	Added the word “environmental” to match with the new definition added in Clause 3.																					
6.13.7	Poultry barns shall have sufficient exits (popholes) to ensure that all birds have ready access to the outdoors.																						
6.13.8	Exits shall:																						
	a) allow passage of more than one bird at a time, and be evenly distributed along the line of access to the outdoor range;																						
	b) shall correspond to the requirements shown in Table 4 for the number and size of exits.																						
Table 4 – Poultry barns minimum exit numbers and size <table><tr><th>Poultry</th><th>Combined width of popholes</th><th>Minimum width of each pophole</th><th>Minimum height</th><th>Minimum number</th></tr><tr><td>Layers</td><td>2 m (6.6 ft)/1000 hens</td><td>50 cm (20 in.)</td><td>35 cm (14 in.)</td><td>2</td></tr><tr><td>Broilers</td><td>1 m (3.3 ft)/1000 birds OR all birds within 15 m (49 ft) of an exit</td><td>50 cm (20 in.)</td><td>35 cm (14 in.)</td><td>2</td></tr><tr><td>Turkeys</td><td>2 m (6.6 ft)/1000 birds</td><td>150 cm (59 in.)</td><td>75 cm (30 in.)</td><td>2</td></tr></table>			Poultry	Combined width of popholes	Minimum width of each pophole	Minimum height	Minimum number	Layers	2 m (6.6 ft)/1000 hens	50 cm (20 in.)	35 cm (14 in.)	2	Broilers	1 m (3.3 ft)/1000 birds OR all birds within 15 m (49 ft) of an exit	50 cm (20 in.)	35 cm (14 in.)	2	Turkeys	2 m (6.6 ft)/1000 birds	150 cm (59 in.)	75 cm (30 in.)	2	
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6.13.9	When existing organic poultry barns do not meet the requirements of 6.13.8 b) (Table 4), either the distance from an exit from anywhere in the barn shall be no more than 15 m (49 ft), or the operator shall provide evidence that birds utilize outdoor range. Evidence shall demonstrate that 25-50% of birds are on range when there are no age or weather constraints.												
6.13.10	Bedding material shall be provided as litter material and kept dry. Houses with slatted floors shall have a minimum of 30% solid, bedded floor area to encourage dust bathing, scratching and foraging behaviours.												
6.13.11	Poultry shall have access to at least the number of waterers and feeders required by the relevant Code of Practice (see 2.4).												
6.13.12 a) b)	Poultry housed indoors shall be provided with natural light either with evenly distributed windows or light-permeable fabric. The total window area shall be no less than 1% of the total ground-floor area, unless it can be demonstrated that natural light levels are sufficient to read a document, such as a newspaper, anywhere in the barn. If daylength is artificially prolonged, the total duration of light shall not exceed 16 hours, and shall be terminated by gradual reduction of light intensity followed by 8 hours of continuous darkness. The following exceptions are permitted and shall be documented: a) periods of increased lighting are permitted due to the stage of production, for example, the arrival of chicks and turkey poults; b) decreased lighting intensity is permitted due to animal welfare concerns, for example, outbreaks of cannibalism.												
6.13.13	The maximum indoor and outdoor densities are shown in Table 5.	The permitted density for chicks/pullets under 4 weeks of age has been increased in order to improve health outcomes. Young chicks need to be kept in close quarters for warmth and access to feed and water, and the 2020 COS prevents that practice. The <i>Code of Practice for Layers</i> is currently under revision. To make sure that the COS would not be requiring a higher density than the Code of Practice, the lowest density of the two is required.											
	Table 5 – Maximum indoor and outdoor densities for poultry ^a <table border="1"> <thead> <tr> <th>Poultry</th><th>Indoors</th><th>Outdoor runs</th></tr> </thead> <tbody> <tr> <td>Layers (19 weeks and older)^b</td><td>6 birds/m² (10.76 ft²)</td><td>4 birds/m² (10.76 ft²)</td></tr> <tr> <td>Chicks and pullets 0-4 weeks ^{b-c d}</td><td><u>35 birds/m² (10.76 ft²)</u></td><td><u>16 birds/m² (10.76 ft²)</u></td></tr> <tr> <td>Pullets 05-8 weeks ^{b-c d}</td><td>24 birds/m² (10.76 ft²)</td><td>16 birds/m² (10.76 ft²)</td></tr> </tbody> </table>		Poultry	Indoors	Outdoor runs	Layers (19 weeks and older)^b	6 birds/m ² (10.76 ft ²)	4 birds/m ² (10.76 ft ²)	Chicks and pullets 0-4 weeks ^{b-c d}	<u>35 birds/m² (10.76 ft²)</u>	<u>16 birds/m² (10.76 ft²)</u>	Pullets 05-8 weeks ^{b-c d}	24 birds/m ² (10.76 ft ²)
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Pullets 9-18 weeks ^{b-c}	15 birds/m ² (10.76 ft ²)	10 birds/m ² (10.76 ft ²)												
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6.13.14	Multi-level aviary systems for layers shall have no more than three levels or tiers above ground level. Total floor space, for calculation of solid-floor area and bird density requirements, shall include all usable floor levels (see 6.13.10 and 6.13.13). If enriched verandahs are used to provide required scratching areas, they shall be accessible year-round.													
6.13.15	For pasture-based operations with mobile units, stocking density shall be no more than 2000 layers/ha (800 layers/ac.), 2500 broilers/ha (1000 broilers/ac.) or 1300 large birds (turkeys/geese)/ha (540 large birds/ac.), based on the total amount of land used for rotational poultry pasture. When birds are in moveable field shelters, the shelters shall be moved daily, whenever possible, and at least once every four days, taking into consideration the impact on the birds and on the land. Density within the moveable shelters shall correspond to the indoor density described in 6.13.13.													
6.13.16 NEW	<u>When an operation raises poultry on pasture during the grazing season (subject to 6.13.6 a) and 6.13.15) and in a barn during the non-grazing season, the barn shall meet the housing requirements of 6.13 (see definition of grazing season in Clause 3).</u>	The indoor housing arrangement should always be set up for outdoor access because there can be good weather days, which are suitable for birds to go outside, outside of the grazing season.												

~~6.13.16~~ 6.13.17	Buildings shall be emptied, cleaned and disinfected, between flocks, and runs shall be left empty to allow the vegetation to grow back.																										
~~6.13.17~~ 6.13.18	Ducks and geese shall have access to a water area created for their use, whenever weather conditions permit. Facility design shall address the need to prevent commingling of wild waterfowl and domestic poultry.																										
6.14 Additional requirements for rabbits																											
6.14.1	If required for comfort and security, rabbits may be temporarily confined, for example, overnight, in cages or hutches. Continuous confinement is prohibited.																										
6.14.2	The use of mobile pasture pens is permitted, provided that pens do not restrict natural behaviour and they are moved at least once every three days.																										
6.14.3	Rabbits shall have space to run, hop and dig, and to sit upright on their back legs with ears erect. The minimum indoor and outdoor space requirements are shown in Table 6.																										
Table 6 – Minimum indoor and outdoor space requirements for rabbits <table><tr><th>Rabbits</th><th>Indoor space</th><th>Outdoor – runs and concrete exercise areas</th><th>Outdoor – pasture</th><th>Mobile pens</th></tr><tr><td>From weaning to slaughter</td><td>0.3 m² (3.23 ft²)/ head</td><td>2 m² (22 ft²)/head</td><td>5 m² (54 ft²)/head</td><td>0.4 m² (4.3 ft²)/ head</td></tr><tr><td>Pregnant does</td><td>0.5 m² (5.4 ft²)/ head</td><td>2 m² (22 ft²)/head</td><td>5 m² (54 ft²)/head</td><td>0.5 m² (5.4 ft²)/ head</td></tr><tr><td>Does and litters</td><td>0.7 m² (7.5 ft²)</td><td>2 m² (22 ft²)</td><td>Not applicable</td><td>0.4 m² (4.3 ft²)/ head in shelter 2.4 m² (26 ft²) for grazing area</td></tr><tr><td>Bucks</td><td>0.3 m² (3.23 ft²)/ head</td><td>2 m² (22 ft²)/head</td><td>5 m² (54 ft²)/head</td><td>0.4 m² (4.3 ft²)/ head</td></tr></table>		Rabbits	Indoor space	Outdoor – runs and concrete exercise areas	Outdoor – pasture	Mobile pens	From weaning to slaughter	0.3 m ² (3.23 ft ²)/ head	2 m ² (22 ft ²)/head	5 m ² (54 ft ²)/head	0.4 m ² (4.3 ft ²)/ head	Pregnant does	0.5 m ² (5.4 ft ²)/ head	2 m ² (22 ft ²)/head	5 m ² (54 ft ²)/head	0.5 m ² (5.4 ft ²)/ head	Does and litters	0.7 m ² (7.5 ft ²)	2 m ² (22 ft ²)	Not applicable	0.4 m ² (4.3 ft ²)/ head in shelter 2.4 m ² (26 ft ²) for grazing area	Bucks	0.3 m ² (3.23 ft ²)/ head	2 m ² (22 ft ²)/head	5 m ² (54 ft ²)/head	0.4 m ² (4.3 ft ²)/ head	
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6.14.4	Rabbits shall not be subjected to continuous lighting or kept in permanent darkness. During the day, rabbits shall be able to clearly see each other and their surroundings.	
6.14.5	Does about to give birth shall be given secluded individual burrows or nest boxes for kindling (birthing).	
6.14.6	The doe and litter shall have free access to outdoor range and foraging areas once the kits reach 21 days of age.	
6.14.7	Weaning before the kits are 30 days of age is prohibited. However, if the welfare of the doe or kits is compromised, earlier weaning is permitted.	

6.15 Additional requirements for pigs and farm-raised wild boar		
6.15.1	The number of animals on a production unit shall reflect the size of the available land-base, which comprises land owned, leased and available for spreading their manure, and based on a balance between animal units, feed production and manure management. Farrow to finish operators shall not exceed 2.5 sows/ha (1 sow/ac.).	

6.15.2	Pigs shall have <u>daily</u> access to outdoor ~~exercise~~ areas with the exception of sows with nursing piglets. Outdoor access can be temporarily restricted as stated in 6.7.2. a) Outdoor areas may include woodlands, other natural environments, soil or concrete exercise areas. Access to pasture is recommended but not mandatory. If pasture areas are degraded and cannot be used by the pigs, other outdoor exercise areas shall be provided in order to meet the requirements for outdoor access and rooting. b) An outdoor exercise area may be covered as long as at least three sides of the structure are open. c) When outdoors in open areas (e.g., pasture), pigs shall have access to shaded/sheltered areas suitable for the whole herd so they may take cover during inclement weather. d) Pigs shall not be confined exclusively to concrete yards without access to an indoor or outdoor bedded area. e) Guidelines around management of outdoor areas (6.7.1), preventing occurrence and spread of parasites (6.6.1 c), 6.6.11) and permitting rooting for pigs (6.15.7) shall apply.	The new text clarifies that pigs must have outdoor access on a daily basis. Also, the term "outdoor exercise areas" in the first line of 6.15.2 of the 2020 COS was not clear. The rest of the clause describes various options for outdoor access, of which an "exercise area" is only one. Therefore, the word "exercise" is removed so "outdoor access" is more general and pig producers aren't limited to one form of outdoor access. For poultry, providing outdoor access isn't sufficient: organic producers must demonstrate that a certain percentage of birds go outside because poultry (being a prey species) are cautious about new and potentially threatening spaces. However no such requirement is included here. Pigs are very curious and bold, and are attracted to new spaces.
Note:	Pasture management practices implemented to avoid degradation and prevent parasite build-up may include: • rotation of pastures with annual crops; • having a paddock rotation plan depending on the season; • leaving a paddock empty for 5 years before repopulating with growing pigs; • keeping sows in a paddock for a maximum of 2 years before providing the paddock with a rest period.	
6.15.3	Sows and gilts shall be kept in groups, with the following exceptions: a) individual pens are permitted for the protection of females during estrus, or for other health reasons, for a period of up to five days; b) sows may be individually housed in a pen ~~[7.5 m² (81 ft²) per sow with litter]~~ for up to five days prior to farrowing and during the suckling period;₂	This change clarifies what type of restraint is allowed for sows: in the 2020 COS, farrowing crates are prohibited in 6.15.3. d), but restraint of an undefined nature is permitted for up to 3 days in 6.15.3. c).

	~~e) if needed for piglet protection during the suckling period, sow restraint is permitted for a maximum of three days.~~ ~~d) the use of farrowing crates as a means of restraint is prohibited.~~	6.15.3 d) in the 2020 COS is intended to prevent: 1- keeping a sow in a space in which she cannot turn around, and 2- keeping the sow in that space for a prolonged period of time (i.e., the farrowing and suckling period in conventional production; or for 3 days as, by some interpretations, is allowed in the 2020 COS).
6.15.4	<u>Confinement of sows in gestation crates or farrowing crates, or in another manner that prevents them from turning around is prohibited, except for periods of temporary restraint. Sows may be restrained for a maximum period of four consecutive hours to protect the piglets or to protect the operator during piglet processing or pen cleaning. Sows shall be directly supervised while restrained and released as soon as possible.</u>	"Sow restraint" as mentioned in 2020 COS 6.15.3 c) means restraint in a space smaller than the permitted pen size (for a sow and her litter, the minimum pen size is 7.5 m² (81 ft²), as per COS 2020 6.15.3 b) and now in Table 7). The change prohibits the practice of restraining the sow for up to 3 days for piglet protection. Instead, the sow can be restrained for a maximum of 4 hours. The producer must be present when the sow is restrained (i.e., direct supervision) and the sow must be released as soon as possible. Four hours is enough time to (1) protect the piglets in the situation of a nervous sow during farrowing (this addresses the risks of crushing or cannibalism), (2) allow the producer to clean the pen of an aggressive sow regularly and safely, and (3) work with the piglets (for example, when castrating). The producer could use any type of enclosure to restrain the sow in the conditions described above. The mention of farrowing crates was removed because they are prohibited already by the minimum pen size dictated in Table 7.

		Some farms have farrowing crate-style enclosures with a side wall that can be opened and closed within the larger farrowing pens. These were being used for temporary restraint in exceptional circumstances or for short periods of time. Therefore, the crate was acting as a handling system rather than a housing system. In summary, it is not the farrowing crate as a piece of equipment that needs to be prohibited, but how it is used.
6.15.5	<u>When sows are expected to farrow, or moved to the farrowing area, they shall be provided with a quantity of straw or other suitable natural material sufficient to enable them to build nests.</u>	This change adds a requirement to provide nesting material for sows. Nest-building behaviour is very strong and has positive welfare outcomes for the sow, such as reducing stress (as shown by the research). Straw is recommended as the first choice, however the clause permits the use of other materials, such as hay or wood shavings, or for the sow to use natural materials found in the outdoor environment.
6.15.6 ~~6.15.4~~	Piglets shall not be weaned before four weeks of age. However, if the welfare of the sow and/or piglets is compromised, <u>piglets may be weaned earlier by exception</u>~~weaning is permitted~~. <u>Operator shall document and provide justification for early weaning. The weaning age will be reviewed by March 2031.</u>	This change requires documentation and justification when piglets are weaned earlier than 4 weeks of age. This minimum requirement is lower than most other organic standards (e.g., in the EU). However, on farms in Canada, conventional pigs are weaned at around three weeks of age, so this maintains a longer suckling time for organic pigs. Further research must be done to evaluate and better understand why EU countries wean at a minimum of 40 days. It appears that EU farmers manage piglet feeding differently, and they may also have different breeds and husbandry

		systems that allow later weaning. This is why we want to review the minimum piglet weaning age by December 2030.																				
6.15.7 ~~6.15.5~~	Piglets shall not be kept on flat decks or in cages.																					
6.15.8 ~~6.15.6~~	Boars may be housed in individual enclosures provided there is visual and tactile contact with other pigs.																					
6.15.9 ~~6.15.7~~	Indoor and outdoor exercise areas shall permit rooting.																					
6.15.10 ~~6.15.8~~	The use of nose rings is prohibited.																					
6.15.11 ~~6.15.9~~	The minimum indoor and outdoor space requirements ~~are shown in Table 7~~ <u>apply only to pigs when they are housed in barns. Within the total area, the minimum indoor and outdoor space shall be respected.</u>	The change makes it clear that Table 7 does not apply to pigs housed in outdoor systems, only to pigs housed in barns.																				
	Table 7– Minimum indoor and outdoor space requirements for pigs and <u>wild</u> boars^a <table><tr><th>~~Pigs and boars~~</th><th>Indoor space</th><th>Outdoor runs and pen</th><th><u>Total area</u></th></tr><tr><td>Sow and piglets (~~up to 40 days old until weaning~~)^b</td><td>7.5 m² (81 ft²) for each sow and litter</td><td>Not required</td><td><u>7.5 m² (81 ft²)</u></td></tr><tr><td>Growing pigs a) up to 30 kg (66 lb)</td><td>0.6 m² (6.5 ft²)/head</td><td>0.4 m² (4.3 ft²)/head</td><td><u>1.0 m² (10.8 ft²)/head</u></td></tr><tr><td>b) 30–50 kg (66–110 lb)</td><td>0.8 m² (8.6 ft²)/head</td><td>0.6 m² (6.5 ft²)/head</td><td><u>1.4 m² (15.1 ft²)/head</u></td></tr><tr><td>c) 50–85 kg (110–187 lb)</td><td>1.1 m² (12 ft²)/head</td><td>0.8 m² (8.6 ft²)/head</td><td><u>1.9 m² (20.6 ft²)/head</u></td></tr></table>	~~Pigs and boars~~	Indoor space	Outdoor runs and pen	<u>Total area</u>	Sow and piglets (~~up to 40 days old until weaning~~)^b	7.5 m ² (81 ft ²) for each sow and litter	Not required	<u>7.5 m² (81 ft²)</u>	Growing pigs a) up to 30 kg (66 lb)	0.6 m ² (6.5 ft ²)/head	0.4 m ² (4.3 ft ²)/head	<u>1.0 m² (10.8 ft²)/head</u>	b) 30–50 kg (66–110 lb)	0.8 m ² (8.6 ft ²)/head	0.6 m ² (6.5 ft ²)/head	<u>1.4 m² (15.1 ft²)/head</u>	c) 50–85 kg (110–187 lb)	1.1 m ² (12 ft ²)/head	0.8 m ² (8.6 ft ²)/head	<u>1.9 m² (20.6 ft²)/head</u>	A translation error was corrected in the title of this table: it is intended to apply to pigs and wild boars (and has done so since before 2015 in the French standards). A third column was added along with details in the introductory sentence to improve clarity of Table 7: for pigs in barns (not in outdoor systems), all three columns are relevant. The change in title for Sows and piglets, from 'up to 40 days' to 'until weaning' reflects what is happening on farms. We added space requirements for Sows housed in individual pens for the protection of females during estrus or for health reasons, permitted by 6.15.3 a.
~~Pigs and boars~~	Indoor space	Outdoor runs and pen	<u>Total area</u>																			
Sow and piglets (~~up to 40 days old until weaning~~)^b	7.5 m ² (81 ft ²) for each sow and litter	Not required	<u>7.5 m² (81 ft²)</u>																			
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b) 30–50 kg (66–110 lb)	0.8 m ² (8.6 ft ²)/head	0.6 m ² (6.5 ft ²)/head	<u>1.4 m² (15.1 ft²)/head</u>																			
c) 50–85 kg (110–187 lb)	1.1 m ² (12 ft ²)/head	0.8 m ² (8.6 ft ²)/head	<u>1.9 m² (20.6 ft²)/head</u>																			

d) >85 kg (187 lb)	1.3 m ² (14 ft ²)/head	1.0 m ² (10.76 ft ²)/head	<u>2.3 m² (24.8 ft²)/head</u>	The allotment of space for the sow and her piglets was also clarified, see footnote b, to ensure that the exclusion zone (nest area) for the piglets could not significantly reduce the amount of space for the sow. No guidance or standard exists on the size of the piglet exclusion area, or protected area, in organic or conventional production. The piglet exclusion area is a small area within a pen where sows farrow and suckle the piglets; it is small because its purpose is to keep the piglets warm (with a heat source) and give them a safe space to avoid being crushed when the sow lays down. Discussion with pig producers and a review of schematics of commercial pens showed that 20% is a generous allotment of space to the piglets and this means that the sow has at least 6 m2 of space within the pen.
Sows in group pens	3 m ² (32.3 ft ²)/head	3 m ² (32.3 ft ²)/head	<u>6 m² (64.6 ft²)/ head</u>	
<u>Sows in individual pens</u>^c	<u>3 m² (32.3 ft²)/head</u>	<u>Not required</u>	<u>3 m² (32.3 ft²)/ head</u>	
Boars in individual pens	9 m ² (97 ft ²)/head	9 m ² (97 ft ²)/head	<u>18 m² (194 ft²)/ head</u>	
^a Under exceptional circumstances, the maximum stocking density may be exceeded for individual groups. These circumstances shall be documented and if they recur, actions shall be taken to prevent future groups from surpassing maximum stocking density. ^b <u>The protected area for the piglets (nest or creep area) shall be no larger than 20% of the space provided for the sow and litter.</u> ^c <u>See 6.15.3 a for the circumstances in which keeping sows in individual pens is permitted.</u>				

7 Specific production requirements

7.1 Apiculture

	2020 COS with Tracked Changes	Rationale
7.1.1	Bees may be introduced to an operation and managed for production benefits, such as pollination of organic crops. If managed as a livestock species for the production of organic products (for example, honey, pollen, propolis, royal jelly, beeswax and bee venom), bees shall be managed in accordance with this standard.	
7.1.2	The operator shall prepare a detailed organic plan (see 4.1, 4.2 and 4.3) that describes the source of bees; production methods; bee diet; control of pests, including diseases, mites and insects; breeding; and other	

	related issues of colony management. Where applicable, the organic plan shall also describe crop management practices.	
7.1.3	Records that document all apiary management activities, including removal of supers and extraction of honey (see 4.4), shall be maintained.	
7.1.4	The treatment and management of bee colonies shall be informed by the principles of organic production (see Introduction, clause 0.2).	
7.1.5	Organic plants and undomesticated, non-agricultural vegetation shall be the primary source of nectar, honeydew and pollen. Crops treated with prohibited substances and genetically engineered crops shall be avoided.	
7.1.6	Bee health shall be based on appropriate measures, such as selection of stock with disease-resistant traits, availability of suitable forage, and good apiary management practices.	
7.1.7	When bees are placed in wild areas, impact on the indigenous insect population shall be considered.	
7.1.8	Transition	
7.1.8.1	Colonies and hives (including brood and honey super frames) shall be under continuous organic management for at least 12 months before products may be considered organic.	
7.1.8.2	Colonies and hives shall not be rotated between organic and non-organic management systems. Bees treated with antibiotics are subject to the requirements of 7.1.15.7.	
7.1.9	Introduced bees If commercially available, introduced bees, that is, replacement bees for established colonies, shall be organic. Replacement colonies shall be produced within the operation or come from another established organic apiary.	
7.1.10	Location of hives	

	Where sources or zones of prohibited substances are present, that is, genetically engineered (GE) crops or environmental contamination, apiaries shall be protected with a buffer zone of 3 km (1.875 mi.). The following exceptions apply:	
a)	fertilizers (including those that are not listed in Table 4.2 Column 2 of CAN/CGSB-32.311) are permitted in the buffer zone, with the exception of sewage sludge; and	
b)	buffer zones may be reduced if natural features that would restrict the likelihood of bee travel (such as forests, hills or waterways) and abundant compliant forage are present.	
c)	<u>During periods of reduced bee mobility and when forage is not generally available, the buffer zone around temporary preparation apiaries and wintering yards may be reduced to 100 meters.</u>	The reduction of the buffer to 100 m when foraging is considering the operational aspect of hive management in Canada. Under the EU, the 3-km buffer does not apply where flowering is not taking place or the bee colonies are dormant.
7.1.11	Forage and feeding	
7.1.11.1	The primary food source for adult colonies shall be nectar and pollen collected from sources conforming to this standard and food sources stored by the bees in the hive (honey, pollen, etc.).	
a)	In the event of a regional or seasonal shortage of forage and for winter feeding of colonies, the following is allowed in order of preference: 1) organic honey from within the operation; 2) organic sugar (e.g., inverted, syrup, fondant); 3) non-organic transitional honey from within the operation; 4) ~~non-organic, non-genetically engineered (non-GE) sugar (compliant with 1.4 and 1.5);~~	In the 2020 COS, non-organic sugar can be fed to bees during the winter. Given that non-organic sugar is not permitted under any other organic standard, and that feeding non-organic feed to livestock is generally prohibited under organic management (except in the case of feed shortages or catastrophic events), it is
b)	~~case of the~~ The use of non-organic, non-GE refined sugar, ~~the operator shall~~ <u>(in compliance with Clauses 1.4 and 1.5) is permitted under the condition that the operator:</u>	

	1) maintain and document appropriate practices to prevent the mixing of organic and non-organic feeds in honey supers; ~~and~~ 2) develop <u>and provide</u> a plan to ~~reduce, and potentially eliminate,~~ <u>replace</u> the use of non-organic, non-GE in the <u>operation with organic sugar, and</u> <u>3) feed a minimum of 5% of hives with organic sugar or organic honey by September 1, 2028. Operators shall note in their organic plan the potential impact of the use of organic sugar or honey, particularly on bee health and honey production.</u> c) Feeding shall only occur between the last honey harvest and 15 days before the start of the next nectar or honeydew flow-period. ~~NOTE Article 7.1.11.1 will be reviewed by 2025.~~ Note: Subclauses 7.1.11.1 and 7.1.11.2 will be reviewed in 2031.	proposed to require that a minimum of 5% of hives under organic management be fed exclusively with organic honey or organic sugar during the winter months. The aim of this new requirement is to gradually introduce organic feeding, enabling beekeepers to observe its impact on their operations and develop new sources of supply for organic sugar.
7.1.11.2	~~Feed Sugar (organic or non-organic)~~ shall not be ~~provided less than~~ supplied within 30 days ~~before~~ of the harvest of honey. <u>Organic honey from the farm is permitted at all times.</u> <u>NOTE: Paragraphs 7.1.11.1 and 7.1.11.2 will be reviewed in 2030.</u>	
7.1.12	Colony management	
7.1.12.1	Hives shall be clearly and individually identified, and shall be monitored regularly, that is, at one- to two-week intervals, depending upon the colony, weather conditions and time of year.	
7.1.12.2	Wing clipping of queen bees is prohibited.	
7.1.12.3	Bees shall be removed from hives with bee escape boards, shaking, brushing and forced-air blowers.	
7.1.12.4	Plant-based materials that have not been treated with prohibited substances (see 1.5) may be used in bee smokers.	
7.1.12.5	Annual destruction of bee colonies, following nectar flows, is prohibited.	
7.1.13	Hive construction	

7.1.13.1	Hives shall be constructed of and maintained with natural materials, such as wood and metal. Pressure-treated lumber or particleboard, wood preservatives or lumber treated with prohibited substances are not permitted.	
7.1.13.2	Exterior surfaces of the hive may be painted with non-lead-based paints.	
7.1.13.3	If dipped in organic beeswax, plastic <u>comb</u> foundation is permitted.	Plastic foundations are allowed, even if they are not coated. But if they are coated, they must be dipped in organic beeswax.
7.1.14	Health care	
7.1.14.1	Preventative health care practices shall be established and maintained, including the selection of bee stocks resistant to prevalent pests including mites and diseases; the selection of hive locations considering site-specific conditions; the availability of sufficient pollen and honey; the renewal of beeswax; the regular cleaning and disinfection of equipment; and the destruction of contaminated hives and materials when appropriate for pest management.	
7.1.14.2	The operator shall promote strong, healthy colonies. Management practices may include: merging weaker, albeit healthy, colonies; renewing queens, if necessary; maintaining adequate hive density; inspecting colonies systematically; and relocating diseased colonies to isolated areas.	
7.1.15	Managing pests including insects and diseases	
7.1.15.1	The operator shall be a knowledgeable beekeeper who is familiar with the life cycle and behaviour of bees and related disease-causing organisms, parasitic mites and other pests. In the presence of such pests, every effort shall be made to restore the health of a colony.	
7.1.15.2	Every effort shall be made to select and breed queen bees for resistance to diseases and parasites.	
7.1.15.3	Comb foundation shall be obtained from beeswax within the operation or, ~~if commercially available,~~ from other organic sources.	All materials used in the hive must be from organic sources.
7.1.15.4	Pests (including diseases) shall be controlled with management methods or modified equipment.	

7.1.15.5	Botanical compounds may be introduced into the hive provided that such remedies are listed in Table 5.3 of CAN/CGSB-32.311, and are not used within 30 days of nectar flow or when honey supers are on the hive.	
7.1.15.6	Therapeutic applications of substances to control pests (including parasites and diseases) listed in Table 5.3 of CAN/CGSB-32.311 are permitted. <u>These applications must be discontinued 14 days before harvesting the hive products.</u>	Many beekeepers treat hives with formic acid several times during the beekeeping season in order to control varroa mites, and thereby keep the colony alive. Health Canada states that "Maximum residue limits (MRLs) are not required for formic acid." Non-synthetic formic acid can be found in nature; it causes the sting from ants and stinging nettles, and can even be found at low concentrations in wild honey.
7.1.15.7	Allopathic drugs (for example, antibiotics) are prohibited. However, where the imminent health of the colony is threatened, oxytetracycline is permitted (See <i>Antibiotics, oxytetracycline</i> in Table 5.3 of CAN/CGSB-32.311). Before treatment, hives and colonies shall be removed from the foraging area and taken out of organic production to prevent the spread of antibiotics within the apiary. Treated hives (containers present during treatment) along with the bees present during treatment (excluding queens) shall be placed in isolation and undergo a 12-month transition period. Wax present in the hives during treatment shall not be marketed as organic.	
7.1.15.8	Destroying the male brood is only permitted to contain infestation with varroa mites.	
7.1.16	Extraction, processing and storage	
7.1.16.1	Extraction of honey from a comb with live brood is prohibited.	
7.1.16.2	The quality and organic integrity of honey and other products of apiculture (see 7.1.1) shall be preserved and protected as specified in 8.1.	
7.1.16.3	Surfaces in direct contact with honey shall be constructed of food-grade materials or coated with beeswax.	

7.1.16.4	Heating of honey for extraction shall not exceed 35 °C (95 °F) and the decrystallization temperature shall not exceed 47 °C (116.6 °F). If organic honey is heated above those temperatures, then it can only be used as an ingredient in a multi-ingredient product.	
7.1.16.5	Gravitational settling shall be used to remove debris from extracted honey. Sieves are permitted for removal of residual debris.	
7.1.16.6	Honey shall be packaged in airtight containers.	
7.1.16.7	Facility cleaning, sanitation and pest management are subject to the requirements in 8.2 and 8.3.	

7.2 Maple products

7.2		Rationale
7.2.1	The standards for maple production also apply to syrup production in other tree types, such as birch.	
7.2.2	Organic maple products shall be from production units managed in accordance with this standard.	
7.2.3	This standard applies to all stages of production and preparation — the maintenance and development of the sugar bush, collecting and storing sap, converting sap to syrup, making products out of syrup, washing and sterilizing equipment, and storing finished products.	
7.2.4	The production of maple syrup shall be characterized by good management practices of the sugar bush and its ecosystem. Development and maintenance shall focus, over the long term, on preservation of the sugar bush ecosystem and improvement of tree vigour.	
7.2.5	Tapping practices shall minimize risk to the health and longevity of the trees.	
7.2.6	Equipment and techniques used to collect and store sap shall lead to a prepared product of the highest possible quality. Equipment shall be in good condition, shall be composed of materials suitable for use in the manufacture of food products, and shall be used according to the manufacturer's instructions.	
7.2.7	During conversion of sap to syrup, the sap can take on the odour of anything it comes into contact with. Therefore, care shall be taken to avoid denaturing the product during preparation. The use of technology, such as magnetization, that is likely to alter the intrinsic qualities of the product is prohibited.	
7.2.8	Transition This standard shall be fully applied on a production unit for at least 12 months before the harvest of sap may be considered organic. Prohibited substances shall not have been used for at least 36 months preceding the first harvest. Parallel production is prohibited.	
NOTE	Part 13 Organic Products of the <i>Safe Food for Canadians Regulations</i> requires that the application for the organic certification of maple products be filed at least 15 months before the day on which the food is expected to be sold.	
	During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before maple products may be eligible for certification and one inspection, during production, in the year maple products are eligible for certification.	

7.2.9	Sugar bush development and maintenance	
7.2.9.1	Plant diversity The ~~o~~Operator shall ~~must~~ encourage ~~species a~~ diversity of plant species in the sugar bush, in particular, ~~companion species to tapped maple trees.~~ in the sugar bush ~~maple,~~ particularly companion species to ~~tapped maple trees.~~ <u>should represent a minimum of 15% of the volume of wood within Companion species shall be encouraged by aiming for a minimum percentage of 20% of all trees in the sugar bush and shall therefore be given preference if they represent less than 20% of this volume.</u> ~~If companion species represent less than 15%, their growth shall be encouraged.~~ ~~Systematic clearing of Undergrowth and brush shall be protected is prohibited, even if growth is abundant.~~ <u>Partial cutting of</u> ~~However,~~ this vegetation <u>is authorized for the creation of</u> ~~may be removed to clear paths and to facilitate movement.~~ <u>Gap cutting is permitted if the overabundance of native understory vegetation prevents the establishment of maple regeneration.</u>	Diversification of tree species in maple bushes is a protective strategy against invasive species, since parasites and invaders (insects, plants) often target a single species. A diverse stand is therefore more resistant to biological invasions. Increasing the requirement of plant species enables maple syrup producers to protect their operations while maintaining a biodiversity that is beneficial to the forest ecosystem. See Biodiversity in the sugar bush https://mailchi.mp/organicfederation/tcmtg-diverseschanges
7.2.9.2	Thinning When it is necessary or when required by the forest administrator, thinning of the sugar bush shall be performed according to current good management practices, both public and private, and shall be evenly distributed throughout the sugar bush.	
7.2.9.3	Tree protection If livestock (for example, beef or dairy cattle, pigs or domestic deer) could harm sugar trees, livestock access to the bush shall be prohibited in order to preserve plant diversity and the growth of young trees. Pipeline networks shall be installed in a manner that shall not injure nor harm the growth of trees.	
7.2.9.4	Fertilization	

	Fertility recommendations and applications shall be based on observed, diagnosed and documented deficiencies. Soil amendments permitted for maple production include wood ash, agricultural lime and fertilizers listed in Table 4.2 (Column 1) of CAN/CGSB-32.311.						
7.2.9.5	Pest control Knowledge and understanding of pests (in the sugar bush and preparation facility), their habits, and solutions that maintain the bush ecosystem, are the preferred basis for pest control. Within the sugar bush, substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 are permitted for control of pests including diseases and insects. Within preparation facilities, mechanical and sticky traps are permitted for rodents and other destructive pests, as are natural repellents listed in Table 8.1 of CAN/CGSB-32.311. If an infestation occurs, vertebrate pests may be hunted. It is prohibited to use poisons of any kind to control vertebrate pests.						
7.2.10	Tapping						
7.2.10.1	Tree diameter and number of taps Table 8 indicates the maximum number of taps a healthy maple can support, based on its chest height diameter (CHD); CHD is the diameter measured at a height of 1.3 m (4.3 ft) above the soil surface. A tree shall not have more than <u>two</u> ~~three~~ tap holes.	Debates over the number of sugar maple taps per tree touch on two essential aspects. Productivity shows that a second tapping significantly increases sap yield, while a third brings few additional benefits. As for tree health, multiple taps close together can compromise vitality in the long term, even if new spouts reduce damage. Standards are evolving: with Quebec adopting a minimum diameter of 23 cm for one tap and New Brunswick 24 cm. The general trend is towards a limit of two taps per tree, offering an optimal balance between yield and preservation.					
	Table 8 — Maximum number of taps per healthy maple tree <table><tr><th>Diameter measured at a height of 1.3 m (4.3 ft) above the soil surface</th><th>Maximum number of taps</th></tr><tr><td>Less than <u>19.9</u> ~~20~~ cm (8 in.)</td><td>0</td></tr><tr><td>20 to <u>23</u> ~~40~~ cm (~~8 to 16 in.~~) (8 to 9 in) (applies to operators who have applied for certification or that were certified before the date of publication of this standard)</td><td>1</td></tr></table>		Diameter measured at a height of 1.3 m (4.3 ft) above the soil surface	Maximum number of taps	Less than <u>19.9</u> ~~20~~ cm (8 in.)	0	20 to <u>23</u> ~~40~~ cm (~~8 to 16 in.~~) (8 to 9 in) (applies to operators who have applied for certification or that were certified before the date of publication of this standard)
Diameter measured at a height of 1.3 m (4.3 ft) above the soil surface	Maximum number of taps						
Less than <u>19.9</u> ~~20~~ cm (8 in.)	0						
20 to <u>23</u> ~~40~~ cm (~~8 to 16 in.~~) (8 to 9 in) (applies to operators who have applied for certification or that were certified before the date of publication of this standard)	1						

	~~40 to 60 cm (16 to 23.6 in.)~~ 23.1 to 39 cm (9 to 16 in) <u>(applies to new operations certified (applies to operators who have applied for certification after the date of publication of this standard and to expansions installed after the date of publication of this standard, and is mandatory for all operations after 2035)</u> 1 39.1 cm and greater (16 in and more) <u>(applies to all operations from the date of publication of this standard).</u> 2

7.2.11	Collection and storage of maple syrup	
7.2.11.1	Spouts Spouts shall be made of food-grade materials.	
7.2.11.2	Vacuum collection system All parts of the collection system that may come in contact with sap shall be made of materials suitable for use in the manufacture of food products. Pumps shall be well-maintained and used oil shall be collected and disposed of so as to not contaminate the environment.	
NOTE	It is recommended to recycle all materials of the components of the collection system.	
7.2.11.3	Storage All equipment that may come into contact with sap or its concentrate and filtrates, such as storage tanks, connections and transfer systems, shall be made of materials suitable for use in the manufacture of food products. This also applies to any surface coatings, such as paints and soldered joints. The use of air injection systems with a forced air blower in sap before, during or after its conversion to syrup is prohibited.	
7.2.11.4	Collecting with buckets Pails or buckets may be made of aluminum or plastic. Galvanized steel is prohibited. Buckets shall be covered with a lid. The standards that apply to storage tanks also apply to reservoirs used to transport collected sap.	
7.2.12	Conversion of sap to syrup	
7.2.12.1	Sap filtration Sap shall be filtered before processing. The filtration shall not compromise the sap's inherent qualities.	
7.2.12.2	Sap sterilization Sterilization of sap with ultraviolet radiation or by adding a sterilizer prior to conversion is prohibited.	
7.2.12.3	Osmosis extraction and membranes ~~Sap may be concentrated via reverse osmosis.~~ <u>The membrane concentration technique is acceptable for treating sap.</u> Only reverse osmosis and nano-filtration (ultra-osmosis) membranes are allowed. In	Currently, products permitted by the 2020 COS can cause corrosion in new generation equipment. The objective of the change is

	the off-season, osmosis membranes ~~shall can~~ be stored <u>with filtrate or potable water in filtrate, the equipment or potable water</u>, in a hermetically sealed container ~~and kept in a frost free location.~~ Sodium metabisulfite (SMBS), potassium metabisulfite (PMBS) <u>or citric acid</u> may be added to the filtrate or potable water to prevent ~~mould~~ microbial growth. If <u>sodium metabisulfite (SMBS) or potassium metabisulfite (PMBS)</u> is used, the membrane ~~shall~~ <u>must</u> be rinsed before the next use with a volume of water equal to the hourly capacity of the membrane (for example, 2271 L [600 US gal/h] of water for a 2271 L/h (600 US gal./h) membrane). <u>When citric acid is used, the membrane shall be rinsed before the next use with a volume representing at least 40 times the residual dead volume of the equipment.</u> Off-site storage of the membrane (for example, by the membrane supplier) shall be documented. Food-grade lubricants are allowed as a lubricant for equipment used in maple production.	twofold: to reduce the use of chemical products and to enable effective cleaning during the season, particularly during extended periods between two sap runs. The approval of less corrosive alternatives, such as citric acid (already approved for organic maple syrup production and listed in 7.3 of CAN/CGSB-32.311 2020), allows for safe clean-in-place operations while preserving the organic integrity of the facilities.
7.2.12.4	Evaporator Evaporator pans shall be made of stainless steel. They shall be tungsten-inert gas (TIG) welded or soldered with tin-silver solder. Pans made of galvanized steel, copper, aluminum or tin-plated steel are prohibited. Air and environmental quality shall be controlled in the evaporator room. Air injection systems with a forced air blower are prohibited in evaporator pans.	
7.2.12.5	Defoamers ~~Only plant-based~~ <u>The level of foam can be controlled using an organic anti-foaming agent designed for this purpose, or by using organic vegetable oils with no allergenic potential. These products that have not been chemically altered are permitted. Examples include</u> shall be used as production aids. <u>Wood from Pennsylvania maple wood (<i>Acer pennsylvanicum</i>, also known as striped maple or moose wood) and organic vegetable oils, except those with allergenic potential. wood) from organic operations may also be used. As last measure, if the use of one of these products proves ineffective, a food-grade anti-foaming agent without genetically modified components may be used; all anti-foaming agents used shall be documented.</u>	Manufacturers of defoamers must comply with all the requirements of the organic standard, not just those for maple syrup production. This amendment alleviates the requirements specific to maple syrup production since these are already covered by the standard.
7.2.12.6	Syrup filtration and other treatments Organic maple syrup shall not be refined by artificial means, bleached or lightened in colour. Any manipulation on maple syrup carried out in order to mask defects in flavour, mainly that of the bud, is prohibited. Simple filtration via the following methods is permitted: through cloth or paper, a filter	

	press or calcined diatomaceous earth; or use of silica powder or clay dust with a filter press to remove suspended solids. The use of air injection systems with a forced air blower in maple syrup is prohibited.																				
7.2.13	Cleaning of equipment for use in syrup production																				
7.2.13.1	Maple sap collection systems, tubing and tanks Cleaning shall take place before or after each production season. Permitted sanitation substances include:																				
	<table><tr><td colspan="4">Table 9 – Permitted sanitation substances for maple</td></tr><tr><td></td><td></td><td><u>For all equipment except tubing</u></td><td><u>For tubing only</u></td></tr><tr><td>In-season</td><td>For all equipment except tubing</td><td> ~~• Sodium hypochlorite~~ • Product based on acetic acid, hydrogen peroxide or peracetic acid (followed by rinsing with drinking water or filtrate) </td><td><u>None</u></td></tr><tr><td rowspan="2">Off-season</td><td>For all equipment including tubing</td><td> ~~• Sodium hypochlorite~~ • Fermented sap <u>from the operation</u> • Product based on acetic acid, hydrogen peroxide or peracetic acid ~~Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.~~ </td><td> • <u>Isopropyl alcohol</u> • <u>Fermented sap from the operation</u> • <u>Product-based on acetic acid, hydrogen peroxide or peracetic acid</u> </td></tr><tr><td>For tubing only</td><td> ~~• Isopropyl alcohol~~ ~~Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.~~ </td><td></td></tr></table> Other substances, including substances based on phosphoric acid, are prohibited. <u>Cleaning shall be followed by rinsing with drinking water, filtrate or sap before restarting the operations</u>	Table 9 – Permitted sanitation substances for maple						<u>For all equipment except tubing</u>	<u>For tubing only</u>	In-season	For all equipment except tubing	~~• Sodium hypochlorite~~ • Product based on acetic acid, hydrogen peroxide or peracetic acid (followed by rinsing with drinking water or filtrate)	<u>None</u>	Off-season	For all equipment including tubing	~~• Sodium hypochlorite~~ • Fermented sap <u>from the operation</u> • Product based on acetic acid, hydrogen peroxide or peracetic acid ~~Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.~~	• <u>Isopropyl alcohol</u> • <u>Fermented sap from the operation</u> • <u>Product-based on acetic acid, hydrogen peroxide or peracetic acid</u>	For tubing only	~~• Isopropyl alcohol~~ ~~Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.~~		Sodium hypochlorite can no longer be used during the production season. Even after rinsing, chemical residues (chlorates) can remain on surfaces. These residues become problematic when maple sap is heated because they concentrate as the water evaporates. To guarantee syrup quality and safety, new rules have been introduced concerning authorized cleaning products and rinsing methods.
Table 9 – Permitted sanitation substances for maple																					
		<u>For all equipment except tubing</u>	<u>For tubing only</u>																		
In-season	For all equipment except tubing	~~• Sodium hypochlorite~~ • Product based on acetic acid, hydrogen peroxide or peracetic acid (followed by rinsing with drinking water or filtrate)	<u>None</u>																		
Off-season	For all equipment including tubing	~~• Sodium hypochlorite~~ • Fermented sap <u>from the operation</u> • Product based on acetic acid, hydrogen peroxide or peracetic acid ~~Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.~~	• <u>Isopropyl alcohol</u> • <u>Fermented sap from the operation</u> • <u>Product-based on acetic acid, hydrogen peroxide or peracetic acid</u>																		
	For tubing only	~~• Isopropyl alcohol~~ ~~Cleaning shall be followed by rinsing with drinking water, filtrate or sap before the next season.~~																			
7.2.13.2	Osmosis extraction and membranes																				

	Reverse osmosis units and membranes shall first be cleaned using filtrate, according to the time and temperature recommended by the manufacturer.	
a)	Cleaning during the production season:	
1)	If after rinsing with warm filtrate (in an open or closed circuit), a Pure Water Permeability (PWP) test indicates that controlled efficiency is less than 85% of the controlled efficiency recorded at the beginning of the season, a caustic soda-based soap (NaOH) recommended by the manufacturer for membrane cleaning is permitted.	
2)	If PWP test results stay below 75% of the efficiency recorded at the beginning of the season after the use of a NaOH-based soap, citric acid, <u>acetic acid, peracetic acid and hydrogen peroxide are is</u> permitted.	Cleaning products authorized for use in organic production are reviewed to take account of changes in equipment and to ensure they are maintained without compromising the integrity of organic products. As equipment becomes more and more efficient, cleaning methods need to adapt. Citric acid, acetic acid, peracetic acid and hydrogen peroxide are being allowed for cleaning reverse osmosis units because they are already considered safe enough to be used for other cleaning stages in maple syrup production.
3)	Cleaning or a cleaning sequence with substances permitted in 7.2.13.2 a) 1) and 2) shall be followed by a rinse with clean filtrate or potable water. The rinse volume shall be greater than or equal to 40 times the dead (residual) volume of the unit (total volume of the unit and its components after it is drained).	
4)	Daily efficiency readings and calculations shall be recorded. Membrane flush water shall be disposed of in a manner that does not harm the environment.	
b)	~~Cleaning after the production season: Off-season treatment of membranes with citric acid is permitted. Following the citric acid treatment, the use of acetic acid, peracetic acid, and hydrogen peroxide is~~	See rationale for 7.2.13.2 a2).

	~~permitted. For cleaning after the production season, off-season treatment of membranes with citric acid, acetic acid, peracetic acid and hydrogen peroxide is permitted.~~	
7.2.13.3	Evaporators At any time, evaporators may be cleaned with potable water or filtrate adding, if necessary, <u>caustic soda, citric acid, acetic acid or products based on acetic acid, hydrogen peroxide or peracetic acid.</u> ~~Fermented sap may also be used at the end of the season. Double rinsing is mandatory if acetic acid, or if products based on acetic acid, hydrogen peroxide or peracetic acid, are used. and the second rinsing shall be done with hot water or hot filtrate or hot sap.~~ <u>Cleaning with fermented sap from the operation followed by a double rinse can also be used at the end of the season. The second rinse should be strictly with hot water or filtrate.</u>	Citric acid is already authorized as a cleaning product in organic standards (Clause 7.3), but not specifically for cleaning evaporators at the end of the season. This issue is important on several levels. For producers, it would allow them to use the latest equipment while maintaining their organic certification. From an environmental perspective, citric acid is a natural cleaning solution with a low environmental impact. This is about extending the use of an already approved product to a new application, to adapt to technological developments in the sector.
7.2.13.4	<u>Reusable bulk storage containers</u> <u>Bulk maple syrup storage containers may be rinsed at any time with potable water or filtrate.</u> <u>If washing, sanitizing or deodorizing is required, baking soda or a mixture of acetic acid, hydrogen peroxide and peracetic acid may be used.</u> <u>A double rinse is mandatory after using a sanitizing or deodorizing product.</u>	The 2020 COS covers in detail the cleaning of manufacturing equipment, including maple sap collection systems, tubing and tanks, the osmosis extraction and membranes, as well as evaporators. It also specifies the list of substances prohibited for processing. However, it does not provide any guidelines regarding the cleaning of reusable containers used for storing maple syrup. The proposed modification

		therefore enhances the standard by filling this important gap, thus ensuring compliance with organic requirements at all stages of production.
~~7.2.13.4~~ <u>7.2.13.5</u>	Prohibited substances Substances other than those specified in 7.2.13.1, 7.2.13.2 and 7.2.13.3 are prohibited, including those with phosphoric acid content.	Number change.
7.2.14	Food additives and processing aids Transformation of syrup into maple products (for example, maple butter, sugar and taffy) shall comply with this standard. Boiling with microwaves is prohibited. No other substances shall be added to syrup or maple products during production or preparation, whether to improve the taste, texture or appearance. Cones may be used if they constitute less than 5% of the weight of the final product	
7.2.15	Transport, storage and conservation Maple syrup not intended for immediate consumption shall be stored in food-grade containers that do not alter the chemical composition or quality of the syrup. Permitted containers include barrels made of stainless steel, fibreglass, food-grade plastic or metal with an interior food-grade coating. Reusing single-use barrels is prohibited. Barrels shall carry a unique identification number that is used in all related records. The barrel fill-date shall be recorded.	
<u>7.2.16</u>	<u>Preparation of maple sap</u>	Maple syrup production has been modernized with the creation of centralized boiling centres. These facilities enable maple sap from several producers to be processed in a single location. To maintain organic certification, these centres must comply with specific cleaning and traceability requirements.
<u>7.2.16.1</u>	<u>General</u> <u>Operations that prepare organic and non-organic maple sap in parallel shall have two separate production lines, from sap collection to barrel filling. Equipment or utensils used for non-organic production may not be used for organic production to prevent contamination of organic products.</u>	
<u>7.2.16.2</u>	<u>Preparation specifications</u> <u>The preparation of organic maple syrup shall be carried out in accordance with the requirements of Clause 7.2. Prohibited products may not be present or used on the operation.</u>	

7.3 Mushroom production

	2020 COS with Tracked Changes	Rationale
7.3	<u>Mushroom production and mushroom products</u> All relevant subclauses in this standard apply to mushroom production where this subclause has no specific requirements, including 5.1.3, 5.1.4, 5.1.6, and 5.1.7. For outdoor production, 5.2.2 also applies.	This clause name has changed to incorporate all possible mushroom products. Not only mushrooms and spawn are produced, but the mycelium may also be harvested and made into products such as teas and powders.
7.3.1	Production sites and structures For organic mushrooms or mushroom products, the operator shall manage production units in a manner that ensures substrates and mushrooms do not come into contact with prohibited substances. Substrates shall be produced in accordance with this standard and applicable entries in Table 4.2 (Column 1) of CAN/CGSB-32.311 such as Composting feedstocks and Compost produced on the production unit:	
a)	For indoor facilities, organic mushrooms shall not come into contact with prohibited substances that would compromise the integrity of the crop.	
b)	For mushrooms grown in soil, prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.	
c)	For new installations or replacement purposes, lumber treated with prohibited substances shall not be used in structures, containers or other surfaces that come into contact with the growth substrate or mushrooms.	
7.3.2	Substrates and growth media	
7.3.2.1	Wood substrates	

	Logs, sawdust or other wood-based materials used as substrates shall come from wood, trees or logs that have not been treated with prohibited substances.	
7.3.2.2	Manure Subclause 5.5.1 applies to manure (including any non-organic agricultural substances in the manure) used in growth substrates. Manure shall be composted according to the requirements for ~~soil amendments outlined Compost, Compost from off-farm sources or Compost produced on the farm in~~ Table 4.2 of CAN/CGSB-32.311.	Provided more clarity.
7.3.2.3	~~Other agricultural~~ Agricultural substances ~~If they are not composted, agricultural~~ Agricultural substances, such as straw, ~~hay or grain used as growth substrate or feather meal~~, shall be from organic sources. If organic sources are not commercially available, non-organic sources may be used, provided that they are composted according to the requirements for ~~soil amendments outlined Compost, Compost from off-farm sources or Compost produced on the farm in~~ Table 4.2 (Column 1) of CAN/CGSB-32.311.	Provided more clarity.
7.3.3	Spawn Organic spawn (seed) shall be used (see definition in Clause 3). Spawn grown or treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 may be used if organic spawn is ~~not~~ <u>neither</u>: a) available from within the production unit; b) commercially available. <u>To be considered organic spawn, spawn shall be propagated from organic mycelium and produced on organic agricultural substrates, wood substrates or manure (as defined in subclause 7.3.2 of this standard).</u>	The clause now addresses the requirement when spawn (mushroom 'seed') is the output of the operation (i.e., the organic product for certification). In other words, it now states what is required if the operation wants to sell organic spawn on the retail market.
7.3.4	Crop pest control and sanitation Preventative pest control measures shall include the following:	
a)	removal of infected materials. Infected mushroom strains shall be burned, moved at least 50 m (164 ft) from a production site (if, for example, the diseased logs are kept for research), or disposed of as recommended by good management practices;	

b)	sanitation with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311;	
c)	using cultivation sites that are free of debris from understory, diseased trees and trees infected by other pests;	
d)	cleaning and maintenance of equipment with sanitizers and disinfectants listed in Table 4.2 (Column 2) of CAN/CGSB-32.311.	
7.3.5	Mushroom product preparation Wherever organic product preparation takes place, Clauses ~~Subclause~~ 8.1 and 8.2 apply.	
7.3.6	Facility pest management Subclause 8.3 applies to pest management practices in and around mushroom facilities.	

7.4 Sprouts, shoots and microgreens production

		Rationale
7.4	Sprouts, shoots and microgreens production ~~Subclause 7.4 applies to crops that are harvested within 30 days of imbibition, either to be consumed with roots attached (e.g., sprouts and nanoshoots) or to be cut from the roots for consumption (e.g., shoots, living greens and microgreens). Subclause 7.4 does not apply to whole head products (e.g., heads of lettuce, mini cabbage).~~ ~~Sprouts, shoots, and microgreens may be produced in water or in a growing media whether they are grown in a growth chamber or vessel, greenhouse or other structures used to grow crops.~~	
7.4.1	~~Organic seed shall be used.~~ <u>Clause 7.4 applies to crops that are harvested within 30 days of imbibition, either to be consumed with roots attached (e.g., sprouts and nanoshoots) or to be cut from the roots for consumption (e.g., shoots, living greens and microgreens).</u>	
Note	~~A water monitoring program should be in place to ensure water is potable.~~	
7.4.2	~~Artificial lighting is permitted to supplement or replace natural light.~~	

	<u>Clause 7.4 does not apply to whole head products (e.g., heads of lettuce, mini cabbage).</u>	
7.4.3	~~Inert containers made of stainless steel and food-grade plastic are permitted in both water and growing media production systems.~~ <u>Sprouts, shoots, and microgreens may be produced in water or in a growing media, whether they are grown in a growth chamber or vessel, greenhouse or other structure used to grow crops.</u>	
7.4.4	~~Containers made of untreated plant-based materials (for example: burlap, coconut coir, fibre) are prohibited in water production systems, but are permitted in growing media production systems.~~ <u>Organic seed shall be used.</u>	
Note	A water monitoring program should be in place to ensure water is potable.	
7.4.5	~~Fertilizers in all stages of growing and harvesting are prohibited in water production systems.~~ <u>Artificial lighting is permitted to supplement or replace natural light.</u>	
7.4.6 7.4.3	Inert containers made of stainless steel and food-grade plastic are permitted in both water and growing media production systems.	
7.4.7 7.4.4	Containers made of untreated plant-based materials (for example burlap, coconut coir, fibre) are prohibited in water production systems, but are permitted in growing media production systems.	
7.4.8 7.4.5	Fertilizers in all stages of growing and harvesting are prohibited in water production systems.	
7.4.9 7.4.6	When growing sprouts, shoots or microgreens in a growing media, substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 are permitted as the growing media and for crop nutrition. The physical structure of the growing media shall include both a mineral fraction (sand, silt or clay, excluding perlite and vermiculite) and a biological fraction.	
7.4.10 7.4.7	Substances used for cleaning or sanitation of seed shall be limited to substances listed in Table 4.2 (Column 2) or Table 7.3 of CAN/CGSB-32.311.	
7.4.11 7.4.8	When growing sprouts, shoots or microgreens the operator shall: a) use reusable and recyclable containers and flats whenever possible;	

	b) reuse or recycle growing media whenever possible; c) only use substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 if crop production aids are required; d) use appropriate equipment cleaners, disinfectants and sanitizers listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311.	
7.4.12	Sprouts, shoots and microgreens product preparation	
~~7.4.9~~	Wherever harvested organic product preparation takes place, 8.1 and 8.2 apply.	
7.4.13	Facility pest management	
~~7.4.10~~	Clause 8.3 applies to pest management practices in and around facilities.	

7.5 Crops Grown in Structures or Containers (previously known as Greenhouse crops)

		Rationale
7.5.1	Clause 7.5 applies to: a) all organic crops grown in containers (indoors or outdoors). Containers include production systems that limit root contact with native soil, such as crops grown in pots, troughs and plastic-lined beds, etc.; b) in-ground crops that are grown using supplemental lighting, heating or CO2 enrichment within a structure, such as a greenhouse, tunnel (high or low), hoophouse, etc.	The preamble to 7.5 now outlines which subclauses in 310 are applicable to 7.5, with reference to clause 5 because several subclauses are not relevant to crops grown in containers. Also, some repetitive clauses in 7.5 that appear in clause 5 (e.g., 7.5.10 and 7.5.11) were removed.
7.5.2	Clause 7.5 does not apply to: a) Sprouts, Shoots or Microgreens (<u>covered in</u> Clause 7.4); b) in-ground crops grown in a structure, such as a cold frame, caterpillar tunnel, etc., without supplemental lighting, heating or CO2 enrichment; c) crops grown under row cover, insect netting or bird netting (covered in Clause 5).	
<u>7.5.3</u>	All relevant subclauses in this standard apply to crops grown in structures or containers where this subclause has no specific requirements, including <u>Clauses 1 to 4, and subclauses 5,1,1, 5.1.2 (for in ground</u>	

	operations) and subclauses 5.1.3, through 5.9, but excluding greenhouse container systems from 5.1.8 5.1.4, 5.1.5, 5.1.6, and 5.1.7. <u>Additional exceptions for container operators are as follows:</u> <u>a) crop rotations as part of a soil building program (subclause 5.4.2) are not required;</u> <u>b) mechanical tillage and cultivation practices as outlined in subclause 5.4.5 are not applicable; and,</u> <u>c) the requirement in subclause 5.4.4 with regards to the organic matter produced on the operation is superseded by the allowance for disposal in subclause 7.5.12 b 1); and, if manure is not used, subclause 5.5.1 does not apply.</u>	
7.5.4 ~~7.5.1~~	In a permanent, in-ground soil system, prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.	
7.5.5 ~~7.5.2~~	Hydroponic and aeroponic productions are prohibited.	
7.5.5.1 ~~7.5.2.1~~	The soil used in a container system shall <u>support and promote microorganism and macroorganism populations that contribute, like a living soil in the field, to nourishing plant via its roots. If necessary, the soil can be inoculated with non-genetically engineered microorganisms (see Clause 1.4a) of this standard and Table 4.2 Microorganisms and microbial products of CAN/CGSB-32.311). The soil shall:</u> a) not contain prohibited substances (see <u>Clause 1.5 of this standard</u>); b) be composed of substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311; c) contain a mineral fraction (sand, silt or clay, <u>that excludes excluding</u> perlite and vermiculite) <u>that makes up at least 2% of the soil mix as measured by dry weight or volume (whichever measure is appropriate) when initially mixed; and biological fraction, which contribute to the physical soil structure;</u> d) <u>contain compost compliant with this standard that makes up at least 10% of the volume of the soil mix. As an exception, be composed of at least 10% by volume of compost (exception: seedling/starter mixes may contain less than 10% compost if needed to ensure adequate germination/rooting); and</u>	This revision reinforces that the foundation of organic production is based on a living, vital soil and that the principle of ecology also applies to container production systems.

	<u>e) a biological fraction that supports root-soil interaction and supports soil health. contain at least 2% by dry weight or volume (whichever unit of measure is appropriate) of minerals (composed of sand, silt or clay, but excluding perlite and vermiculite) at the start of a production cycle when first mixing the soil.</u>	
7.5.5.2 7.5.2.2	The starting and maintained volume of soil in containers shall be proportional to the overall plant size, growth rate, targeted yield, and length of crop cycle. a) For crops grown in structures covered by Clause 7.5, the photosynthetic area comprises the floor area devoted to crop production including the aisles and spaces between plants but not including non-production areas, such as centre or header aisles, service ways, and storage areas, etc. b) For outdoor crops grown in containers, the photosynthetic area comprises the ground area devoted to crop production including the walkways, aisles and spaces between plants, but not including non-production areas, such as field access ways, turn-around areas, hedgerows and storage areas, etc. c) The length of a crop cycle will vary across the country, particularly in unheated structures, and should be taken into consideration when determining the volume of soil required. For perennial crops, the length of the active crop cycle starts at the beginning of seasonal growth and ends at the end of harvest during the same season.	
Note:	For container crops that are difficult to top-dress, for example strawberries, sufficient nutrition should be provided in the soil, prior to the start of the crop, to provide available nutrition continuously for the duration of the crop cycle. When this is not possible, liquid amendments listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 may be used.	
7.5.5.3 7.5.2.3	The minimum amount of soil required for crops not covered by 7.5.5.4 is 2.5 L (0.66 gal) of soil per m ² of photosynthetic area per week of crop production time. The maximum amount of soil required in any case is 60 L/m ² (1.2 gal/ft ²) of photosynthetic area. Crop production time is counted from the start of plant propagation (for example seeding, sticking of unrooted vegetative cuttings, divisions, etc.) until final harvest.	
7.5.5.4 7.5.2.4	The following conditions apply to containerized, semi-indeterminate and indeterminate staked crops (for example, tomatoes, peppers, cucumbers, eggplant): a) additional compost applications shall be included in the fertility program; b) the maintained soil volume shall be at least 60 L/m² (1.2 gal/ft²), based on the photosynthetic area. Interplanting short-lived crops among other crops (e.g., basil among tomatoes) or having multiple crop cycles within a year (i.e., cucumber) do not reduce this 60 L/m² requirement;	

	c) production units existing prior to November 2016 that have been continuously managed organically by the same operator, have not had major renovations, have not changed production area and do not comply with 7.5.2.4 b) are allowed to continue producing staked crops using a soil volume smaller than 60 L/m ² (1.2 gal/ft ²).	
Note:	Part 13 Organic Products of the <i>Safe Food for Canadians Regulations</i> requires that the application for the organic certification of crops grown in greenhouses with a permanent in-ground soil system be filed at least 15 months before the day on which the food is expected to be sold. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before crops may be eligible for certification and one inspection, during production, in the year crops are eligible for certification. This requirement does not apply to greenhouses built on land that is part of an existing organic operation. In the case of an initial application for organic certification of crops grown in containers, the application for certification must be filed within 12 months before the day on which the product is expected to be marketed.	
7.5.6 ~~7.5.3~~	Supplemental heat and carbon dioxide (CO ₂) enrichment are permitted. Supplemental nutrition with substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 is permitted.	
7.5.7 ~~7.5.4~~	~~Sunlight~~ The sun shall be the primary source of light for photosynthesis <u>from sunrise to sunset in for all crops covered by Clause 7.5 on a year-round basis (i.e., growing plants in a predominantly opaque structure is prohibited, even if it has windows which permit some sunlight to reach the plants).</u> <u>In addition to sunlight, supplemental lighting may be used (see subclause 7.5.11 b 2)). As an exception, 100% artificial lighting can be used for annual seedling and transplants that are started by the operation in winter or spring and that will be planted in the same operation may be started by the operation. The exception allows under 100% artificial lighting lights only for these plants for the period from seeding to first final transplanting. The expression "first Final transplanting" means moving a seedling or transplant into its final to another growing medium (in a box, pot, container or into the ground).</u>	This revision allows for operations in northern latitudes to grow under 100% artificial light when sunlight is not available. It also simplifies the exception for transplants.
7.5.8 ~~7.5.5~~	For crops harvested within 30 days of imbibition, organic seed shall be used.	
7.5.9 ~~7.5.6~~	Plants and soil, including potting soil, shall not come in contact with prohibited substances, including wood treated with prohibited substances.	

7.5.10 ~~7.5.7~~	For crop production, the operator shall:	
a)	use reusable and recyclable pots and flats whenever possible;	
b)	use substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 as required;	
c)	use appropriate equipment cleaners, disinfectants and sanitizers listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311.	
7.5.11 ~~7.5.8~~	The following procedures, processes or substances are permitted to:	
a)	clean and disinfect crop structures, equipment which may contact the soil or crop, and plant containers, pots and flats:	
1)	substances listed in Tables 7.3 or 7.4 of CAN/CGSB-32.311; and	
2)	steam-heat sterilization;	
b)	stimulate growth or development:	
1)	substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311; and	
2)	control of daily temperature and light levels;	
c)	prevent and control pests including diseases, insects and other organisms:	
1)	substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311;	
2)	pruning;	
3)	roguing;	
4)	vacuuming;	
5)	temperature manipulation, for example freezing, heating, steaming;	
6)	pest exclusion from greenhouses with air filters, screens or other physical devices; and	
7)	biological control methods.	

7.5.12 7.5.9	~~Soil regeneration and recycling procedures shall be practiced. The following alternatives to crop rotation are permitted:~~ <u>Soil building and health are cornerstones of organic agriculture and hence Clause 5.4 regarding "Soil fertility and nutrient management" of this standard applies to crops grown under Clause 7.5, except that 5.4.5 does not apply to container production as outlined in Clause 7.5.3. In addition:</u> <u>a) in-ground operations shall regenerate their soils in the same fashion as field crop operations;</u> <u>b) in addition to the requirements in 7.5.5, container operations</u> <u>1) shall build permanent soils in their containers reusing their soil for a minimum of three consecutive years. If necessary and with justification the soil may be replaced prior to three years. Spent soil shall be recycled in or outside the operation unless the disposal of used soil is mandatory due to a regulatory directive. to avoid spreading pests (including insects or disease) Container operators have 36 months from the date of publication of this standard to comply with this requirement.</u> <u>2) may grafting of plants onto disease-resistant rootstock, freeze ing the soil in their containers in winter, or regenerate ion the soil by introducing organic matter such as compost or incorporating biodegradable plant mulch (for example, straw or hay).; and partial or complete replacement of greenhouse soil or container soil. Used soil shall be re-used either in the greenhouse, or on another crop, unless the disposal of used soil is mandatory due to a regulatory directive to avoid spreading pests (including insects or disease).</u> <u>3) may dispose of plant debris as necessary.</u>	Most of this revision adds clarity regarding soil health and fertility requirements for container operations without a change in intention. One new requirement has been added: the need for container operators to develop permanent soils in their container systems.
7.5.10	~~Greenhouse crop product preparation~~ ~~Wherever organic product preparation takes place, Clauses 8.1 and 8.2 apply.~~	See rationale in 7.5.
7.5.11	~~Facility pest management~~ ~~Clause 8.3 applies to pest management practices in and around crop facilities.~~	See rationale in 7.5.

7.6 Wild crops

[No changes to this clause.]

7.6.1	An organic wild plant product shall be harvested from a clearly defined area or production unit. The operator shall provide documentation proving that prohibited substances have not been used for at least 36 months before the harvest of an organic crop.
7.6.2	The operator shall prepare an organic plan (see 4.1, 4.2 and 4.3) that includes:
a)	a detailed description of production areas and harvest methods;
b)	management practices that preserve wild species and avoid disturbance of the environment; and
c)	a record keeping system that meets the requirements of 4.4.
7.6.3	Wild products shall be considered organic on the condition that they are harvested in relatively undisturbed or stable natural settings. A wild plant shall be harvested or picked in a manner that promotes growth and production, and does not damage the environment.
7.6.4	The production zone for wild crops shall be isolated from contact with prohibited substances by a clearly defined buffer (see 5.2.2). Harvest sites shall be located more than one kilometre (0.62 mi) from potential sources of environmental contamination, such as golf courses, dumps, sanitary landfill sites and industrial complexes.
7.6.5	Wild crop product preparation Wherever organic product preparation takes place, clauses 8.1 and 8.2 apply.
7.6.6	Facility pest management Clause 8.3 applies to pest management practices in and around crop facilities.

7.7 Organic insects

All the text in Clause 7.7 on insect production is new. We are presenting this section without underlining simply to make the text easier to read.

7.7	Organic insects	Rationale
	Clause 7.7 covers insects, snails, and other terrestrial invertebrates, excluding bees (which are addressed in Section 7.1 Apiculture of CAN/CGSB-32.310). All the relevant elements of clauses 1-6 in this standard shall apply.	
7.7.1	Origin of insects	The clauses relating to the origin of insects reflect the standards for other livestock.
	7.7.1.1 Insects shall: a) be hatched on organic production units; b) be managed organically throughout their lifetime. c) be the offspring of organic parents. As an exception, insects may be the offspring of non-organic parents from outside the operation that have not been treated with prohibited substances after being introduced into the operation. These introduced non-organic parents shall never be sold as organic. Note Low replacement rates for organic insect breeding stock are expected. Operators should maintain their own organic breeding stock.	The offspring of non-organic parents can be considered organic if the insects have hatched in the organic production unit and are under organic management throughout their lives. There is no "commercially available" clause for breeding stock unlike for other livestock (for other livestock, organic producers can only buy non-organic breeding stock if there are no organic animals commercially available). This is because the insect industry is currently very small. But we want to encourage the maintenance of organic breeding insects on the operation.
7.7.2	Insect feed	The requirements for insects reflect, to the most part, the requirements for other livestock. However, cannibalism is an exception: cannibalism regularly occurs, even when insects are adequately fed, so allowance must be made for this natural behaviour.
	7.7.2.1 As per 6.4.1 and 6.4.2 of this standard, the operator shall provide an organic feed ration that meets the nutritional requirements of the species being reared and limits cannibalism.	
	7.7.2.2 Feed, feed additives and feed supplements listed in 6.4.4 of this standard; the following exceptions apply only for insects and only if permitted by CFIA regulations for the end use of the product and to recognize insects' natural consumption of decomposing and waste materials as part of their ecological role in nutrient cycling: a) mammalian or avian slaughter by-products (as referenced in Table 5.2 of CAN/CGSB-32.311) from organic sources and guaranteed free of Specified Risk Materials (SRM) are permitted;	The CFIA has not yet established a clear enforcement on safety issues related to insects as livestock feed or human food, however this will be implemented soon. If there is a chance the insect feed may contain SRM, the onus is on the producer to show that the final insect product is safe for feed for food. A careful consideration of the entire process of rearing insects should identify any potential contaminants that may

	b) feed formulas that contain manure or other animal waste (as referenced in Table 5.2 of CAN/CGSB-32.311) sourced from organic livestock operations are permitted.	be inherent in the insects, the growth substrate or introduced via production and processing steps.
	7.7.2.3 Insects of all ages shall have access to a species-appropriate source of water, whether from a vessel of potable water, environmental humidity, or feed moisture.	Some insect species do not drink water; instead, they obtain the water they need from the humidity of the environment or from moisture in their food.
	7.7.2.4 By exception, 6.4.7 a) of CAN/CGSB-32.310 applies as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions).	The concept of catastrophe is addressed in the food section by referring to 6.74 (about a catastrophic event).
<u>7.7.3</u>	Insect health care	
	7.7.3.1 The operator shall establish and maintain preventative livestock health care practices, including: a) a feed ration sufficient to meet the nutritional requirements of the livestock, as required under 7.7.2.1; b) housing, space allowance and sanitation practices that minimize the occurrence and spread of disease and parasites.	These clauses replicate the preventative health care practices described in section 6 on livestock production.
	7.7.3.2 The operator shall not administer (see definitions in Clause 3): a) antibiotics; b) veterinary drugs, in the absence of illness, other than vaccines; c) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion; d) synthetic parasiticides or anti-microbials; e) health care products other than those listed in Table 5.3 of CAN/CGSB-32.311 and used as annotated.	These clauses replicate the preventative health care practices described in section 6 on livestock production.

	7.7.3.3 Physical alterations of living invertebrates, such as the trimming of wings or removing of legs, are prohibited.	The physical alterations described in 7.7.3.3. are specific to insects.
	7.7.3.4 The method of killing shall ensure rapid death and minimize invertebrate suffering. 7.7.3.5 Medical treatment shall not be withheld from sick or injured insects to preserve their organic status. If methods permitted in organic production fail, all appropriate medications shall be used to restore insects to health. Insects that are treated with a method that is not permitted under organic production shall lose their organic status but may remain breeders in the organic operation.	These clauses replicate the preventative health care practices described in section 6 on livestock production.
<u>7.7.4</u>	Insect living conditions	A general sentence introduces the 'living conditions' section, which covers many aspects of suitable living conditions (e.g., air quality, stress, pain, natural behaviour).
	7.7.4.1 The operator shall establish and maintain stocking densities and living conditions (environment, facilities, air quality and population size) that accommodate the health and natural behaviour of the species; minimize stress, pain, injuries and cannibalism; and meet the needs of the species for exploratory and foraging behaviour. 7.7.4.2 Density requirements may vary depending on many factors, such as the type of production system, species and production stage of the animal. 7.7.4.3 Air quality and living conditions of the insects shall be maintained and based on the needs and metabolic output of each species. The operator shall monitor the temperature, humidity, levels of dust particles and concentration of potentially damaging gases, such as ammonia. 7.7.4.4 Light cycle and light density shall satisfy the specific needs of the species being reared.	The needs of insects change rapidly from hatching to the adult stage and vary between species. An acceptable stocking density is one that minimizes stress and cannibalism while allowing for exploratory and foraging behaviors. Air quality, temperature, humidity, levels of dust particles and ammonia levels need to be monitored given that insects are raised in a closed environment. Light cycle and light density must be suitable for the insects' life cycles.
	7.7.4.5 Land used for outdoor production shall be free of prohibited substances for 36 months prior to use. 7.7.4.6 Facilities shall be designed to prevent the escape of living invertebrates at any stage of development into local natural habitats. 7.7.4.7 Habitat construction materials, equipment, structural components or furnishing elements shall be kept in a reasonable hygienic condition in order to protect the insects' health and allow natural expression of behaviours (jumping, climbing, hiding);	The land requirement has been added for operations where insect boxes are put directly on soil, or if an operator is raising invertebrates such as snails. The need to prevent escape at any stage of development into local natural habitats is derived from the aquaculture standard. Materials used in insect habitats will encourage natural behaviors, such as climbing, hiding and

	a) Wood and other structural materials shall not have been treated with prohibited substances. b) Cardboard, including corrugated cardboard, may be used for structures; cardboard that is waxed or c) impregnated with a fungicide or another prohibited substance is prohibited. d) Glossy paper and paper containing coloured ink are prohibited. e) Bedding or substrate material shall be organic. However, if organic bedding is not commercially available, and if bedding or substrate is required for production, transportation or handling, non-organic bedding is permitted provided it shall not contain, or have been treated with, prohibited substances and shall meet the requirements in 1.4 and 1.5. 7.7.4.8 Frass management practices shall be implemented in a manner that minimizes soil and water degradation. Frass storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water. 7.7.4.9 Clause 8.3 applies to pest management practices in and around insect production facilities.	jumping (though hiding and retreating is not necessary for all insects). Bedding, in its traditional meaning for livestock, is not really needed for insects. Instead, bedding is a substrate on which insects are raised, transported or handled. As with livestock, the prohibition of prohibited substances in bedding is maintained. The clause about storage and handling of frass is added to prevent contamination of water.
	Note: This section will be revised in 2030 to comply with latest industry standards and research.	

8 Maintaining organic integrity during cleaning, preparation and transportation

		Rationale
	<u>This</u> Clause 8 applies to all operations that handle (including packaging and labelling), store or transport organic products for production or processing. During these activities, a central objective is to maintain the inherent organic qualities of the product through strict adherence to the	

	procedures and principles of this standard. Operators are responsible for maintaining organic integrity at all points of the market supply chain, from production through the point of sale to the final consumer.	
8.1	Maintaining integrity	
8.1.1	Preparation materials, such as counters, containers and conveyors, in contact with food shall be clean and of food-grade quality.	
8.1.2	Incidental additives shall not compromise organic integrity:	
a)	<u>active ingredients of hand sanitizers substances, if used on hands that come into direct contact with organic products shall be listed in Table 7.3 of CAN/CGSB-32.311. Synthetic dyes, synthetic fragrances synthetic thickening agents, synthetic suspending agents, synthetic emulsifying agents and synthetic high viscous extenders, such as carbomers, are not permitted;</u>	The proposed revision threads the needle for compliant hand sanitizers, as the previous requirement lacked credibility. Before finalizing this text, it was confirmed that hand sanitizers that meet these requirements are commercially available.
b)	culinary steam, that is, steam used in direct contact with organic products or packaging, shall only contain: 1) substances listed in Tables 6.3, 6.4 or 6.5 of CAN/CGSB-32.311; and/or 2) food-grade cleaners, disinfectants and sanitizers authorized for organic product contact in Table 7.3 of CAN/CGSB-32.311;	
c)	food-contact lubricants shall be listed in Tables 6.3, 6.4 or 6.5 of CAN/CGSB-32.311;	
d)	use of cleaners, disinfectants and sanitizers shall comply with the requirements in 8.2 of this standard.	
8.1.3	Mechanical, physical or biological processes (such as fermentation and smoking) are permitted.	
8.1.4	To prevent commingling, organic products shall be segregated or otherwise protected from non-organic products at all times, for example, during processing, storage, at bulk and unbound stages.	

8.1.5	If a production unit <u>handles or</u> prepares both organic and non-organic <u>ingredients or</u> products: a) organic and non-organic <u>ingredients and</u> products shall not be mixed at any stage of preparation; b) every measure shall be taken to ensure that the organic and non-organic identity of <u>the</u> finished product is maintained; <u>c) organic ingredients and products that are being moved or transferred within the operation shall remain visually identifiable;</u> - e d) operators shall document removal events used to prevent cross-contamination of organic and non-organic production runs; ~~e~~ e) <u>handling or</u> preparation of organic <u>ingredients and</u> products shall be carried out continuously until the run is complete; - e f) organic runs shall be separated by place or time from similar runs ~~preparation of non-~~ organic products; ~~f~~g) organic runs shall be planned in advance to prevent commingling. ~~and~~ ~~g. additional measures are required to prevent accidental commingling of bulk at-risk organic seed or grain with non-organic grain which may contain trace GE contamination:~~ ~~1) Storage bins containing organic crops shall be visibly identified as organic using well-maintained, weather-resistant signage~~ ~~2) When at-risk organic crops are being moved between bulk storage bins (for example, grain drying, lot mixing), temporary signage shall be attached to the wagon or truck to visibly identify the load in transit as organic~~ ~~3) When organic crops are held in bulk bins for drying or roasting, temporary signage shall be attached to the bin to visibly identify the contents as organic~~	This element was fleshed out to clarify segregation of all ingredients as well as products anywhere in the supply chain is required to satisfy the standards. This revision made the 2020 focus on GE redundant because segregation is always required.
8.1.6	Organic product packaging shall:	
a)	maintain organic product quality and integrity; and	

b)	be minimal in a manner that is consistent with 8.1.6 a). Packaging materials that minimize harm to the environment throughout their life cycle are preferred; and	
c)	comply with prohibitions in 1.4 b) and 1.4 e).	
8.2	Cleaning, disinfecting and sanitizing	
8.2.1	Food-grade cleaners, disinfectants and sanitizers listed in Table 7.3 of CAN/CGSB-32.311 may be used as annotated:	
a)	on organic product contact surfaces, which include equipment, storage and transport units;	
b)	in direct contact with organic products.	
8.2.2	Cleaners, disinfectants and sanitizers listed in Table 7.4 of CAN/CGSB-32.311 may be used on organic product contact surfaces. <u>Operators shall document that</u> ~~provided that documentation demonstrates:~~ a) they are used as annotated; and b) removal event(s) <u>are effective and prevent</u> ~~have eliminated the substance(s) from~~ organic product <u>from coming into contact with substances used on surfaces</u> prior to organic production.	Clarification of text.
8.2.3	If substances in Tables 7.3 and 7.4 are ineffective, other cleaners, disinfectants or sanitizers may be used on organic product contact surfaces. <u>Operators shall document,</u> ~~provided that documentation demonstrates the following conditions:~~ a) <u>why the permitted substances were not suitable</u> ~~unsuitable~~ or ineffective for cleaning, disinfecting or sanitizing specific equipment; a) ~~the efficacy of the alternative substance(s);~~ b) <u>that</u> removal event(s) have eliminated the substance(s) from organic product contact surfaces prior to organic production; <u>and</u> c) that effluent discharge was neutralized to minimize the negative impact on the environment.	Revisions were made to 8.2.3 to clarify that the operation must document why cleaning products listed in Table 7.3 or Table 7.4 are inadequate. This revision also eliminates the need for the operator to demonstrate the efficacy of the non-listed alternative they are using. This change was made as it is more important to ascertain why substances included in the tables can't match the task vs assessing efficacy of substances that are not in these tables.

8.2.4	Specific cleaning, sanitation and disinfection requirements in Clause 7 of this standard supersede those specified in Clause 8.2.	
8.3	Facility pest management and post-harvest management	
8.3.1	Good production and manufacturing practices shall be adopted to prevent pests ~~problems~~ Pest management practices and shall involve the following, in descending order: a) the removal of pest habitat and food <u>sources</u>; b) <u>sealing the facility to limit pest intrusion when applicable; and</u> c) ~~b) the prevention of access and~~ <u>using</u> environmental management (for example, light, temperature and atmosphere), to <u>further</u> prevent pest intrusion and reproduction. e) ~~mechanical and physical methods, such as traps;~~ d) ~~lures and repellents, as listed in Table 8.2 of CAN/CGSB-32.311.~~	This revision accomplishes a number of things including, improving the pest prevention requirements, identifying permitted traps, differentiating between glue boards used for rodents versus insects, and outlining when glue boards can be used. A complete ban on glue boards for rodents for humane reasons was evaluated, but it was determined it would decimate the pest control tool box for organic operators too dramatically.
8.3.2	~~8.3.1c) m-~~ <u>Mechanical and physical methods of pest management may be used including: such as traps;</u> a) <u>sticky tape, sticky traps or glue boards for insect monitoring and control (e.g., in light traps);</u> b) <u>live capture traps and snap traps;</u> c) <u>glue boards for rodents to mitigate infestations;</u> d) <u>lures, and repellents, and baits</u> as listed in Table 8.2 of CAN/CGSB-32.311.	See rationale for 8.3.1.
8.3.3	If the practices enumerated in <u>subclauses 8.3.1 and 8.3.2</u> are ineffective, <u>the operator may use:</u> a) <u>pest control substances listed in Table 8.2 of CAN/CGSB-32.311.</u> b) <u>glue boards for rodent control, in the exceptional situation when an infestation is demonstrated.</u> <u>In either case, the operator shall record the target pests, substances used, start and end dates, and the location(s) of pest control devices.</u>	Updating clause numbers.

8.3.4	<u>In all cases for rodent control covered by subclauses 8.3.2 and 8.3.3, the catch must be disposed of promptly and humanely.</u>	
8.3.5 8.3.3	If the practices specified in 8.3.32 are ineffective, substances not listed in Table 8.2 of CAN/CGSB-32.311 may be used ~~whenever organic product preparation takes place, including off-site storage facilities,~~ provided that there is no risk to organic product status or integrity. The following conditions apply: a) <u>If pest activity assessments justify the use of fumigation or fogging,</u> ~~O~~ operators shall ensure that organic products or the packaging materials are not present when these substances are used ~~indoors~~. b) <u>If rodent activity assessments justify using rodenticide-containing baits, the bait shall</u> 1) <u>be enclosed in tamper-proof containers, in locations where there is no potential for contamination of organic products, crops, or fields; and</u> 2) <u>not be used inside organic product feed processing areas or organic product feed storage areas.</u> c) Operators shall clearly document: a) <u>1) why permitted substances were not suitable or were found ineffective for pest management;</u> b) <u>2) how operators prevented contact between organic products, packaging materials, crops and fields with substances that are not listed in Table 8.2;</u> c) <u>3) all activities involved in the use, storage and disposal of substances that are not listed in Table 8.2; and;</u> d) <u>a plan to minimize potential for non-target wildlife poisoning when baits containing rodenticide are used.</u>	See rationale for 8.3.1; also, clause numbers are updated.
8.3.6 8.3.4	If pest and disease control substances that are not listed in Table 8.2 of CAN/CGSB-32.311 are used under any mandatory government program, operators shall monitor and document their use.	Updating clause numbers.

	Note: In the event of emergency pest outbreak, Canadian operators are required to notify their certification body immediately of any change that may affect organic product certification.	
8.3.7 ~~8.3.5~~	Substances in Table 8.3 of CAN/CGSB-32.311 may be used for post-harvest storage.	Updating clause numbers.
8.4	Transportation	
8.4.1	Every measure shall be taken to ensure that the integrity of organic inputs, ingredients and products is not compromised in transit. Physical segregation or other protection methods shall be used to avoid commingling or substitution with non-organic inputs, ingredients and products.	
8.4.2	The following information shall accompany the organic product <u>while in transit, including bulk loads</u>: a) the name and address of the person or organization responsible for the production, preparation or distribution of the product; b) the name of the product; c) the organic status of the product; and <u>d) the name of the certification body or; and</u> ~~de~~) information that ensures traceability, for example, the lot number.	This revision clarifies that complete documentation of the transport activities is required. This was always the intention of this subclause. Documentation is essential because verbal information cannot be verified.
8.4.3	Organic products shall not be exposed to pesticides or pest control substances that are not listed in Table 8.1 of CAN/CGSB-32.311 during any stage of transit or at border crossings. NOTE Owners are responsible for the organic integrity of the organic product while it is in transit. This includes the use of common carriers and custom hauling. Transport companies share responsibility for organic integrity while loading, transporting, or off-loading certified organic products.	

9 Organic product composition

		Rationale
9	Organic product composition Clause 9 applies to all operations involved in organic product preparation, including retailers.	
9.1	Product composition	
9.1.1	Organic product formulations shall consist primarily of organic whole or processed agricultural ingredients, organic whole or processed aquaculture ingredients (see 2.1, CAN/CGSB-32.312), and organic processing aids. Other permitted ingredients and processing aids, as described in Clause 9.2, shall be kept to a minimum.	
9.1.2	The evaluation of product composition shall exclude non-agricultural sub-parts of ingredients listed in Tables 6.3 and 6.4 in CAN/CGSB-32.311 that have a technical or functional effect on the ingredient but not on the final organic product, and are not declared on the final organic product label. These ingredient sub-parts may be present in the final organic product but only in insignificant amounts. This includes non-agricultural sub-parts of ingredients, such as anticaking agents, carriers and fillers, preservatives, stabilizers, pH adjusters or buffers. The calculation of organic percentages shall account for all constituent ingredients or ingredient sub-parts, distinguishing between organic and non-organic components of each ingredient contained in the product.	
9.1.3	The percentage of all organic ingredients in an organic product shall be calculated as follows:	
a)	Solid products [except livestock feed: see 9.1.3 d)] — Divide the net mass, excluding water and salt, of all organic ingredients in the formulation ~~or finished product, whichever is more relevant,~~ by the net mass, excluding water and salt, of all ingredients.	Reverting back to our 2018 version simplifies the calculations for food manufacturers and their supply chain. Once again, only added water needs to be deducted.
b)	Liquid products — If the product and its ingredients are liquid, divide the fluid volume of all organic ingredients, excluding water and salt, by the fluid volume of all ingredients, excluding water and salt. If the principal display panel, specification sheet or certificate of analysis uses phrases like “reconstituted from concentrates” to describe the final product, single-strength concentrations of the ingredients or the finished product shall be used to calculate organic	See rationale for 9.1.3 a).

	percentages. Any user of an ingredient, to which water or salt has been added by a prior processor, and is declared as water or salt on the ingredient declaration of the finished product is required to exclude this added water or salt when calculating organic percentages.	
c)	Solid products and liquid products — <u>Using data from the product's recipe and considering work-in-process ingredients made onsite, divide the combined net mass of solid organic ingredients (except for salt added during production) and the net mass of liquid organic ingredients (except for water or salt/brine added during production), excluding water and salt, by the total mass, excluding water and salt, of all ingredients in the finished product. The water and salt content of ingredients received are not to be deducted. Any user of an ingredient, to which water or salt has been added by a prior processor and is declared as water or salt on the ingredient declaration of the finished product is required to exclude this added water or salt when calculating organic percentages.</u>	See rationale for 9.1.3 a).
d)	Livestock feed shall <u>exclusively</u> contain ~~100%~~ organic agricultural ingredients and <u>permitted</u> ~~necessary~~ feed additives or supplements as listed in Table 5.2 of CAN/CGSB-32.311. <u>The requirements of 9.2 do not apply to livestock feed. No actual calculation required. Divide the total net mass, excluding water, salt and permitted additives listed in PSL 5.2 calcium compounds of combined organic ingredients in the formulation or the finished product, whichever is more relevant, by the total mass, excluding water, and salt and calcium compounds, of all ingredients.</u>	When necessary supplements (other than calcium compounds and salt) are subtracted from livestock feed ingredients, the feed might contain less than 95% organic agricultural ingredients. This fact was confirmed by industry feedback. As a result, these products would need to be labelled in the 70-95% category. This was never the intention. Organic feed must contain only organic agricultural ingredients and permitted supplements. Hence with this revision, the requirement to do any calculation has been eliminated. The new second sentence confirms there is no need to apply the 70-95% rules (9.2) as organic feed must be composed of 100% organic agricultural ingredients and substances from Table 5.2. If the feed doesn't comply with this requirement, it is not organic feed.

e)	Seed products as defined by the Seeds Act (see 2.4) shall contain 100% organic seeds and may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.	This addition clarifies that Clause 9 regarding organic percentile calculations is relevant to seed products.
9.1.4	The percentage of all organic ingredients in an organic product shall be rounded down to the nearest whole number.	
9.2	Categorization of organic products	
	Based on the percentage of their organic ingredients, organic products fall into two categories:	
9.2.1	95% organic content (or more)	
	Such products shall not contain an ingredient in both organic and non-organic form. Such products may contain up to 5% of the following: a) “ingredients classified as food additives” and “ingredients not classified as food additives” as listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, respectively, subject to requirements specified in substance listing annotations and restrictions specified in 6.2 of CAN/CGSB-32.311. Listed ingredients of agricultural origin shall meet the requirements in Clauses 1.4 a), 1.4 c), 1.4 d) <u>of this standard</u> and <u>Clause 6.2 of CAN/CGSB-32.311</u>; b) non-organic agricultural processing aids that meet the requirements in Clauses 1.4 a), 1.4 b), 1.4 c), and 1.4 d) <u>of CAN/CGSB-32.310</u>, and any annotations listed in Table 6.5 of CAN/CGSB-32.311; c) non-agricultural processing aids as listed in Table 6.5 of CAN/CGSB-32.311, subject to the requirements specified in substance listing annotations; d) non-organic agricultural ingredients that meet the requirements in <u>Clauses 1.4 a), 1.4 c) and 1.4 d) of this standard</u>, and non-organic aquacultural ingredients that meet the requirements in 1.4 a), 1.4 b) 1.4 c) and 1.4 h) of CAN/CGSB-32.312, and wild-capture <u>aquatic animal ingredients</u>. These ingredients are also subject to organic commercial availability requirements.	This revision updates the food composition requirements to include organic aquaculture ingredients certified to CAN/CGSB-32.312 and non-organic aquatic animal ingredients when organic ingredients are not commercially available. This mirrors the agricultural allowances.
9.2.2	70-95% organic content Such products shall not contain an ingredient in both its organic and non-organic form. Such products may contain up to 30% of the following:	See rationale for 9.2.1

a) non-organic agricultural ingredients subject to the requirements in 1.4 a), 1.4 c), and 1.4 d) of this standard;

b) non-organic aquacultural ingredients subject to the requirements in Clauses 1.4 a), 1.4 b), 1.4 c) and 1.4 h) of CAN/CGSB-32.312, and wild-capture aquatic animal ingredients;

~~b)~~ c) “ingredients classified as food additives”, and “ingredients not classified as food additives,” as listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, respectively, subject to the requirements specified in substance listing annotations and restrictions specified in 6.2 of CAN/CGSB-32.311. Listed ingredients of agricultural origin shall meet the requirements in 1.4 a), 1.4 c), 1.4 d) of this standard, and Clause 6.2 of CAN/CGSB-32.311;

~~e)~~ d) non-organic agricultural processing aids that meet the requirements in 1.4 a), 1.4 b), 1.4 c), and 1.4 d) of this standard, and any annotations listed in Table 6.5 of CAN/CGSB-32.311;

~~e)~~ e) non-agricultural processing aids listed in Table 6.5 of CAN/CGSB-32.311 subject to the requirements specified in substance listing annotations.

NOTE See Annex A for a summary of clause 9.

10 Procedures, criteria and conditions to amend CAN/CGSB-32.311, *Organic production systems – Permitted substances lists*

[No changes to Clause 10]

10	Procedures, criteria and conditions to amend CAN/CGSB-32.311, <i>Organic production systems – Permitted substances lists</i> Clause 10 applies to all proposed amendments to the permitted substances lists (PSL). Only generic substances are listed in the PSL. Brand name substances, which may be a combination of generic substances, are not eligible for inclusion on the PSL. This clause does not apply to packaging materials, equipment surfaces, or other similar substances or materials.
10.1	Substance review procedures
10.1.1	Criteria provided in this clause shall be the determinants for amending CAN/CGSB-32.311.
10.1.2	The substance review process shall be open, transparent and fully participatory according to the Canadian General Standards Board (CGSB) procedures.
10.1.3	Consideration shall be given to the consequences a proposed amendment may have on equivalency and harmonization of this standard with standards and regulations of other jurisdictions.
10.2	Permitted substances criteria
10.2.1	Substances included in the PSL shall:
a)	comply with the general principles of organic production specified in section 0.2 of the Introduction of this standard, and
b)	comply with 1.4 and 1.5 of this standard.
10.2.2	Substance reviews shall:
a)	consider the necessity, origin and mode of production, and the social and ecological impact of the production and application of the substance;
b)	include a detailed description of the substance and a substantive rationale along with documentation in support of the proposed amendment; and

c)	include an evaluation of all available alternatives, including substances and acceptable practices outlined in this standard, and in other production systems.									
10.2.3	If applicable, the substance annotation shall include:									
a)	restrictions concerning its origin and mode of production;									
b)	restrictions concerning its composition and usage; and									
c)	a commercial availability clause which allows for the use of an alternative substance when the preferred form of the substance as outlined in the following tables is not available in sufficient quality or quantity, at the time of publication.									
10.3	Specific substance review criteria The criteria used for guiding the review of a substance are described in Tables 10, 11, 12 and 13.									
Table 10 – Substance review criteria for permitted substances in crop production										
	<table><tr><th></th><th>Soil amendments and crop nutrition (Table 4.2 Column 1 of CAN/CGSB-32.311)</th><th>Crop production aids and materials (Table 4.2 Column 2 of CAN/CGSB-32.311)</th></tr><tr><td>A. Necessity</td><td>Shall be necessary to improve or maintain soil fertility, to fulfil specific requirements of crops, or for specific soil conditioning and rotational purposes that cannot be satisfied by the requirements and practices of this standard.</td><td>Shall be necessary to manage plant diseases, insects, weeds and other pests. Used when no other adequate biological, physical or plant breeding alternatives or effective management practices are available.</td></tr><tr><td>B. Origin and mode of production</td><td colspan="2">1. Shall be of plant, animal, microbial or mineral origin. Substances may be produced through physical (for example, mechanical or thermal), enzymatic or microbial (for example, composting, fermentation or digestion) methods of transformation. 2. Shall be derived from crops and livestock produced in accordance with this standard, or from naturally occurring minerals. 3. If preferred forms, as described in B1 & B2, of these substances do not exist, alternative substances may be considered for inclusion.</td></tr></table>		Soil amendments and crop nutrition (Table 4.2 Column 1 of CAN/CGSB-32.311)	Crop production aids and materials (Table 4.2 Column 2 of CAN/CGSB-32.311)	A. Necessity	Shall be necessary to improve or maintain soil fertility, to fulfil specific requirements of crops, or for specific soil conditioning and rotational purposes that cannot be satisfied by the requirements and practices of this standard.	Shall be necessary to manage plant diseases, insects, weeds and other pests. Used when no other adequate biological, physical or plant breeding alternatives or effective management practices are available.	B. Origin and mode of production	1. Shall be of plant, animal, microbial or mineral origin. Substances may be produced through physical (for example, mechanical or thermal), enzymatic or microbial (for example, composting, fermentation or digestion) methods of transformation. 2. Shall be derived from crops and livestock produced in accordance with this standard, or from naturally occurring minerals. 3. If preferred forms, as described in B1 & B2, of these substances do not exist, alternative substances may be considered for inclusion.	
	Soil amendments and crop nutrition (Table 4.2 Column 1 of CAN/CGSB-32.311)	Crop production aids and materials (Table 4.2 Column 2 of CAN/CGSB-32.311)								
A. Necessity	Shall be necessary to improve or maintain soil fertility, to fulfil specific requirements of crops, or for specific soil conditioning and rotational purposes that cannot be satisfied by the requirements and practices of this standard.	Shall be necessary to manage plant diseases, insects, weeds and other pests. Used when no other adequate biological, physical or plant breeding alternatives or effective management practices are available.								
B. Origin and mode of production	1. Shall be of plant, animal, microbial or mineral origin. Substances may be produced through physical (for example, mechanical or thermal), enzymatic or microbial (for example, composting, fermentation or digestion) methods of transformation. 2. Shall be derived from crops and livestock produced in accordance with this standard, or from naturally occurring minerals. 3. If preferred forms, as described in B1 & B2, of these substances do not exist, alternative substances may be considered for inclusion.									

	C. Impact	Substance reviews shall consider: 1. The impact of a substance's manufacture and disposal after use on the environment including impacts on ecology, surface and ground water, and soil and air quality, including substance persistence, degradation and concentration effects. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodability and tilth), surface and ground water quality, ecosystems (in particular, non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Table 11 – Substance review criteria for permitted substances in livestock production

	Livestock feed (Table 5.2 of CAN/CGSB-32.311)	Livestock health care (Table 5.3 of CAN/CGSB-32.311)
A. Necessity	1. Shall be necessary to correct documented essential nutrient deficiencies in the forage or feed ration, when other biological, cultural or physical treatments permitted by this standard are not available; or 2. Shall be necessary to ensure and preserve product quality, when other biological, cultural or physical treatments permitted by this standard are not available.	Shall be necessary to prevent or treat livestock health problems when other treatments permitted by this standard are not available.
B. Origin and mode of production	Shall be organic or derived from mineral or biological matter.	Shall be organic or derived from mineral or biological matter.
C. Impact	Substance reviews shall consider: 1. The impact of a substance's manufacture and disposal after use on the environment including impacts on ecology, surface and ground water, and soil and air quality including substance persistence, degradation and concentration effects. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodability and tilth), surface and ground water quality, ecosystems (in particular non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Table 12– Substance review criteria for permitted substances in processing of organic food

	Food ingredients and processing aids (Tables 6.3, 6.4 and 6.5 of CAN/CGSB-32.311)
A. Necessity	1. Shall be necessary to correct documented, essential nutrient deficiencies of the product, that is, vitamins and minerals; or when required by regulations; 2. Shall be essential for ensuring the safety of the product; 3. Shall be used only when it is not feasible or practical to produce or store such products without the use of these substances; or 4. Shall be necessary to achieve a technological effect during processing (for example, filtration) or an organoleptic effect in the final product (for example, colouring and flavouring).
B. Origin and mode of production	1. Shall be found in nature. Substances may be produced using physical (for example, extraction, precipitation), enzymatic or microbial (for example, fermentation) processes, as well as through chemical extractions that do not alter the substance's chemical structure. 2. Preferably from organic sources. 3. If preferred forms, as described in B1 & B2, of these substances do not exist, alternative substances may be considered for inclusion.
C. Impact	Substance reviews shall consider the impact of use and potential misuse on: 1. Human health through both food and non-food exposure, including acute and chronic toxicity, allergenicity and metabolites; 2. product quality, including nutrition, flavour, taste, appearance and storage, if applicable; 3. consumer perception of the nature, substance and quality of a food product.

Table 13 – Substance review criteria for permitted substances in cleaning and sanitation

	Cleaning and sanitation substances (Tables 7.3 and 7.4 of CAN/CGSB-32.311)	Facility management substances (Tables 8.2 and 8.3 of CAN/CGSB-32.311)
A. Necessity	Substances used for cleaning and sanitizing organic products and organic product contact surfaces shall be necessary and appropriate for the intended use.	Substances used for pest control or to cause a post-harvest physiological effect shall be necessary and appropriate for the intended use.
B. Origin and mode of production	1. Shall be organic or derived from mineral or biological matter whenever possible. 2. If preferred forms, as described in B1, of these substances do not exist, alternative substances may be considered for inclusion.	
C. Impact	Substance reviews shall consider: 1. The impact of a substance's manufacture and disposal after use on the environment including impacts on ecology, surface and ground water, and soil and air quality including substance persistence, degradation and concentration effects. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodability and tilth), surface and ground water quality, ecosystems (in particular non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

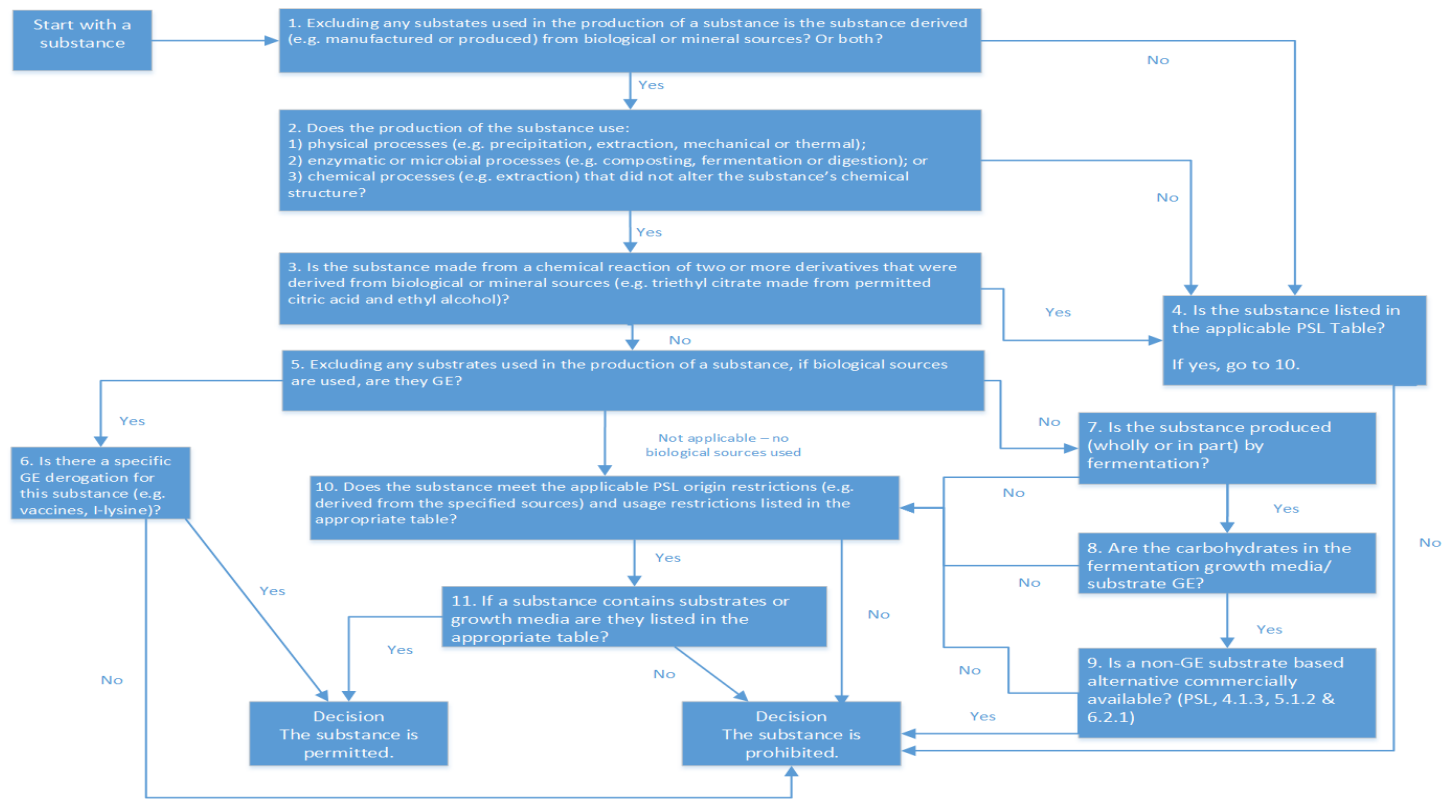
Annex A (informative) Categorization of organic products

[No changes made to Annex A] Table A.1 – Categorization of organic products based on their percentage of organic ingredients

Summary	Categories		
	95% ^a (or more)	70-<95% ^b (or more)	<70% ^c
May not contain an ingredient in both its organic and non-organic form.	✓	✓	n/a
May contain up to 5% non-organic ingredients if the organic form is not commercially available.	✓	n/a	n/a
May contain up to 30% non-organic ingredients.	n/a	✓	n/a
May contain less than 70% organic ingredients.	n/a	n/a	✓
Non-organic ingredients both “classified as food additives” and “not classified as food additives” shall be listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, meet the specified annotations and comply with 6.2 of CAN/CGSB-32.311.	✓	✓	n/a
Whether listed or not in Tables 6.3 and 6.4 of CAN/CGSB-32.311, agricultural, non-organic ingredients shall meet 1.4 a), c) and d), and 6.2 of CAN/CGSB-32.311.	✓	✓	n/a
Non-listed agricultural, non-organic ingredients are subject to commercial availability requirements.	✓	n/a	n/a
Non-organic processing aids of agricultural origin are permitted, subject to the requirements of 1.4 a), b), c), and d); and any annotations listed in Table 6.5 of CAN/CGSB-32.311.	✓	✓	n/a
Non-agricultural processing aids are permitted if they are listed in Table 6.5 (processing aids) of CAN/CGSB-32.311.	✓	✓	n/a
^a Products compliant with 9.2.1 may be identified as organic. ^b Products compliant with 9.2.2 may only declare the percentage of organic ingredients. ^c Products with less than 70% organic content may identify which ingredients are organic in their ingredient list. For full labelling requirements refer to current regulations.			

Annex B (informative) Permitted Substances Decision Tree

B



Rationale

Adding a definition for "derived from biological or mineral sources" that directs readers to Appendix B will help everyone understand what the intent of the standard is with regards to input sources. Simultaneously replacing the one occurrence of "derivative" in the standard (which was in Appendix B) with "substances" further reduces confusion as many thought "derivative" in that context meant something that is derived from (which was not the case).

See definitions for 'carbohydrate,' 'derivative,' 'fermentation' in Clause 3 *Definitions*.

Change to 2020 COS: Replace the word "derivatives" in #3 of Appendix B with "substances" #3 so that it reads: Is the substance made from a chemical reaction of two or more substances ~~derivatives~~ that were derived from biological or mineral sources (e.g. triethyl citrate made from permitted citric acid and ethyl alcohol)?

Annex C (*informative*) Notes on Organic Principles

C	Annex C (informative) Notes on Organic Principles Section 0.2 of the Introduction indicates the General Principles of Organic Production. These are from IFOAM Organics International (www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic). Historical organic principles The principles listed below were the original principles published in 2006. Though they have been updated in the introduction of this standard, they have been retained in this annex to provide context for existing organic plans. Organic production is based on principles that support healthy practices. These principles aim to increase the quality and the durability of the environment through specific management and production methods. They also focus on ensuring the humane treatment of animals. The general principles of organic production include the following: 1. Protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health. 2. Maintain long-term soil fertility by optimizing conditions for biological activity within the soil. 3. Maintain biological diversity within the system. 4. Recycle materials and resources to the greatest extent possible within the operation. 5. Provide attentive care that promotes the health and meets the behavioural needs of livestock. 6. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production.	The proposal to add requirements about social fairness to the standards was discussed at length and rejected. See articles: https://mailchi.mp/organicfederation/surveysocialjustice https://mailchi.mp/organicfederation/review-rejectedpetitions https://mailchi.mp/organicfederation/tcmtg-diverseschanges

7. Rely on renewable resources in locally organized agriculture systems. Fairness ~~During the most recent revision of the Canadian Organic Standards, there has been considerable interest to enhance the requirements of fairness. This will be discussed again in 2025.~~ IFOAM Organics International describes fairness as: “Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities. Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings. This principle emphasizes that those involved in Organic Agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties – farmers, workers, processors, distributors, traders and consumers. Organic Agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products. This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being. Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.”	

CAN/CGSB-32.310-2026

Supersedes CAN/CGSB-32.310-2020,
Corrigendum No. 1



Organic production systems General principles and management standards

Developed by the Canadian General Standards Board

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Organic production systems

General principles and management standards

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CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE. La version française de la présente norme est intitulée *Systèmes de production biologique Principes généraux et normes de gestion*

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Translation of this National Standard was conducted by the Government of Canada.

Preface

This National Standard of Canada, CAN/CGSB-32.310-2026, supersedes the 2020 edition and 2021 Corrigendum.

Changes since the previous edition

- Additions, deletions and changes in the definitions, and removal of the numbering system for definitions. Rather than numbering, the definitions are now listed in alphabetical order in both the French and English standards.
- Additions, deletions and changes in the following clauses: Organic plan; Crop production; Livestock production; Specific production requirements (particularly Apiculture; Maple products; Sprouts, shoots and microgreens production; and Crops Grown in Structures or Containers [previously known as Greenhouse crops]); Maintaining organic integrity during cleaning, preparation and transportation; and Organic product composition.
- The subclause 7.7 Organic insects has been greatly expanded.

The following definitions apply in understanding how to implement this National Standard of Canada:

- “shall” indicates a **requirement**;
- “should” indicates a **recommendation**;
- “may” is used to indicate that something is **permitted**;
- “can” is used to indicate that something is **possible**, for example, that an organization is able to do something.

Notes accompanying clauses do not include requirements or alternative requirements. The purpose of a note accompanying a clause is to separate explanatory or informative material from the text. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

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Introduction

Description

Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop operations that are sustainable and harmonious with the environment.

CAN/CGSB-32.310, Organic Production Systems—General Principles and Management Standards, describes the principles and management standard of organic production systems.

CAN/CGSB-32.311, Organic Production Systems—Permitted Substances Lists, provides lists of substances that are allowed for use in organic production systems.

As is the case for all products sold in Canada, organic inputs—such as, but not limited to, fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing additives or aids, sanitizing and cleaning material—and products of organic agriculture, such as, but not limited to, feed and food, should comply with all applicable regulatory requirements.

General principles of organic production

Organic Agriculture is based on the following general principles^{1,2}:

Principle of health—Organic agriculture should sustain and enhance the health of soil, plants, animals, humans and the planet as one and indivisible.

Principle of ecology—Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

Principle of care—Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Principle of fairness—Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

Organic practices

Neither this standard³ nor organic products produced in accordance with this standard represent specific claims about the healthiness, safety and nutrition of such organic products.

Management methods are carefully selected in order to restore and then sustain ecological stability within the operation and the surrounding environment. Soil fertility is maintained and enhanced by promoting optimal biological activity within the soil and conservation of soil resources. Pests, including insects, weeds and diseases, are managed using biological and mechanical control methods, and cultural practices that include minimized tillage, crop selection and rotation, recycling of plant and animal residues, water management, augmentation of

¹ From <https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic>

² For the historical organic principles (from 2006 edition) including the definition of fairness, refer to Annex C.

³ References throughout this document to "this standard" or "this National Standard of Canada" refer to CAN/CGSB-32.310, *Organic Production Systems — General Principles and Management Standards*.

beneficial insects to encourage a balanced predator—prey relationship, the promotion of biological diversity and ecologically based pest management.

Under a system of organic production, livestock are provided with living conditions and space allowances appropriate to their behavioural requirements and organically produced feed. These practices strive to minimize stress, promote good health and prevent disease.

Organic products are produced and processed under a system that strives to preserve the integrity of the principles in this standard.

Organic practices and this standard cannot ensure that organic products are entirely free of residues of substances prohibited by this standard and of other contaminants, since exposure to such compounds from the atmosphere, soil, ground water and other sources may be beyond the control of the operator. The practices permitted by this standard are designed to ensure the least possible residues at the lowest possible levels.

In the development of the standard, it was recognized that differences between Canada's agricultural regions require varying practices to meet production needs.

This standard is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification process assesses operational compliance. Certification is granted to compliant products. Certification bodies must allow a period of up to 12 months after the publication date of an amendment to this standard and to CAN/CGSB-32.311 for an applicant to come into compliance with any changes to the requirements.

Notes and examples in this standard

In this standard, notes and examples are used to give additional information intended to assist the understanding or use of the document and are not a normative part of the standard.

Organic production systems

General principles and management standards

1. Scope

1.1 This National Standard of Canada applies to the following organic products:

- a) Unprocessed plants and plant products, livestock and livestock products, to the extent that the principles of production and specific verification rules for them are described in the standard;
- b) Processed agricultural crop and livestock products intended for human consumption or use and produced from the items mentioned in Clause 1.1 a);
- c) Livestock feed;
- d) Processed agricultural crop and livestock products intended for animal consumption or use and produced from the items mentioned in Clause 1.1 a).

1.2 Organic products referenced in this standard are produced from a production system that:

- a) seeks to nurture ecosystems through its management practices in order to achieve sustainable productivity; and
- b) provides control of pests including insects, weeds and disease through enhancement of biodiversity, recycling of plant and animal residues, crop selection and rotation, water management, tillage and cultivation.

1.3 Units of measure

Quantities and dimensions in this standard are given in metric units with yard/pound equivalents, mostly obtained through soft conversion, given in parentheses. The metric units shall be regarded as being official in the event of dispute or unforeseen difficulty arising from the conversion.

1.4 Prohibited materials or techniques in organic production and preparation

If producing or preparing organic products, the following materials or techniques are prohibited, since they are incompatible with the general principles of organic production:

- a) all products of and materials from genetic engineering (GE), as defined in this standard, and as specified in subclauses 4.1.3, 5.1.2 and 6.2.1 of CAN/CGSB-32.311;
- b) all products, materials or processes intentionally using nanotechnology, as defined in this standard, with the following exceptions:
 - 1) naturally occurring nano-sized particles or those produced incidentally through processes such as grinding flour;
 - 2) contact surfaces, such as equipment, work surfaces or packaging, where the transference of nano-sized particles to organic crops, livestock or products is unintended and unlikely to occur;
- c) irradiation, as defined in this standard, for the treatment of organic products and inputs used in the production of organic products, except as specified in CAN/CGSB-32.311;
- d) cloned livestock (see definition in Clause 3) and its descendants;

- e) equipment, harvest and storage containers, storage facilities and packaging materials treated with fungicides, preservatives, fumigants and pesticides not listed in CAN/CGSB-32.311, except as permitted in 8.2.3 and 8.3.3 of CAN/CGSB-32.310.

1.5 Prohibited substances in organic production and preparation

In addition to Clause 1.4, when producing or preparing organic products, the following substances are prohibited, since they are incompatible with the general principles of organic production:

- a) soil amendments, such as fertilizer or composted plant and animal material, that contain a substance not listed in CAN/CGSB-32.311;
- b) sewage sludge;
- c) any crop production aids or substances not listed in CAN/CGSB-32.311;
- d) plant, fungal and animal growth regulators, except as specified in CAN/CGSB-32.311;
- e) veterinary drugs, including antibiotics and parasiticides, except as permitted by this standard;
- f) non-organic ingredients, food additives and processing aids used in organic product preparation, including sulphates, sulphites, nitrates and nitrites, except as permitted by this standard or specified in CAN/CGSB-32.311;
- g) formulants except as specified in CAN/CGSB-32.311.

Note: See the Permitted Substances Lists Decision Tree in Annex B for a methodology that may assist in the completion of input reviews.

2. Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below.

Note: The addresses provided below were valid at the date of publication of this standard.

An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.

2.1 Canadian General Standards Board (CGSB)

CAN/CGSB-32.311 — *Organic production systems—Permitted substances lists.*

CAN/CGSB-32.312 — *Organic production systems: Aquaculture—General principles, management standards and permitted substances lists.*

2.1.1 Source

The above may be obtained from the Canadian General Standards Board, Sales Centre, Ottawa, ON Canada K1A 0S5. Telephone: 1-800-665-2472. E-mail: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site: <https://www.canada.ca/en/public-services-procurement/services/standards-oversight/canadian-general-standards-board.html>.

2.2 Canadian Food Inspection Agency (CFIA)

Health of Animals Act (S.C. 1990, c. 21)

Health of Animals Regulations (C.R.C., c. 296)

Safe Food for Canadians Act (S.C. 2012, c. 24)

Safe Food for Canadians Regulations (SOR/2018-108)

Seeds Regulations (CRC c. 1400)

Seeds Act (R.S.C., 1985, c. S-8)

2.2.1 Source

The above may be obtained from CFIA at <http://www.inspection.gc.ca/> or from Justice Laws Web site at <http://laws-lois.justice.gc.ca>.

2.3 IFOAM Organics International

Principles of Organic Agriculture.

2.3.1 Source

The above may be obtained from the IFOAM Web site at <https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic>.

2.4 National Farm Animal Care Council (NFACC)

In the event of any conflict or inconsistency between this standard and a Code of Practice listed below, this standard shall take precedence.

Code of Practice for the Care and Handling of Dairy Cattle

Code of Practice for the Care and Handling of Beef Cattle

Code of Practice for the Care and Handling of Veal Cattle

Code of Practice for the Care and Handling of Pigs

Code of Practice for the Care and Handling of Pullets and Laying Hens

Code of Practice for the Care and Handling of Hatching Eggs, Breeders, Chickens and Turkeys

Code of Practice for the Care and Handling of Sheep

Code of Practice for the Care and Handling of Goats

Code of Practice for the Care and Handling of Rabbits

Code of Practice for the Care and Handling of Bison

2.4.1 Source

The above may be obtained from the NFACC Web site at <https://www.nfacc.ca/codes-of-practice>.

2.5 Animal Health Canada

Canadian Livestock Transport Course

2.5.1 Source

The above may be obtained from the Animal Health Canada web site at <https://campus.animalhealthcanada.ca/>.

3 Terms and definitions

For the purposes of this National Standard of Canada, the following terms and definitions apply.

aeroponics (*aéroponie*)

soil-free cultivation method whereby plants are suspended with their roots exposed to the air.

agricultural ingredient (*ingrédient agricole*)

pertaining to crops and livestock and any products, including processed ingredients, resulting from crops and livestock. Processed agricultural ingredients and products may be manipulated physically or biologically but are no longer considered to be agricultural products or agricultural ingredients if they are more than minimally processed or if they are chemically altered in a way that creates new compounds.

By exception, a product remains compliant when alterations are made using permitted substances listed in Tables 6.3-6.5 of CAN/CGSB-32.311, and if the product complies with Table 12(B)(1) *Origin and mode of production requirements* of CAN/CGSB-32.310.

For guidance on what is considered “minimal processing”, see *Annex D—Minimum processes*.

agricultural product (*produit agricole*)

see definition for “agricultural ingredient”.

agro-ecosystem (*agro-écosystème*)

system consisting of the form, function, interaction and equilibrium of the biotic and abiotic elements present within the environment of a given agricultural operation.

allopathic (*allopathique*)

use of allopathy.

allopathy (*allopathie*)

method of treating disease with substances that produce a reaction or effects different from those caused by the disease itself.

annual seedling (*semis annuel*)

young plant grown from seed that will complete its life cycle or produce a yield and be able to be harvested within the same crop year or season in which it was planted.

antibiotic (*antibiotique*)

any drug or combination of drugs which is prepared from certain microorganisms, or which formerly was prepared from microorganisms but is now made synthetically, and which possesses inhibitory action on the growth of other microorganisms including fungi, bacteria and viruses.

apiculture (*apiculture*)

management and production of honeybees, queens and their products. Examples are honey, beeswax, pollen, royal jelly, propolis and bee venom.

beak treatment (*traitement du bec*)

blunting of the beak using a non-invasive procedure (i.e. infra-red).

beak trimming (*rognage du bec*)

removal of a portion of the beak, usually by hot blade, an instrument that simultaneously cuts and cauterizes.

bedding (*litière*)

material added to livestock housing environments for the purpose of adding comfort and to encourage natural behaviours. Examples: chopped straw, wood shavings.

biobased (*biosourcé*)

substance that is produced from a plant, animal or microbial source.

biodegradable (*biodégradable*)

crop and livestock inputs and production aids capable of microbial decomposition within 24 months in soil (with the exception of plant biomass), one month in aerated water and two months in anaerobic water, with minimal impact on the environment.

biological (*organique*)

pertaining to multicellular or unicellular organisms (or their components), such as animals, plants, fungi, bacteria, proteins, nucleic acids and viruses, etc.

buffer zone (*zone tampon*)

clearly defined and identifiable boundary area that separates an organic production unit from adjacent non-organic areas.

carbohydrate (*glucides*)

sugar or starch compound, such as dextrose (glucose).

cloned animals (*animaux clonés*)

identical animals resulting from human manipulation of embryos and embryo transfer, using techniques such as somatic cell nuclear transfer, embryonic cell nuclear transfer or embryo splitting.

colony (*colonie*)

typically an aggregate of several thousand worker bees, drones, and a queen bee living together in a hive or in any other dwelling as one social unit.

commercially available (*disponible sur le marché*)

documented ability to obtain a production input or an ingredient in an appropriate form, quality, quantity or variety, irrespective of cost, in order to fulfill an essential function in organic production or preparation.

commingling (*mélange*)

mixing of or physical contact between bulk, unbound or unpackaged organic products and non-organic products during production, preparation, transportation, or storage.

compost (*compost*)

product of a carefully managed aerobic process by which biological materials are digested by microorganisms.

compost tea (*thé de compost*)

liquid soil amendment or foliar feed used to promote beneficial bacterial growth that is created by steeping mature compost in water.

compromised animal (*animal fragilisé*)

as defined in *Health of Animals Regulations Part XII (Transport of Animals)*, or generally an animal that exhibits any signs of infirmity, illness, injury, or of a condition that indicates that it has a reduced capacity to withstand transport.

crop rotation (*rotation des cultures*)

practice of alternating crops grown in a specific field in a planned sequence and in successive crop years so that crops of the same species or family are not continuously grown in the same field. Perennial cropping systems employ techniques such as alley cropping, intercropping and hedgerows to introduce biological diversity in lieu of crop rotation.

derived from biological or mineral sources (*dérivé de sources organiques ou minérales*)

isolated/extracted from primary biological or mineral sources (or derived from a named biological or mineral source) without creating new chemical compounds. See CAN/CGSB-32.310 *Annex B — Permitted Substances Decision Tree*.

disbudding (*ébourgeonnage*)

a procedure that removes the horn bud (from which the horn grows) before it attaches to the skull, which usually occurs at eight weeks of age in cattle and at three weeks of age in goats and sheep. When horns are removed after the horn bud attaches to the skull, it is called dehorning.

environmental enrichment (livestock) (*enrichissement de l'environnement [production d'animaux d'élevage]*)

provision of safe materials or objects to an animal's environment that encourage the expression of natural behaviour and exercise. The materials or objects are appropriate for the livestock production system and stage of production and do not include functional equipment or other objects or materials required by this standard.

feed additive (*additif pour alimentation animale*)

substance added to feed in small quantities to fulfil a specific nutritional or non-nutritional need. Examples are essential nutrients in the form of amino acids or vitamins and minerals, and non-nutritive additives such as anticaking agents and antioxidants.

feed supplement (*supplément alimentaire*)

feed that is used in conjunction with other feeds to improve the nutritive balance of the total and that is intended to be:

- a) fed undiluted as a supplement to other feeds,
- b) available separately and offered free choice, along with other parts of the ration, or
- c) further diluted and mixed to produce a complete feed.

Note: In Canada, the *Feeds Act* requires that the resulting feed is acceptable for registration.

fermentation (*fermentation*)

conversion of a carbohydrate into simpler or more complex carbon-based compounds by an enzyme or enzymes produced by microorganisms. For example, sugars can be fermented in the presence of yeast to produce alcohol or acetic acid along with carbon dioxide. Fermentation followed by extraction and purification can isolate the substance from other products of fermentation and impurities; this can be used to produce compounds such as enzymes, antibiotics, amino acids and organic acids (e.g., citric, gibberellic, lactic acids). Also known as microbial fermentation or biofermentation.

fertilizer (*engrais*)

single or blended substance composed of one or more recognized plant nutrients.

filtrate (*filtrat*)

liquid that passes through an osmosis filter in the production of maple or other tree sap syrup.

food additive (*additif alimentaire*)

has the same meaning as in B.01.001 of the *Food and Drug Regulations*.

flight zone (*zone de fuite*)

the distance at which an animal moves away from another animal or human. The size of the flight zone reflects the species, the animal's age and past experiences, and the relationship between the animal and the handler.

food-grade (*qualité ou grade alimentaire*)

designation used to identify that a substance (for example, a cleaning material, gas, etc.) or material (for example, a counter, containers, a conveyor, etc.) may come in contact with food, food contact surfaces or is safe for human consumption.

forage (*fourrage*)

vegetative material in fresh, dried or ensiled state that is fed to livestock, for example, pasture, hay or silage.

formulant, production aid (*produits de formulation utilisés avec les auxiliaires en production végétale*)

any component of a production aid (CAN/CGSB-32.311 Table 4.2 Column 2) added for its functional effect on the input substance, such as a stabilizer, surfactant or spreader. These formulants will not have an active effect on pests.

formulant, soil amendment (*produit de formulation utilisés avec les amendements du sol*)

any component added to a soil amendment (CAN/CGSB-32.311, Table 4.2 Column 1) for its functional effect on the input substance, such as a preservative or pH adjuster. These formulants will not chemically react with the active components or otherwise modify the soil amendment's capacity to change soil fertility, chemistry or tilth.

frass (*scuirs d'insectes*)

a mixture of insect excreta, insect parts and exoskeletons, as well as undigested feed and bedding.

genetic engineering (*génie génétique*)

also commonly known as resulting in Genetically Modified Organisms (GMOs)

artificial manipulation of living cells for the purpose of altering its genome constitutes genetic engineering and refers to a set of techniques from modern biotechnology by which the genetic material of an organism is changed in a way that does not occur other than through traditional breeding by multiplication or natural recombination. The genome is considered an indivisible entity; artificial technical/physical insertions, deletions, or rearrangements of elements of the genome constitute genetic engineering.

Techniques developed in the future may be considered genetic engineering. Examples of the techniques used in genetic engineering include, but are not limited to:

- genome/gene editing techniques, such as but not limited to CRISPR, that replace one DNA sequence with another, transposes, deletes or adds a gene sequence or a part of gene sequence;
- recombinant DNA (rDNA) techniques that use vector systems;
- cisgenesis;
- intragenesis;
- agro-infiltration;
- techniques involving the direct introduction into the organism of hereditary materials prepared by whatever means, inside or outside the organism;
- cell fusion (including protoplast fusion) or hybridization techniques that overcome natural physiological, reproductive or recombination barriers, where the donor cells/protoplasts do not fall within the same taxonomic family or are created outside, or manipulated within, the organism through techniques such as, but not limited to, synthetic biology.

Unless the donor/recipient organism is created from any of the above techniques, examples of techniques not covered by this definition include:

- in vitro fertilization;
- conjugation, transduction, transformation, or any other natural process;
- polyploidy induction;
- cell fusion (including protoplast fusion) or hybridization techniques where the donor cells/protoplasts are in the same taxonomic family and not created outside, or manipulated within, the organism through techniques such as, but not limited to, synthetic biology.

grazing season (*saison de pâturage*)

the period of time when pasture is available for grazing due to local seasonal climate, available moisture, soil condition, availability of forage and other land access constraints. Grazing season dates may vary because of seasonal variations or extreme weather events and may or may not be continuous. The grazing season may be extended, for example, by grazing stockpiled pasture or annual crops, as outlined in the operation's organic system plan.

herbivore (*herbivore*)

animal that feeds chiefly on plants.

hive (*ruche*)

human-constructed housing for bees, including related components.

hydroponic production (*production hydroponique*)

plants grown in hydroponic production systems mainly draw their nutrients from supplied solutions of soluble nutrients. The hydroponic growing system is characterized by a growing medium which can vary and can be as diverse as an aqueous matrix, or an inert material (e.g., rockwool), or carbon-based material (e.g., coir) and any combination thereof, and may or may not contain soil.

incidental additives (*additifs indirects*)

substances used in organic processing facilities that have the potential to remain present in organic products as residues. Examples are hand products (cleaners, antiseptics, lotions, barrier creams), boiler water treatment compounds, water treatment compounds, lubricants (release agents, solvents) and non-food chemicals (sanitizers, disinfectants, cleaning agents and detergents).

ingredient (*ingrédient*)

substance, including a food additive, used in the manufacture or preparation of a product. The substance is present in the final product, possibly in a modified form.

input (*intrant*)

substance used in production or preparation. Examples are fertilizers, feed supplements, pesticides, soil amendments, veterinary treatments, processing aids, sanitizing and cleaning materials.

irradiation (*irradiation*)

refers to treatment with ionizing radiation (see definition of "radiation").

isolation distance (*distance d'isolement*)

distance established to segregate an organic crop from a commercialized GE crop of the same crop type. An isolation distance is the shortest distance from the edge of an organic crop to the edge of the nearest GE crop of that crop type.

litter (*portée*)

a group of young animals born at one time to one mother. Example: a litter of piglets.

litter material (*fumier*)

a mixture of bedding material with animal excreta, such as manure, dust and feathers, collected from the floor of livestock housing (e.g., barn, coop).

livestock (*animaux d'élevage*)

any domestic or domesticated animal including bovine, ovine, porcine, caprine, equine, lagomorph (rabbits), poultry and bees raised for food or used in the production of food. The products of hunting or fishing of wild animals are not included in this definition.

manure (*déjections animales*)

livestock feces, urine and other excrement.

microgreens (*micro-verdures*)

edible young plants that are harvested later than sprouts, generally when cotyledons are fully formed or when two or four true leaves are present.

mushroom mycelium (*mycélium de champignon*)

the main vegetative body of a fungus, consisting of a network of thread-like filaments called hyphae, from which mushrooms fruit or grow. In commercial mushroom production, mycelium is also used to colonize or inoculate spawn media to produce spawn and a subsequent crop of mushrooms (fruiting bodies).

mushroom spawn (*blanc de champignon*)

a combination of mycelium and substrate or growth media used to inoculate substrate to propagate mycelium and mushrooms.

nanotechnology (*nanotechnologie*)

manipulation of matter at atomic, molecular, or macromolecular dimensions typically between 1 and 100 nm to create materials, devices and systems with fundamentally new properties and functions. Nanoscale chemical substances, or nanomaterials, behave differently from their macroscale counterparts, exhibiting different mechanical, optical, magnetic or electronic properties.

nutrient management plan (*plan de gestion des nutriments*)

nutrient budget or plan in which the timing and rate of nutrient application is based on soil nutrient status (soil test results), crop nutrient needs, the amendment (manure, compost, plow-down crop or other permitted substance), nutrient content and expected nutrient release rates. The goal of a nutrient management plan is to minimize nutrient loss, protect water quality, maintain soil fertility and ensure effective use of permitted soil amendments.

operation (*exploitation*)

farm, company or organization that produces or prepares an organic product; an operation may have multiple production units (see definition of “production unit”).

operator (*exploitant*)

person, company or organization that produces, prepares, packages or owns the brand of product(s) with a view to the subsequent sale, trade or marketing of products labelled as organic.

organic integrity (*intégrité biologique*)

maintenance of the inherent organic qualities of a product from the receipt of ingredients through to the end consumer.

organic product (*produit biologique*)

any commodity or output produced by a system compliant with this standard.

organic production (*production biologique*)

method of agricultural production in compliance with this standard.

parallel production (*production parallèle*)

simultaneous production or preparation of organic and non-organic crops, including transitional crops, livestock and other organic products of the same or similar varieties that are visually indistinguishable by the common person when the crops, livestock or products are positioned side by side.

parasiticide (*antiparasitaire*)

pharmaceutical substance or veterinary drug, such as an anthelmintic (dewormer), used to control internal or external parasites in livestock.

perennial crop (*culture vivace*)

crop, other than a biennial crop, that can be harvested from the same planting for more than one crop year.

pest (*organisme nuisible*)

organism causing damage to humans or to resources used by humans, such as certain viruses, bacteria, fungi, weeds, parasites, arthropods and rodents.

pesticide (*pesticide*)

substances used, directly or indirectly, to attract, prevent, destroy, repel or mitigate pests; or to alter the growth, development or characteristics of weeds. Includes any organism, substance or mixture of substances, and devices, such as lures or traps.

planting stock (*matériel de reproduction végétale*)

plant or plant tissue other than seedlings or transplants, used in plant production or propagation. Refers to plant material without soil or growth media. Examples are leaf or stem cuttings, bare roots, rhizomes, shoots, crowns, tubers, bulbs or cloves.

prebiotics (*prébiotiques*)

fibre food and potential carriers for bacteria. Examples of prebiotic substrates are inulin, lactulose, various galacto-oligosaccharides, fructo-oligosaccharides, xylo-oligosaccharides and sugar alcohols.

preparation (*préparation*)

includes, with respect to an organic product, post-harvest handling, manufacturing, processing, treatment, preservation, and slaughter.

probiotics (*probiotiques*)

microorganisms that provide health benefits when consumed.

processing aids (*auxiliaires de production*)

substances added to food during processing for a technological effect, but are not present in the finished product or are at insignificant and non-functional levels.

production unit (*unité de production*)

identifiable portion of an operation as outlined in the organic plan in which production or preparation of an organic product occurs. For example, a production unit may be a field with clearly marked boundaries, a pasture, a greenhouse, a series of greenhouses, a building or buildings. A "livestock production unit" is a herd or flock of animals or birds with its associated infrastructure such as barns and pastures. An entire operation, even one with disconnected fields or buildings, may be considered one production unit if the whole operation is organic and following one organic plan. Where there is split or parallel production, organic production units are sufficiently segregated from non-organic production units to ensure that there is no cross-contamination.

prohibited materials (*matériaux interdits*)

materials prohibited by Clause 1.4.

prohibited substances (*substances interdites*)

substances prohibited by Clause 1.5 or not listed in CAN/CGSB-32.311.

radiation, ionizing (*radiation ionisante*)

any type of electromagnetic radiation that is capable of freeing electrons from an atom, causing the atom to become charged (or ionized). Ionizing radiation includes X-rays and gamma rays. Irradiated food is typically exposed to ionizing radiation generated from Cobalt-60 or Cesium-137; or X-rays generated by a machine source operated at or below an energy level of 5 MeV; or from electrons generated by a machine source operated at or below an energy level of 10 MeV.

radiation, non-ionizing (*radiation non ionisante*)

any type of electromagnetic radiation that does not carry enough energy to ionize atoms. Has longer wavelengths (>100 nm), lower frequencies, and lower energy (mega-electron volts [MeV]) than ionizing radiation. Includes ultraviolet light, visible light, infra-red, microwaves, radio frequencies, and low, very low and extremely low frequencies.

records (*registres*)

information in written, visual or electronic form that documents the activities undertaken by an operator engaged in the production or preparation of organic products. See 4.4 for details.

removal event (*intervention subséquente*)

procedure performed prior to organic production runs, batches or loads, to prevent organic product from coming into contact with prohibited substances or commingling with non-organic products. Examples of removal events are rinsing with potable water, letting surfaces drip-dry, and purging a system with organic product.

salt (*sel*)

sodium chloride, or low-sodium and sodium-free substitutes that serve the purpose of providing salt flavour, nutrition or microbial control in a product. When used as a soil amendment, the term “salt” also includes calcium chloride and potassium chloride.

seed coating (*pelliculage des semences*)

a substance applied to the surface of a seed for a function distinct from seed pelleting.

seed pelleting (*enrobage des semences*)

augmenting a seed with substances to increase the size of seed to facilitate seeding.

seed priming (*trempage des semences*)

adding water-based solutions into seeds, before sowing, to improve the uniformity and speed of germination. Once wetted, the seed is dried to allow for shipping and short-term storage.

seed treatment (*traitement des semences*)

adding pest control products, plant growth regulators or inoculants, etc., to seeds to assist with their field performance. Can be performed pre- or post-sowing.

sewage sludge (*boues d'épuration*)

solid, semi-solid and liquid fractions generated by municipal or industrial sewage treatment facilities including, but not limited to, domestic septage, scum or solids (biosolids).

soil (*sol*)

mixture of minerals, organic matter and living organisms.

Specified Risk Material (SRM) (*matériel à risque spécifié [MRS]*)

the skull, brain, trigeminal ganglia (nerves attached to the brain), eyes, tonsils, spinal cord and dorsal root ganglia (nerves attached to the spinal cord) of cattle aged 30 months or older; and the distal ileum (portion of the small intestine) of cattle of all ages.

split operation (*exploitation fractionnée*)

operation that produces or prepares both organic and non-organic agricultural products, including transitional products.

split production (*production fractionnée*)

production or preparation of both organic and non-organic agricultural products, including transitional products.

symbiotics (*symbiotiques*)

combination of prebiotics and probiotics. Many contain a combination of probiotic culture with a prebiotic substrate that favours its growth.

synthetic biology (*biologie synthétique*)

broadly describes the design and construction of novel artificial biological pathways, organisms or devices, or the artificial redesign of existing natural biological systems.

synthetic substance (*substance synthétique*)

manufactured substance, including petrochemicals, formulated by a chemical process or by a process that chemically alters compounds extracted from plant, microorganisms, animal or mineral sources. This term does not apply to compounds synthesized or produced by physical processing or biological processes, which may include heat and mechanical processing. However, minerals altered through chemical reactions caused by heating or burning are classified as synthetic.

traceability (*traçabilité*)

ability to track product, backwards and forwards, through all stages of production and preparation.

traditional breeding (*sélection génétique traditionnelle*)

traditional breeding has its basis in biological sexual reproduction. It occurs between closely related organisms, in reproductive cells, and between related chromosomes through homologous recombination.

transition period (*période de conversion*)

period of time between the start of an organic management program and the attainment of organic status by a production unit or operation.

transplant (*plant repiqué*)

seedling that has been removed from its original place of production, transported and replanted.

unfit animal (*animal inapte*)

as defined in *Health of Animals Regulations Part XII*, or generally, an animal that exhibits any signs of infirmity, illness, injury or of a condition that indicates it cannot be transported without suffering.

veterinary biologic (*produit biologique vétérinaire*)

helminth, protozoa or microorganism; or a substance or mixture of substances produced from animals, helminths, protozoa or microorganisms; or a substance of synthetic origin that is manufactured, sold or represented for use in restoring, correcting or modifying functions in animals or for use in the diagnosis, treatment, mitigation or prevention of a disease, disorder, abnormal physical state, or the symptoms thereof, in animals. Veterinary biologics include vaccines, bacterins, bacterin-toxoids, immunoglobulin products, diagnostic kits and any veterinary biologic derived through biotechnology.

veterinary drug (*médicament vétérinaire*)

substance or mixture of substances represented for use or administered in the diagnosis, treatment, mitigation or prevention of disease, disorder, abnormal physical state or its symptoms in animals; restoring, correcting or modifying functions in animals.

wild crop (*plante sauvage*)

plants collected or harvested in their natural habitat.

yeast (*levure*)

single-celled microorganisms that produce enzymes, carbon dioxide (CO₂), and other metabolites from carbohydrates, whose functional roles are frequently used in the processes of fermentation, baking and flavouring foods, adding nutritional value and providing health benefits.

yeast autolysate extract (*extraits d'autolysats de levure*)

water-soluble components of the yeast cell, generally produced by autolysis, a process in which the rupture of cell wall is induced mechanically or chemically.

4 Organic plan

4.1 The operator shall prepare an organic plan outlining the details of transition, production, preparation and management practices.

4.2 The organic plan shall be updated, at a minimum, on an annual basis to address changes to the plan or management system, problems encountered in executing the plan, and measures taken to overcome such problems. If there are any other changes throughout the year, the organic plan will need to be updated and submitted to the Certification Body. Examples of such changes include growing a new crop, processing a new organic product, adding or dropping a field from production, or adding new inputs.

4.3 The organic plan shall include a description of the internal record-keeping system, with documents sufficient to meet the audit requirements specified in Clause 4.4, and other record-keeping requirements indicated throughout the standard.

4.4 Identification and record keeping

4.4.1 The operator shall record the lot code or other unique identifier, such as harvest date, manufacture date, best-before date, animal ear tag number, or flock number, etc., that was assigned to an organic product, animal or flock for the purposes of identification, traceability and accountability. Lot codes or other unique identifiers shall be apparent on all non-retail and retail final consumer sale units. Documentation indicating lot codes or other unique identifiers shall accompany bulk products.

4.4.2 The operator shall maintain records and relevant supporting documentation in sufficient detail to ensure they are readily understood and auditable. These records shall include documentation on inputs and materials, production, preparation, storage, transport and sales related to:

- a) organic unprocessed plants and mushrooms, and plant and mushroom products;
- b) organic livestock and insects, and livestock and insect products;
- c) organic processed agricultural crop and livestock products;
- d) organic livestock feed; and
- e) organic seed.

4.4.3 The records shall reflect the scope, complexity, and activities of the operation and are not limited to:

- a) visual aids, such as maps and flow charts;
- b) common operational records, such as:
 - 1) purchase and sales records;
 - 2) receiving logs;

- 3) records of inputs and substances used, including remaining inventories;
 - 4) sanitation logs and checklists;
 - 5) inventories of raw ingredients and finished goods;
 - 6) training records; and
 - 7) inbound and outbound transportation and distribution records.
- c) other crop and livestock production records, such as crop rotations, planting, tillage, harvest, herd or flock records, livestock health and storage; and
- d) preparation and handling records, such as manufacturing logs and production records.

4.4.4 Records, supporting documentation, and organic certification documentation shall be readily available and auditable to demonstrate compliance with this standard. They shall fully disclose all activities and transactions allowing for complete traceability and accountability. They shall identify:

- a) the origin, nature, composition and quantity of organic products, including ingredients that have been delivered to, used, and/or produced on the production unit or operation;
- b) the origin, nature and quantity of inputs, non-organic ingredients, and processing aids used in organic production and delivered to the production unit;
- c) all international shipment documents upon import (e.g., phytosanitary certificates, transaction certificates, and other applicable documents) to ensure organic integrity is maintained;
- d) the nature, quantity and consignees of products that have left the production unit or operation;
- e) for incoming shipments, all the roles and activities of intermediaries (such as brokers, traders, distributors, third party storage, repackers, conditioners, or cross dockers) involved in handling or moving shipment to the operation;
- f) for outgoing shipments, intermediary details are required only up to the change in ownership;
- g) organic certification documentation is required for any repacking, conditioning or relabelling activities.

4.4.5 An identification system shall be implemented to distinguish non-organic crops, livestock, and products from their organic counterparts. For example, organic and non-organic crops or livestock could differ in their general appearance, colour or type.

4.4.6 The operator shall design and implement a risk management plan to prevent GE contamination, which may include strategies such as physical barriers, border rows, delayed planting, testing of seeds, isolation distances; and equipment and storage sanitation protocols. When transition is preceded by GE crop production, the operator shall implement a risk management plan to prevent emergence of GE seed after the 36-month transition period.

4.4.7 Records shall be maintained for at least five years beyond their creation.

4.4.8 If a pest control substance that is not listed in CAN/CGSB-32.311 is used under any mandatory government program, the operator shall monitor and document its use.

Note: In the event of an emergency pest outbreak, Canadian operators are required to notify their certification body immediately of any change that may affect organic product certification.

5. Crop production

Clause 8.4 on Transport applies to the transportation of plants and harvested crops.

5.1 Land requirements for organic crop production

5.1.1 This standard shall be fully applied on a production unit for at least 12 months before the first harvest of organic products. Prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop. When transition is preceded by GE crop production, the 36-month transition period is calculated from the date on which the growth of the GE crop is terminated (e.g., by harvest, tillage, etc.). The operator shall implement a risk management plan to prevent emergence of GE seed after the 36-month transition period (per subclause 4.4.4).

5.1.2 When new production units are added to an existing organic operation, the operator shall provide records to show that prohibited substances have not been used for at least 36 months (see subclause 5.1.1) and verification shall be conducted before the first harvest of products from this new production unit.

Note: Part 13 Organic Products of the *Safe Food for Canadians Regulations* requires that the application for the organic certification of crops grown in fields, gardens or pastures be filed at least 15 months before the day on which the food is expected to be sold. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit during production in the year before these crops may be eligible for certification and one inspection during production in the year these crops are eligible for certification.

5.1.3 The operation shall aim at a complete transition of its production. During the transition period, the operation can maintain, in addition to the production in transition, a non-organic system of production (split operation) that shall be entirely separate and identified separately, pending its incorporation into the overall transition process.

5.1.4 The operation can be converted one production unit at a time, and each converted production unit shall respect the requirements of this standard. The exception to this norm, parallel production, is only allowed in the following cases:

- a) annual crops harvested during the final 24 months of the transition period when fields are added to existing operations;
- b) perennial crops (already planted);
- c) agricultural research facilities; and
- d) production of seed, vegetative propagating materials and transplants.

5.1.5 The following special conditions shall be observed for parallel production:

- a) The operator shall clearly demonstrate that the identity of the crops produced in this manner can be maintained during their production, harvesting, storage, processing, packaging and marketing; and/or
- b) The operator shall maintain verifiable, accurate records of both non-organic and organic produce and product storage, transportation, processing and marketing.

Note: Parallel production crops, both organic and non-organic, are inspected just prior to harvest and an audit of all parallel production crops occurs after harvest.

5.1.6 All production units shall have distinct, defined boundaries.

5.1.7 Production units shall not alternate between organic and non-organic management.

5.1.8 By exception, due to catastrophic or uncontrollable factors, an operator may temporarily take land out of organic management, provided that:

- a) the operator submits written notice to the certification body of the intent to remove temporarily a production unit from organic management, justifies why organic status cannot be maintained, and receives conditional approval prior to the use of substances or methods prohibited by this standard. The final decision of the certification body to approve alternation between organic and non-organic management will be based on a written action plan that includes:

- 1) a description of the intended change in management, including a timeline and details of the substances and practices that will be used during the period of non-organic management;
 - 2) a timeline for transitioning the land back to organic management; and,
 - 3) a description of how the organic plan will be amended to avoid future recurrence, if applicable.
- b) The operator shall maintain verifiable, accurate records of both non-organic and organic production and product storage, processing, transportation, and marketing.
- c) The land shall comply with requirements established in subclause 5.1.1 to transition back to organic status and comply with subclause 5.1.3.

Without prior approval by the certification body as described in subclause 5.1.8 a), the production unit shall not be eligible for organic status for five (5) years following the last use of a prohibited substance or prohibited practice.

Note: Operators are required to notify their certification body immediately of any change that may affect organic product certification.

5.2 Environmental factors

5.2.1 Measures shall be taken to minimize the physical movement of prohibited substances onto organic land and crops from:

- a) adjacent areas; and
- b) equipment used for both organic and non-organic crops.

5.2.2 If unintended contact with prohibited substances is possible, distinct buffer zones or other features sufficient to prevent contamination are required:

- a) buffer zones shall be at least 8 m (26 ft 3 in.) wide;
- b) permanent hedgerows or windbreaks, artificial windbreaks, permanent roads, or other physical barriers may be used instead of buffer zones;
- c) crops grown in buffer zones shall not be considered organic whether or not they are used on the operation; and
- d) crops at risk of contamination from commercialized GE crops shall be protected from cross-pollination. Mitigation strategies such as, but not limited to, physical barriers, border rows, strategic testing or delayed planting shall be implemented unless generally accepted isolation distances for the at-risk crop type are present (see Note below).

Note: Generally accepted isolation distances for crops at risk of contamination from commercialized GE crop types include: soybeans — 10 m (33 ft); corn — 300 m (984 ft); canola, alfalfa (for seed production) and apples — 3 km (1.8 mi.).

5.2.3 Untreated wood or wood treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 is permitted, such as for fence posts.

- a) For new installations or replacement purposes, fence posts or wood treated with prohibited substances are not permitted. Alternatives, such as metal, plastic, concrete or protective sleeves, may be used.
- b) An exception, fence posts treated with prohibited substances are permitted as perimeter fencing of production units to manage non-organic livestock or keep wildlife out. Treated fence posts shall not come into contact with an organic crop (including roots). If the livestock is organic, see 6.7.9.

- c) Recycling of previously used fence posts treated with prohibited substances within the operation is permitted provided that they were installed prior to the operation's initial certification or installed per exception b) and there is no contact with an organic crop (including roots).

5.2.4 The operator shall include, within the operation, measures that protect existing biodiversity and shall intentionally promote and protect ecosystem health by incorporating one or more of the following features (in addition to the organic practices of cover cropping, green manures, responsible tillage, and diversified crop rotation):

- a) agroforestry;
- b) biomass plantings, such as for biofuel or bedding;
- c) grassed waterways;
- d) pollinator habitats or insectary plantings (such as interplanting, companion planting, or banker plants to provide habitat for beneficial organisms, including beneficial insects);
- e) wildlife habitat or avian sanctuary;
- f) tree and shrub establishment;
- g) vegetative barriers and field borders, wind breaks, or shelter belts;
- h) water conservation practices;
- i) restoration and maintenance of wetlands;
- j) perennial forage or perennial plantings; or
- k) pasture.

Note: Existing native prairie, parkland, or wetland habitats should be maintained and enhanced whenever possible.

5.2.5 Inorganic waste materials shall not be left to accumulate on, or be incorporated into production units. Examples include baler twine, irrigation drip tape, agricultural tarps, potting containers and row cover.

5.3 Seeds, seedlings and planting stock

5.3.1 Organic seed, annual seedlings/transplants, perennial seedlings/transplants, planting stock, (such as bulbs, tubers or cuttings) or other propagules (such as tissue culture) shall be used. See definitions for “annual seedling,” “perennial crop,” “planting stock,” and “transplant” in Clause 3.

5.3.2 Organic seed and planting stock may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.

5.3.3 Perennial transplants propagated from non-organic planting stock shall be managed in accordance with this standard for at least 12 months before the consumer prepackaged transplant (for retail) may be organic. Transplants for use as an input to organic crop production (subclause 5.3.6 e) may be organic in a shorter period of time.

5.3.4 Non-organic seed (or planting stock) produced on transitional land within the operation or in buffer zones may be planted within the same operation, providing the buffer zone is managed within the operation.

5.3.5 Non-organic seed and annual or biennial planting stock from outside the operation is permitted provided that:

- a) the seed or planting stock variety is not produced on or available from within the operation;
- b) organic seed or planting stock of that variety is not commercially available, and a documented search involving potential, known organic suppliers has been conducted; and

- c) when treated, primed, pelleted or coated, it is with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 with the following exceptions:
 - 1) seed primed with substances not listed on Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 is permitted providing that the priming process does not contain substances that are not listed on Table 4.2 (Column 2) or Table 7.3 of CAN/CGSB-32.311;
 - 2) seeds and planting stock treated with substances necessary for compliance with international, federal or provincial phytosanitary or food safety regulations and approved for use by regulatory agencies such as Pest Management Regulatory Agency (PMRA) are permitted.

5.3.6 Non-organic perennial seedlings/transplants and perennial planting stock are permitted (see “perennial crop” and “planting stock” definitions in Clause 3) provided that:

- a) the variety is not produced on or available from within the operation;
- b) organic seedlings/transplants or planting stock of that variety are not commercially available, and a documented search involving potential, known organic suppliers has been conducted;
- c) when treated, it is with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311 except if the planting stock has been treated with substances necessary for compliance with international, federal or provincial phytosanitary or food safety regulations and approved for use by regulatory agencies such as Pest Management Regulatory Agency (PMRA);
- d) the land on which perennial planting stock or perennial seedlings/transplants are planted is subject to the requirements of subclause 5.1.1;
- e) perennial seedlings/transplants, such as strawberry plugs or potted thyme, shall be organic when the first harvest of organic product is within 12 months of planting into the organic production unit. Operators are granted an exemption until the 2030 planting season allowing the use of non-organic perennial seedlings/transplants for harvest within 12 months of planting;
- f) non-organic perennial seedlings/transplants shall be managed in accordance with this standard for at least 12 months between planting into the organic production unit and the first harvest of organic products;
- g) non-organic perennial planting stock (which is without soil or growth media as defined in Clause 3) that has not been treated with prohibited substances post-harvest (e.g., treated during storage after being dug up from the non-organic field) may be used to produce organic product within 12 months of planting on the organic operation and being managed in accordance with this standard; and
- h) non-organic perennial planting stock (which is without soil or growth media as defined in Clause 3) that has been treated with prohibited substances post-harvest (e.g., during storage after being dug up from the non-organic field) shall be managed in accordance with this standard for at least 12 months between planting on the organic operation and the first harvest of organic products.

5.3.7 Seedlings and transplants

Seedlings and transplants shall be produced under the following conditions:

- a) all subclauses of 7.5 apply to the soil used for production (except soil volumes specified in subclauses 7.5.5.2, 7.5.5.3, and 7.5.5.4). A soilless substrate/growth media may be used at first seeding without nutrient supplementation;

- b) seedlings/transplants that are started in winter or spring for use within the operation may be grown by the operation in structures under 100% artificial lights from seeding to final transplanting, meaning moving a seedling into the production unit (container or soil); and
- c) substrates used in the production of propagules produced through plant tissue culture or micropropagation shall comply with 1.4 a) of this standard.

5.4 Soil fertility and nutrient management

5.4.1 The main objective of the soil fertility and nutrient management program shall be to establish and maintain a fertile soil using practices that:

- a) maintain or increase levels of soil organic matter;
- b) promote an optimum balance and supply of nutrients;
- c) stimulate biological activity within the soil; and
- d) mitigate excess nutrient build-up in the soil or leaching into the environment.

5.4.2 Soil fertility and biological activity shall be maintained or increased through:

- a) crop rotations or sequences that are diversified, including:
 - 1) plow-down crops, legumes, catch crops and deep-rooting plants;
 - 2) cover crops to prevent erosion; and
 - 3) no more than two consecutive years of the same annual crop species for use on a farm or intended for sale;
- b) incorporation of plant and animal matter in compliance with this standard and with Table 4.2 (Column 1) of CAN/CGSB-32.311, including:
 - 1) composted animal and plant matter;
 - 2) non-composted plant matter, specifically legumes, plow-down crops or deep-rooting plants within the framework of a multi-crop rotation; and
 - 3) unprocessed animal manure, including liquid manure and slurry, subject to the requirements of 5.5.1; and
- c) where appropriate, perennial cropping systems shall employ techniques, such as alley intercropping with permanent cover, cover crops or plow-down crops.

5.4.3 Plant and livestock materials, as well as supplemental minerals and fertilizers, shall be managed to maintain or improve soil organic matter content, crop nutrients and soil fertility, while minimizing negative environmental impact. This shall be done in a manner that does not contribute to the contamination of crops, soil or water by plant nutrients, pathogenic organisms, heavy metals or residues of prohibited substances.

5.4.4 The organic matter produced on the operation shall be the basis of the nutrient cycling program. It may be supplemented with other nutrient sources described in this standard or listed in Table 4.2 (Column 1) of CAN/CGSB-32.311. However, water-soluble sources of nitrogen and phosphorus shall be limited to 20% of the crop's needs of each nutrient based on realistic projected yields for the crop. Manure, anerobic digestate, and compost or compost tea are not included in the 20% limitation unless fortified with water-soluble sources of nitrogen and phosphorus. Manure is subject to the requirements of 5.5.1, and, in all cases, subclause 5.4.3 shall be respected.

If the 20% limitations of soluble nitrogen or phosphorus are exceeded in existing nutrient management plans, the operator shall develop a corrective action plan by the end of March 2027, to reduce the use of these soluble nutrients by the end of December 2029.

5.4.5 Tillage, when practiced, shall be conducted in a responsible manner in order to:

- a) maintain or improve the physical, chemical and biological condition of soil;
- b) minimize damage to the structure and tilth of soil;
- c) reduce soil salinization; and
- d) minimize soil erosion.

The operator shall maintain records of tillage events.

Responsible tillage to mitigate risks of soil degradation from erosion, compaction/plow pan formation, salinization, and soil organic matter loss is described as: The use of tillage strategically and purposefully within cropping systems to enhance management and productivity in cropping systems while minimizing soil degradation. Practices may include reducing the frequency, intensity, aerial extent, and depth of tillage, as well as minimizing topsoil inversion and maintaining surface residue.

5.4.6 Burning to dispose of crop residue produced on the operation is prohibited. However, burning may be used for documented problems with pests, including insects, diseases or weeds (see 5.6.1), or to stimulate seed germination.

5.5 Manure management

5.5.1 Manure sources

5.5.1.1 Animal manure produced on the operation shall be used first. When all available manure is used up, organic manure from other sources may be used. If organic manure is not commercially available, non-organic manure is permitted provided that:

- a) the non-organic source is not a fully caged system in which livestock cannot turn 360°; and
- b) livestock is not permanently kept in the dark; and
- c) the source and quantity of manure, type of livestock, and evaluation of the criteria in subclauses 5.5.1.1 a) and 5.5.1.1 b) shall be recorded.

Note: Organic operations should make it a priority to use manure obtained from transitional or extensive livestock operations, not from landless livestock production units or from livestock operations that use genetically engineered (GE) ingredients or GE derivatives in animal feeds.

5.5.2 Land application of manure

5.5.2.1 The manure application program shall address land area, rate of application, time of application, incorporation into the soil and retention of nutrient components.

5.5.2.2 Soil amendments, including liquid manure, slurries, compost tea, solid manure, raw manure, compost and other substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311, shall be applied to land in accordance with good nutrient management practices.

Note: In Canada, some additional provincial requirements may also apply.

5.5.2.3 Where manure is applied, the soil shall be sufficiently warm and moist to ensure active bio-oxidation.

5.5.2.4 The seasonal timing, rate and method of application shall ensure that manure does not:

- a) contribute to the contamination of crops by pathogenic bacteria;
- b) create significant run-off into ponds, rivers and streams; and
- c) contribute significantly to ground and surface water contamination.

5.5.2.5 Animal manure that is neither composted (according to Table 4.2 Compost of CAN/CGSB-32.311) nor dried (according to Table 4.2 Animal manure, dried), nor otherwise specifically listed in Table 4.2 Column 1, shall be:

- a) incorporated into the soil at least 90 days before the harvest of crops that do not come into contact with soil and are intended for human consumption. As an exception, the manure may be incorporated into the soil at least 70 days before the harvest of grain crops that do not come into contact with soil and are intended for human consumption when not consumed in their raw state; or
- b) incorporated into the soil at least 120 days before the harvest of crops that have edible parts that come into direct contact with the surface of the soil or with soil particles.

Note: Operators should ensure compliance with federal, provincial, and commodity association on-farm food safety regulations and guidelines.

5.5.2.6 If livestock are used as part of the cropping or pest control program, a management plan shall be in place to ensure that livestock are controlled and that manure or manure-related contamination does not reach the portion of the crop intended for harvest.

5.5.3 Manure processing

Processing of animal manure using physical treatment (for example, dehydration), biological treatment, or treatment with substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 is permitted. Loss of nutritional elements due to processing shall be minimized.

5.6 Management of crop pests, including insects, diseases and weeds

5.6.1 Practices to control pests, including insects, diseases and weeds, shall focus on organic management practices that enhance crop health and reduce losses due to weeds, disease, insects and other pests. Management practices include cultural practices (for example, crop rotations, establishment of a balanced ecosystem, and use of resistant varieties), mechanical techniques (for example, sanitation measures, cultivation, trapping, mulching and grazing) and physical techniques (for example, flaming against weeds and the use of heat against diseases).

5.6.2 When organic management practices alone cannot prevent or control crop pests, including insects, diseases and weeds, a biological or botanical substance, or other substance listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 may be used. Conditions that led to the use of substances shall be documented in the organic plan (see Clause 4).

5.6.3 If application equipment, such as a sprayer, is used to apply prohibited substances, it shall be thoroughly cleaned prior to use in an organic crop.

5.7 Irrigation

The irrigation of organic crops is permitted provided that the operator documents the precautions taken to prevent contamination of land and products with substances not included in CAN/CGSB-32.311.

5.8 Crop product preparation

Wherever organic product preparation takes place, Clauses 8.1 and 8.2 apply.

5.9 Facility pest management

Subclause 8.3 applies to pest management practices in and around crop facilities.

6 Livestock production

Livestock excludes apiculture, which is covered in Clause 7.1, and insect production, which is covered in Clause 7.7.

Clause 8.4 on Transport applies to the transportation of organic livestock.

6.1 General

6.1.1 Livestock can make an important contribution to an organic agricultural system by:

- a) improving and maintaining the fertility of the soil;
- b) managing the flora through grazing;
- c) enhancing biodiversity; and
- d) facilitating complementary interactions on the operation.

6.1.2 Livestock breeds, strains and types shall be

- a) suitable for, and able to adapt to, site-specific conditions within the local environment and production system;
- b) known for their absence of disease and health problems, specific to breeds or strains; and
- c) recognized for their vitality and resistance to prevalent diseases and parasites.

6.1.3 Livestock production is a land-related activity. Herbivores shall have daily access to pasture during the grazing season (see definition in Clause 3) and access to the open air at other times whenever weather conditions permit.

- a) Calculated on the basis of daily dry matter intake, the consumption of grazed forage by ruminants that have reached sexual maturity shall represent a minimum of 30% of the total forage intake.
- b) Consumption of grazed forage shall rise above 30% of forage intake during high forage growth periods.
- c) Consumption of grazed forage below 30% of forage intake is permitted at the beginning and end of the grazing season.
- d) Producers shall record the following details of the grazing season:
 - 1) date of the beginning and end of the grazing season;
 - 2) dates of confinement periods and reasons for confinement; and
 - 3) rotation details including entry and exit dates, size of area, and number of animals on each paddock or pasture. For example, a grazing calendar or grazing chart can be used.
- e) A minimum of 0.13 ha (0.33 ac.) per animal unit shall be devoted to grazing. [One animal unit = one cow or one bull, or two calves each 102 to 227 kg (225 to 500 lb), or five calves, each less than 102 kg (225 lb), or four ewes and their lambs, or six does and their kids].
- f) Other livestock, including poultry, shall have access to the outdoors whenever weather conditions permit;
- g) Winter-only production of poultry is restricted to operations that are able to comply with land-related requirements for the specific livestock type, regardless of the time of year (see subclause 6.13.13);
- h) Exceptions in subclauses 6.7.2 and 6.11 may apply.

6.1.4 Livestock stocking rates shall correspond to local agri-climatic conditions in Canada and take into consideration feed production capacity, stock health, nutrient balance and environmental impact.

6.1.5 Livestock management shall aim to utilize natural breeding methods, minimize stress, prevent disease, progressively eliminate the use of chemical allopathic veterinary drugs, including antibiotics, and maintain animal health and welfare.

6.1.6 As a general principle, the operator shall demonstrate their commitment to animal welfare. When an animal welfare issue is identified, the operator shall develop a corrective action plan. The operator shall document demonstrated improvements in animal welfare practices and shall make available upon request any documents or assessments mandated by industry associations.

6.1.7 The health and welfare of organic livestock shall be monitored, as well as their housing, feeding, watering and fencing systems, at the frequency required in the applicable Code of Practice (see Clause 2.4) or an equivalent or superseding welfare program.

- a) Where the Code of Practice or equivalent programs do not regularly require daily checks, at a minimum, all confined livestock (those not on pasture or extensive rangeland) and livestock reliant on a mechanical feed or water source shall be monitored at least once daily.
- b) Individuals responsible for monitoring livestock shall be trained.

6.2 Origin of livestock and livestock products

6.2.1 Origin of livestock

6.2.1.1 Breeding stock shall:

- a) be bred using natural methods of reproduction or artificial insemination, including mechanically separated sexed semen;
- b) not be bred using embryo transfer or breeding techniques using genetic engineering or related technology;
- c) not be administered reproductive hormones to trigger and synchronize estrus;
- d) be permanently identifiable and traceable to their birth on an organic operation or to their date of entry into organic management.

6.2.1.2 Livestock shall be continuously managed organically from birth or their transition date.

- a) Breeding stock and dairy animals shall only enter organic management once, either at birth or when transitioned into organic management. When a non-organic breeding animal enters into organic management, its meat shall never be organic.
- b) Livestock removed from an organic operation and subsequently managed on a non-organic operation shall be considered non-organic and shall not be re-transitioned into organic management.

6.2.1.3 Animals purchased for breeding shall be organic, except in the following circumstances:

- a) when suitable organic breeding stock is not commercially available, non-organic breeding stock may be integrated into the organic operation provided that:
 - 1) a documented search of potential, known organic breeding stock suppliers has been conducted; and
 - 2) females are non-gestating and non-lactating at their time of arrival on the organic production unit, except replacement gilts, which shall be integrated before the last third of gestation.
- b) in case of catastrophic events, such as a barn fire or disease leading to repopulation, non-organic breeding stock (excluding poultry) may be brought onto an organic operation before the last third of gestation if suitable organic animals are not commercially available (as defined in Clause 3).

6.2.1.4 Organic ruminant producers shall produce sufficient suitable replacement stock within the organic operation. When suitable replacement stock cannot be produced on the operation in sufficient numbers, purchase of replacement stock may be supplemental (less than 50%) to on-farm production of ruminant breeding stock.

Note: It is expected that breeding stock replacement rates in organic farms be low and breeding stock lifespans be long and healthy. If a significant portion of the breeding stock on an operation requires replacement each year, operators are encouraged to review their organic management practices and investigate potential changes to improve sustainability and increase breeding stock longevity.

6.2.2 Organic livestock products

6.2.2.1 Organic livestock products shall be from livestock raised according to this standard.

6.2.2.2 Organic milk shall be the product of lactating ruminants born on organic production units and under continuous organic management, except in the following circumstances:

- a) when operations initially transition into organic production following the requirements and allowances in 6.3; or
- b) during integration of non-organic breeding stock following the requirements and allowances in 6.2.1.3, and under continuous organic management for at least 12 months.

6.2.2.3 Organic meat and slaughter by-products (e.g., bones, gelatin, etc.), excluding poultry products, shall be the product of animals born on organic production units and under continuous organic management from the start of the dam's gestation period, except in the following circumstances:

- a) when operations initially transition into organic production following the requirements and allowances in 6.3; or
- b) during integration of non-organic breeding stock following the requirements and allowances in subclause 6.2.1.3.

6.2.2.4 Organic poultry products (e.g., eggs, meat and slaughter by-products) shall be the product of birds under continuous organic management beginning no later than the second day of life. No medication other than vaccines shall be used to treat fertilized eggs or day-old poultry.

6.3 Transition of livestock production units to organic production

6.3.1 Production of organic livestock products may begin, and offspring born of transitioned breeding stock may receive organic status, only when the livestock production unit has met the following requirements:

- a) all land to which livestock have direct access, including pastures and outdoor areas, has completed organic transition as per Clause 5.1;
- b) all rations meet organic feeding requirements in 6.4, with the exception for transitional feed in subclause 6.3.5; and
- c) all applicable organic livestock production practices are implemented and documented.

6.3.2 During the final three months of the 12-month transition of livestock production units:

- a) feed shall be organic, or produced within the operation on lands that are in their final year of transition into organic production; and
- b) all applicable organic livestock production practices are implemented and documented.

6.3.3 During the first nine months of the 12-month transition of livestock production units:

- a) at least 80% of feed (dry matter basis) for transitioning breeding stock shall be either organic, or transitional feed produced within the operation;
 - 1) the remaining 20% of feed for transitioning breeding stock may be non-organic;
 - 2) use of non-organic feed shall be documented and traceable; and
- b) plans shall be in place to comply with all applicable organic livestock production requirements.

6.3.4 Pasture, feed and forage that is produced on the operation in the final 12 months of the land transition period may be consumed by livestock in the same production unit. When this feed and forage is stored, it:

- a) may be fed as organic within the livestock production unit for up to 36 months following the completion of transition; and
- b) shall not be considered organic outside the livestock production unit.

6.3.5 When transitioning additional land and expanding existing organic herds, transitioning breeding stock brought onto the operation may graze third-year transitional pasture until the beginning of the last third of gestation.

6.4 Livestock feed

6.4.1 The operator shall provide an organic feed ration that is balanced to meet the nutritional requirements of the livestock.

6.4.2 Livestock feed shall consist of substances that are necessary and essential for animal health, well-being and vitality, and that meet the physiological and behavioural needs of the species in question.

6.4.3 Operators shall hold relevant professional qualifications, or maintain a relationship with a qualified expert or registered professional, such as an agrologist, nutritionist or experienced peer, who can assist with nutritional needs of animals as described in 6.4.1 and 6.4.2.

6.4.4 Specific livestock rations shall take the following into account:

- a) for young mammals, the need for natural milk, including colostrum, within the first day of life;
- b) in dairy operations, offspring may be taken from their dam at the age of 24 hours, provided that they receive colostrum. If contagious diseases are present in the herd or flock, removal can occur sooner than 24 hours provided that the calves, lambs or kids receive colostrum.

Note: It is recommended to allow prolonged suckling, or contact, beyond 24 hours between dairy offspring and dams, for example by keeping offspring with dams for some portion of the day (calf-sharing) or using foster animals (nurse cows). This note will be reviewed in 2031.

- c) in meat operations when removal of calves, lambs or kids from their dam is necessary to prevent the spread of a contagious disease, the use of non-organic milk or non-organic milk replacer is permitted as part of a veterinary-approved plan of disease eradication if organic alternatives are commercially unavailable. The veterinary-approved plan of eradication shall include a timeline and preventative measures such as testing milk, blood or manure, or pasteurizing milk. In order of preference, the following can be used (provided it is free of medication):
 - 1) organic milk (including pasteurized);
 - 2) organic milk replacer;
 - 3) non-organic milk; or
 - 4) non-organic milk replacer;
- d) calves shall be given fresh, whole, organic milk or organic milk replacer provided that it is free of medication until the age of three months;
- e) calves can be fed milk from an organic cow that received treatment with antibiotics if a withholding period of twice the label requirement or 14 days, whichever is longer, is applied;
- f) lambs and kids shall be given fresh, whole, organic milk or reconstituted organic milk until the age of two months or a weight of 18 kg (39.7 lb);
- g) ruminants shall be weaned gradually to minimize stress;
 - 1) dam-raised calves, lambs, and kids shall be weaned by limiting dam contact or nursing using strategies such as fenceline weaning, nose paddle/two-stage weaning, or natural weaning;
 - 2) calves, lambs, and kids that are separated from their dams shortly after birth and fed milk (hand-raised) shall be weaned from milk gradually by reducing the quantity or frequency of milk feeding over at least five days;

Note: Research on the benefits and methods of gradual weaning in non-ruminants is still growing, and operators are encouraged to monitor developments in this area.

- h) if they are not nursing, young animals shall be fed to meet their nutritional requirements and to achieve optimal growth and health by using artificial teats to satisfy their motivation to suck;
- i) dairy calves, kids, and lambs shall have access to forage at all times;

Note: Refer to the *Code of Practice for the Care and Handling of Dairy Cattle* (see 2.4) for recommendations on colostrum feeding and the quantity of milk to be fed to dairy calves.⁴

- j) for ruminants, at least 60% of dry matter in daily rations shall consist of: hay; fodder that is fresh or dried; or ensiled forage, for example, fermented grass, legumes, or corn plants. An increased grain ration is permitted to ensure that nutritional requirements are met during uncommonly cold periods or when forage quality is compromised due to extraordinary weather events;
- k) when ensiled corn is fed, unless there is analysis to the contrary, it shall be considered 40% grain and 60% forage. The proportion of grain in ensiled corn shall be included in the percentage of grains in the ration [see 6.4.4j)];
- l) in the finishing phase, poultry shall be given grain;
- m) poultry and pigs shall have daily access to organic plant material other than grain (i.e., the cereals, pulses and oilseeds normally found in the concentrate portion of a ration). Acceptable sources include but are not limited to pasture, hay, straw, alfalfa pellets, corn cobs, vegetables or fruit;
- n) poultry shall be fed daily. A "skip-a-day" feeding regime for breeding birds is prohibited;
- o) rabbits shall be given forage, such as grass and hay, and have access to material that keeps teeth healthy, such as gnawing blocks, root vegetables and tree branches. Substances in gnawing blocks shall be listed in Table 5.2 of CAN/CGSB-32.311.

6.4.5 The following feed, feed additives and feed supplements are prohibited:

- a) feed and feed additives, including amino acids and feed supplements, that contain substances not listed in Table 5.2 of CAN/CGSB-32.311;
- b) feed medications or veterinary drugs, including hormones and prophylactic antibiotics, to promote growth;
- c) approved feed supplements or feed additives used in amounts greater than those required for adequate nutrition and health maintenance for the species at its specific stage of life;
- d) feeds that are chemically extracted or defatted with prohibited substances;
- e) feed that contains mammalian or avian slaughter by-products; an exception applies to insects (see subclause 7.7.2.2);
- f) feed that contains preservatives unless they are listed in Table 5.2 of CAN/CGSB-32.311;
- g) silage preservation products unless they are listed in Table 5.2 of CAN/CGSB-32.311;
- h) appetite enhancers or flavour enhancers unless they are listed in Table 5.2 of CAN/CGSB-32.311;
- i) feed formulas that contain manure or other animal waste; an exception applies to insects (see subclause 7.7.2.2); and
- j) feed that contains colouring agents unless they are listed in Table 5.2 of CAN/CGSB-32.311.

6.4.6 Livestock of all ages shall have access to clean, fresh water on demand. Livestock water sources shall be tested according to livestock drinking water quality guidelines and procedures outlined in quality assurance programs mandated by industry associations, if available, otherwise water testing shall be conducted according to the relevant Code of Practice (see 2.4).

6.4.7 Force feeding of ducks and geese is prohibited.

⁴ In this standard, Codes of Practice or Code of Practice refers to Canada's guidance for the care and handling of livestock. See Clause 2.4.

6.4.8 By exception, non-organic feed is permitted under the circumstances described in subclauses 6.4.8.1 and 6.4.8.2. Exceptional use of non-organic feed or forage in the case of a catastrophic event or forage shortage shall not affect the organic status of livestock for milk or meat.

6.4.8.1 If organic feed is unobtainable as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions), non-organic feed may be used for a maximum of ten consecutive days (or up to 30% non-organic feed for up to 30 consecutive days) to ensure a balanced livestock ration. Non-organic feed from land in transition to organic production and free of prohibited substances shall be used in preference to non-organic feed.

Note: The certification body should be notified as soon as possible after non-organic feed is used.

6.4.8.2 Non-organic, non-genetically engineered forage is permitted as follows, by exception, in the event of a regional forage shortage that is documented by the operator and, when possible, confirmed by a regional authority:

- a) Non-lactating cows, ewes and does, and replacement females may be given non-organic forage provided that the animals are segregated; are visually distinguishable (for example, have ear tags and age verification records); record keeping is maintained; and the non-organic forage is chosen with the following order of priority preference:
 - 1) non-organic forage from land in transition;
 - 2) non-organic forage grown without the use of prohibited substances;
 - 3) non-organic forage grown without the use of prohibited substances for at least 60 days prior to harvest;
 - 4) non-organic forage provided it is not a genetically engineered crop.
- b) If the quantity of forage allowed in 6.4.8.2 a) is insufficient, non-organic forage may comprise up to 25% of the forage ration for the entire ruminant herd in order of priority preference as outlined in 6.4.8.2 a).
- c) The operator shall design a contingency plan to address future forage shortages, which may include strategies such as growing more climate-adapted varieties, improving grazing practices, stockpiling a supply of forage, identifying alternative supply chains, varying herd size, and improving the resilience of on-farm forage production.

Note: The certification body should be notified before non-organic forage is used.

6.5 Handling and transport

6.5.1 Livestock shall be managed responsibly, with care and consideration. Stress, injury and suffering shall be minimized in all livestock handling practices, including transport and slaughter.

6.5.2 Operators shall demonstrate that all persons involved in handling livestock are trained in and use low-stress, calm handling methods to safeguard animal health and welfare.

6.5.3 Handling areas shall be maintained to provide good traction. Distractions that cause animals to balk shall be minimized or removed.

6.5.4 When moving animals, operators and staff shall use the following techniques in order of preference:

- a) working with an animal's flight zone (see "flight zone" in Section 3);
- b) visual aids, such as alternative driving aids (e.g., flags or sticks with plastic ribbons); or
- c) gentle use of paddles or boards.

6.5.5 When small animals other than poultry are picked up, they shall be moved in an upright position while fully supporting their body and/or placing them in a container or small vehicle (e.g., cart, sled).

6.5.6 Animals shall not be pulled or lifted by the fleece, hair, tail, skin, ears or limbs. Birds shall not be picked up solely by the head, neck, one wing or feathers.

6.5.7 The use of electric prods is prohibited except when human or animal health or safety is at risk. In this case, electric prods can only be used:

- a) as a last resort;
- b) when the animals have a clear path to move; and
- c) following the requirements in the applicable Code of Practice (see 2.4).

6.5.8 Any use of electric prods shall be documented. The operator shall develop a plan to avoid using the electric prod in the future. For example, the operator could identify issues that are triggering dangerous behaviour in livestock and remove such triggers, and/or improve handling facilities.

6.5.9 For the duration of the transport period (starting when feed, water, or rest are restricted until slaughter or until restoration of free access to feed, water and rest), the health and welfare of animals shall be protected. Factors that shall be taken into consideration to prevent harm in transport include:

- a) selection and condition of transport equipment (truck, trailer, container, crate, etc.) appropriate for the species and size of animals and environmental conditions;
- b) transport densities, taking into account temperature and environmental conditions, animal health, body condition, horn and coat status, and journey length; and
- c) compatibility of animals in the transport group, including species, size, age, horn status, sex and familiarity of individuals.

6.5.10 The use of allopathic tranquilizers is prohibited during transportation.

6.5.11 For the duration of the transport period as described in 6.5.9, animals shall have shelter against inclement weather, such as wind, rain and excessive heat or cold.

6.5.12 Fitness for transport shall be assessed before loading.

- a) Compromised animals (see definition in Clause 3) have a reduced capacity to withstand transport, and shall not be transported except directly to the nearest place, other than an assembly centre, where they can receive care or be humanely killed, and with special provisions required by *Part XII (Transport of Animals)* of the *Health of Animals Regulations*.
- b) Unfit animals (see definition in Clause 3) cannot be transported without suffering and shall not be transported other than for veterinary care and with special provisions required by *Part XII (Transport of Animals)* of the *Health of Animals Regulations*.

6.5.13 If livestock is unfit for transport and euthanasia is necessary, it shall be performed by competent personnel with appropriate equipment. The method used shall be an approved method from the relevant Code of Practice (see 2.4).

Note 1: It is recommended that all persons involved in transport participate in training to ensure competency in essential skills such as animal handling and knowledge of animal transport regulations. Available courses include Animal Health Canada's Canadian Livestock Transport Course (see Clause 2.5).

Note 2: Operators must comply with all applicable provincial and federal regulations related to transport and slaughter. For transportation and federal slaughter establishments in Canada, see the *Health of Animals Regulations* under the *Health of Animals Act* (Canadian Food Inspection Agency) and the *Safe Food for Canadians Regulations* under the *Safe Food for Canadians Act* (Canadian Food Inspection Agency). For additional guidance, refer to the transportation sections in the relevant Code of Practice (see Clause 2.4). For provincially regulated slaughter, refer to provincial legislation.

6.6 Livestock health care

6.6.1 The operator shall establish and maintain preventative livestock health care practices, including:

- a) the choice of appropriate breeds or strains of livestock, as specified in subclause 6.2.1;

- b) a feed ration sufficient to meet the nutritional requirements of the livestock, including vitamins, minerals, protein, fatty acids, energy sources, and fibre;
- c) housing, pasture conditions, space allowance and sanitation practices that minimize crowding and the occurrence and spread of disease and parasites;
- d) conditions appropriate to the species that allow for exercise, freedom of movement, and minimal stress;
- e) prompt treatment for animals with detectable disease, lesions, lameness, injury or other physical ailments;
- f) vaccines, in accordance with this standard and Table 5.3 of CAN/CGSB-32.311, if it has been documented that the targeted diseases are communicable to livestock on the production unit or operation and cannot be combated by other means;
- g) monitoring livestock Body Condition Scores (as defined in the relevant Code of Practice, see 2.4) and documenting any corrective actions taken;
- h) holding relevant professional qualifications or maintaining a relationship with a qualified expert or registered professional, such as a veterinarian, experienced peer, or expert at a provincial animal health centre, who can assist in the event of health issues.

6.6.2 The operator shall not administer:

- a) veterinary drugs, in the absence of illness, other than vaccines. Anaesthetics and analgesics are permitted, subject to the requirements for physical alterations in subclause 6.6.4;
- b) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion;
- c) synthetic parasiticides, except by way of an exception provided in subclause 6.6.11;
- d) antibiotics to meat animals or to birds for meat or egg production;
- e) chemical allopathic veterinary drugs (see definition in Clause 3), for example, pharmaceuticals, antibiotics, hormones and steroids, for preventative treatments.

6.6.3 Hormonal treatment shall only be used for therapeutic reasons and under veterinary supervision. The meat from treated animals shall not be organic unless the treatment is listed in Table 5.3 of CAN/CGSB-32.311.

6.6.4 For all livestock, physical alterations are prohibited unless they are essential for animal health, welfare or hygiene; for identification; or for safety reasons; and are listed below in subclause 6.6.4.7. Operators shall take steps to avoid physical alterations and should work towards phasing out routine alterations, other than for identification as required by law. All physical alterations are subject to the following:

6.6.4.1 Except for poultry and tagging, regardless of age or method, anesthetics and non-steroid anti-inflammatory analgesics shall be used in consultation with a veterinarian to provide sufficient pain control; sedatives should be considered to further minimize stress.

6.6.4.2 Physical alterations should be done at as young an age as possible. Other than for poultry, they shall be done after the first 24 hours of life.

6.6.4.3 Physical alterations shall be performed by, or under the direct supervision of, competent personnel using proper, clean, sanitized, and well-maintained tools, and accepted techniques.

6.6.4.4 Tagging for identification is permitted when required by law. One additional ear tag, or tail web tag (for goats) is permitted.

6.6.4.5 Physical alterations permitted by livestock type are listed in subclause 6.6.4.7. Physical alterations not listed are permitted by exception if they are required to protect the health or welfare of the animal and if they are done by a licensed veterinarian. They shall be on an individual basis rather than for a group of animals. Exceptional events that require physical alterations shall be documented and corrective action shall be taken to avoid recurrence.

6.6.4.6 The following physical alterations are prohibited even under veterinary supervision: caustic paste disbudding, castration of cull boars, spaying of female beef cattle, and preventative tail docking of cattle.

6.6.4.7 Specifications by species:

a) Poultry:

- 1) Infrared beak treatment is permitted for one-day-old laying hens.
- 2) Infrared beak treatment and spur removal are permitted for one-day-old turkeys.
- 3) Beak trimming is allowed by exception until birds are ten days old in situations when infrared beak treatment has failed or in flocks where infrared beak treatment is not available. Beak trimming shall be done in a way that no more than one third of the upper beak is removed, as measured from the tip to the entrance of the nostrils. In case of cannibalism outbreak, beak trimming is allowed after ten days of age under veterinary supervision. If beak trimming is used, it shall be documented.

See definitions of beak treatment and beak trimming in Clause 3.

Note: This subclause (6.6.4.7 a)) will be reviewed in 2031.

b) Pigs:

- 1) Castration is permitted for piglets under ten days of age.
- 2) Tail docking is permitted only if a documented outbreak of cannibalism occurs and the issue cannot be addressed by other methods. The docked tail shall be at least 2.5 cm in length and the operator shall follow the method outlined in written instructions by a veterinarian.

c) Cattle:

- 1) Disbudding (defined in Clause 3) by hot iron is permitted for calves under two months of age.
- 2) Clamp castration and rubber ring castration are permitted for calves under two months of age.
- 3) Tail docking of cattle is permitted only when necessary to treat injured animals.
- 4) Branding is prohibited unless required by law. If required by law, freeze branding with pain control shall be used, and the operator shall provide documentation showing that it is required by law.

d) Sheep:

- 1) Clamp castration is permitted for lambs under two months of age and rubber ring castration for lambs under seven days of age.
- 2) Tail docking is permitted for lambs under seven days of age, with the following methods in order of preference (the least painful technique is listed first):
 - i. hot iron;
 - ii. rubber ring in conjunction with a clamp; or
 - iii. rubber ring.
- 3) Docked tails shall cover the vulva in ewes and the equivalent length in rams. Tails shall be docked no shorter than the distal end of the caudal fold.

e) Goats:

1) Disbudding (defined in Clause 3) by hot iron is permitted for kids under 21 days of age.

2) Clamp castration is permitted for kids under two months of age and rubber ring castration is permitted for kids under 14 days of age.

Note: The National Farm Animal Care Council's *Code of Practice for the Care and Handling of Sheep* and *Code of Practice for the Care and Handling of Beef* (see Clause 2.4) are under revision at the time of publishing the 2026 Canadian Organic Standard. Operators are expected to keep up to date with current Codes of Practice, as this standard is expected to meet or exceed the current published Codes of Practice at their time of implementation.

6.6.5 Biological, cultural, and physical treatments and practices outlined in Table 5.3 of CAN/CGSB-32.311 are permitted if preventative practices and vaccines are inadequate to prevent sickness or injury and treatment is required.

6.6.6 Medical treatment shall not be withheld from sick or injured livestock to preserve their organic status. If methods acceptable to organic production fail, all appropriate medications shall be used to restore livestock to health.

6.6.7 If the presence of injured or diseased livestock presents a health risk to individual animals or birds, the injured or diseased animals shall be separated from the herd or flock, and/or euthanized, if necessary (see subclause 6.6.13). Isolated animals shall be kept in spaces that adhere to the requirements of subclause 6.7.1. Where possible, the isolated animal shall have physical contact with other conspecifics. If physical contact with conspecifics endangers animal health or welfare, the operator may provide visual and auditory contact with conspecifics instead. In case of an emergency, the animal may be isolated temporarily until its condition improves sufficiently to rejoin other conspecifics.

6.6.8 Shipping diseased livestock to slaughter is prohibited if the end product is intended for human consumption.

6.6.9 Products from sick animals or those undergoing treatment with restricted substances shall not be organic or fed to organic livestock.

6.6.10 The use of veterinary medicinal substances shall comply with the following (see definitions of “veterinary drug”, “veterinary biologic”, “parasiticide” and “antibiotic” in Clause 3):

- a) If no alternative treatments or management practices exist, veterinary biologics, including vaccines, parasiticides or the therapeutic use of medications may be administered, provided that such medications are permitted by this standard and Table 5.3 of CAN/CGSB-32.311 or are required by law.
- b) Phytotherapeutic medicines, that is, botanical compounds such as atropine, butorphanol and other medicines from herbaceous plants, excluding antibiotics; and homeopathic or similar products shall be used in preference to chemical, allopathic veterinary drugs or antibiotics, provided that they are effective for the species and the condition for which the treatment is intended.
- c) If the products permitted by subclauses 6.6.10 a) and b) are ineffective in combating illness or injury, prescribed veterinary drugs not listed in this standard or in Table 5.3 of CAN/CGSB-32.311 may be administered to breeding stock, layers or dairy animals with written authorization by a veterinarian. Some restrictions apply (see subclauses 6.6.2, 6.6.11 d) and 6.6.12). With the exception of parasiticides administered according to 6.6.11, meat from animals treated with veterinary pharmaceutical drugs not listed in Table 5.3 of CAN/CGSB-32.311 shall not be organic, and meat from offspring of animals treated in the last third of gestation shall not be organic.
- d) If a veterinary drug is administered and it does not have specific withdrawal requirements, a withholding period of twice the label requirement or 14 days, whichever is longer, shall be observed before livestock products from treated animals may be considered organic.

- e) Animals that require the use of antibiotics or other substances restricted in Clause 1.5 e) for the same disease for three consecutive years shall be removed from the herd within nine months following the last course of treatment.
- f) In emergencies, antibiotic treatment of dairy animals is permitted under the following conditions:
 - 1) the operator shall have written instructions from a veterinarian indicating the product and the treatment method to be used;
 - 2) treatment shall result in a milk withdrawal period of at least 30 days after the last day of a course of treatment, or a withholding period that is twice the label requirement, whichever is longer;
 - 3) antibiotic use shall be documented in herd health records;
 - 4) if dairy animals receive more than two treatments of veterinary drugs annually, whether antibiotics, parasiticides or one of each, they shall lose their organic status and go through a 12-month transition period.

6.6.11 Organic livestock operations shall have a comprehensive plan to minimize parasite problems. The plan shall include preventative measures, such as genetic selection, pasture management, fecal monitoring and assessments of tissue at slaughter, and emergency measures in the event of a parasite outbreak. Hygienic cleaning and disinfection methods for barns, such as power washing, steam washing, floor burning and lime washing, shall be included in the plan as well as down time (i.e., when the barn is vacant). By way of an exception, if preventative measures fail due to, for example, climatic conditions or other uncontrollable factors, the operator may use parasiticides that are not listed in Table 5.3 of CAN/CGSB-32.311, provided that:

- a) observation of the animal, fecal test results, or assessment of tissue, as appropriate for the species, indicates that livestock is infected with parasites;
- b) the operator provides a written action plan, with a timeline, describing how they will amend their parasite control plan to avoid similar emergencies;
- c) the operator has written instructions from a veterinarian indicating the product and method to be used, including provisions to avoid developing parasite resistance, such as rotation of parasiticides;
- d) withdrawal times are twice the label requirement or 14 days, whichever is longer;

If these conditions are met, the following restrictions apply:

- e) the exception cannot be granted for a group of animals or an entire production unit for more than two years in a row for the same problem;
- f) a dam from any species may receive only one treatment of parasiticides during gestation;
- g) meat animals from any species less than 12 months old shall receive, at most, one parasiticide treatment. Meat animals 12 months of age or older that receive more than two parasiticide treatments in their lifespan shall lose their organic status;
- h) dairy animals that receive more than two treatments in a 12-month period, whether of parasiticides, antibiotics or one of each, shall lose their organic status and go through a 12-month transition period;
- i) dairy cull animals that receive more than two treatments with parasiticides over their lifespan shall never be considered organic for meat;
- j) dairy cull animals that receive antibiotics shall never be considered organic for meat;
- k) swine breeding stock animals that present with a high parasite load may receive up to three parasiticide treatments in a year as part of a parasite reduction plan. This exception cannot be applied systematically [refer to subclause 6.6.11 b) and e)];
- l) laying hens that receive more than two parasiticide treatments in a 12-month period shall lose their organic status. Treatment of the flock, rather than individual hens, is permitted.

6.6.12 Meat from poultry or breeding livestock treated with a parasiticide, or veterinary drug not listed in Table 5.3 of CAN/CGSB-32.311 shall not be organic. Exceptions pertaining to parasiticide use may apply (see subclause 6.6.11).

6.6.13 Injured, diseased or sick animals shall be given individual treatment designed to minimize pain and suffering, which may include euthanasia.

6.6.14 Forced moulting of poultry is prohibited.

6.7 Livestock living conditions

6.7.1 The operator shall establish and maintain animal living conditions that accommodate the health and natural behaviour of animals, including:

- a) access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and daylight, suitable for the species and stage of production taking into consideration the climate and the environment;
- b) access to fresh water (see 6.4.6) and high-quality feed that meets the needs of the animal;
- c) sufficient space and freedom to stretch out while lying down, stand up, stretch limbs and turn freely, and to express normal patterns of behaviour;
- d) space allowances in proportion to local conditions, feed production capacity of the operation, livestock health, nutrient balance of livestock and soils, and environmental impact;
- e) production techniques that foster the long-term health of livestock, especially when high levels of production or growth rates are required of animals;
- f) good air quality. Operators shall prevent humidity, airborne dust particles and ammonia from reaching levels that can impair the well-being of animals. If ammonia levels exceed 20 ppm, remedial action shall be taken. Ammonia levels shall not exceed 25 ppm. In addition, air quality shall be managed according to the relevant Code of Practice (see Clause 2.4);
- g) appropriate resting and bedded areas that meet the needs of the animal. Indoor areas shall be large enough, solidly built, comfortable, clean and dry. Resting areas shall be covered with a thick layer of dry bedding that absorbs excrement. If organic bedding is commercially unavailable, bedding material from non-genetically engineered sources that is free of prohibited substances for at least 60 days prior to harvest may be used. Non-agricultural absorbent bedding sources (for example, minerals, cellulose, sawdust, and wood shavings) can be used for livestock bedding as long as they meet the requirements in Clauses 1.4 and 1.5, and do not contain, or have not been treated with, prohibited substances;
- h) housing with non-slip floors. Solid flooring is preferable. Where non-slip slatted floors exist, the floor shall not be entirely of slatted or grid construction. The floor design shall ensure that the feet of the smallest animal cannot get caught in a void. Areas between voids shall be at least as wide as the feet of the animals;
- i) animals that give birth indoors shall be provided with sufficient space and a clean, dry, well-bedded space with stable footing. Birthing facilities shall allow for separation from other animals and all the dam's needs shall be accommodated, including milking and nursing, until the dam is recovered from the birthing process. Animals shall not be tied or tethered when giving birth;
- j) construction and management of outdoor exercise areas and pasture to encourage appropriate use by livestock to prevent animal discomfort, and to avoid soil degradation, long-term damage to vegetation and the contamination of water.

6.7.2 Access to the outdoors and freedom of movement may be restricted for the following reasons, provided that confinement is temporary:

- a) inclement weather;
- b) conditions in which livestock health or safety is jeopardized, given the stage of production; and
- c) conditions in which soil, water or plant quality would be compromised.

The operator shall document the reasons for, and duration of, confinement. Measures taken to reduce the need to restrict outdoor access in the future shall also be documented when circumstances are within the operator's control.

6.7.3 When livestock are housed indoors, at least one form of environmental enrichment shall be provided so that all animals in the group have daily access. For dairy cows in tie stalls (are permitted under subclause 6.12.1), enrichment shall be provided during the exercise period if not provided in each stall. Enrichment does not include functional equipment or other objects or materials required by this standard.

Environmental enrichments suitable for different types of livestock

Type of Livestock: Examples of suitable enrichments

Poultry: Hanging peck objects, ramps, tunnels, straw/hay bales, pecking block products

Pigs: Suspended chew toys, chains, rubber hoses, rubber toys, cloth strips, hanging knotted cotton ropes, scratch pads, straw/hay bales

Cattle: Brushes, hanging ropes or chains, straw/hay bales

Sheep and goats: Brushes, platforms, opportunities for climbing and hiding, brush or branches, straw hay bales

6.7.4 The continuous tethering of livestock is prohibited, with an exemption for dairy cattle under conditions specified in subclause 6.12.1.

6.7.5 Housing, pens, runs, equipment and utensils shall be cleaned and disinfected to prevent cross infection and build-up of disease-carrying organisms. Appropriate cleaners and disinfectants listed in Tables 5.3, 7.3 and 7.4 of CAN/CGSB-32.311 shall be used. If these substances are not effective, other cleaners and disinfectants are permitted on the recommendation of a veterinarian and with confirmation of a disease issue. In the event of a reportable disease, any effective disinfectant may be used to clean housing, pens and runs. Such uses shall be documented. For equipment that comes into contact with food products, the requirements in Clause 8.2 apply, and substances listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311 are permitted.

6.7.6 All livestock in a production unit shall be managed organically. Individual, non-organic animals may be present in the production unit if they are clearly identified and managed organically. Non-organic livestock production units may be present on an operation if they are clearly identified and kept separate from organic livestock production units.

6.7.7 Organic animals may graze with non-organic animals on common land, that is, crown range or community pasture, provided that:

- a) documentation confirms that the land has not been treated with prohibited substances for at least 36 months;
- b) documentation confirms that health care and feed products available to organic livestock while on common land are in accordance with this standard; and/or
- c) identification permits a clear distinction between organically and non-organically raised animals.

6.7.8 For new installations or replacement purposes, wood for livestock barns and shelters treated with prohibited substances is allowed if livestock or feed does not come in contact with the wood. For existing barns and shelters, operators shall take measures to prevent contact, such as applying a barrier or establishing a buffer zone.

6.7.9 Wood used for livestock fencing shall be untreated or treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311, except in the circumstances listed below.

- a) existing fence posts treated with prohibited substances are permitted if they are in use on the production unit at the start of the organic transition. These posts may be reused within the operation as allowed in 6.7.9 b) and c);
- b) new or reused fence posts treated with prohibited substances are permitted for exclusion or inclusion of livestock or wildlife on the perimeter of production units, but are not permitted for interior subdivision (e.g. for rotational grazing); and
- c) new or reused fence posts treated with prohibited substances are permitted if the operator provides documentation showing that they are required by law.

6.8 Manure management

6.8.1 Manure management practices used to maintain areas in which livestock is housed, penned or pastured shall be implemented in a manner that minimizes soil and water degradation, and maintains animal health.

6.8.2 Manure storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water. See also subclause 5.5.2.

6.9 Livestock product preparation

Wherever organic livestock product preparation takes place (for example, facilities used for milking), Clauses 8.1 and 8.2 apply.

6.10 Pest management in livestock facilities

Clause 8.3 applies to pest management practices in and around livestock facilities.

6.11 Additional requirements for cattle, sheep and goats

6.11.1 Herbivores shall have access to pasture (see definition in Clause 3) during the grazing season. At other times, including the finishing phase, they shall have access to an outdoor exercise area, weather permitting. The operator shall document the reasons and duration of confinement. Exceptions to the pasture requirement can be made for:

- a) breeding males; or
- b) young animals, when it can be documented that their health and welfare are jeopardized.

Note: This subclause will be reviewed in 2031.

6.11.2 Minimum indoor and outdoor space requirements for cattle are shown in Table 1: Dairy and Table 2: Beef.

Table 1 — Minimum indoor and outdoor space requirements for dairy cattle

Cattle	Indoor space	Outdoor runs and pens
Free stall	Ratio of cows to stalls shall not exceed 1:1*	No minimum area required
Bedded pack barn	11 m ² (118 ft ²)/head (of bedded area)	No minimum area required
Individual maternity pens Note: One maternity pen per 35 cows is recommended.	15 m ² (161 ft ²)/head (of bedded area)	Not applicable
Group maternity pens	11 m ² (118 ft ²)/head (of bedded area)	Not applicable
Calves and young cattle	2.5 m ² (27 ft ²)/head for young calves; increasing to 5 m ² (54 ft ²)/head for growing steers and heifers (12 months old)	5 m ² (54 ft ²)/head to 9 m ² (97 ft ²)/head, depending on the size of animals
Tie stalls (see 6.12.1)	Stall size appropriate for size of cow	6.5 m ² (70 ft ²)/head in spring and fall when not on pasture
* The indoor space of free-stall cattle shall be reviewed by 2031. Note: reflects the space requirements for Holstein cattle; with justification, space requirements may be reduced for small breeds of cattle.		

Table 2 — Minimum indoor and outdoor space requirements for beef cattle

Cattle	Indoor space (when provided)	Outdoor runs and pens
Adult beef cows	5.6 m ² (60 ft ²)/head for 500 kg (1,102 lb) cows increasing to 9 m ² (97 ft ²)/head for 900 kg (1,984 lb) cows (of bedded area) ^a	9 m ² (97 ft ²)/head
Cattle finishing phase	Indoor confinement is prohibited in grazing season Space requirements as per Calves and young cattle below	23 m ² (247.5 ft ²)/animal for 363 kg (800 lb) finishers and increase to 46.5 m ² (500 ft ²)/animal for 545 kg (1,200 lb) finishers
Calves and young cattle	2.5 m ² (27 ft ²)/head for young calves; increasing to 5 m ² (54 ft ²)/head for growing steers and heifers (12 months old) (of bedded area)	5 m ² (54 ft ²)/head to 9 m ² (97 ft ²)/head, depending on the size of animals
Maternity pens Note: maternity pen per 20 cows is recommended.	13.4 m ² (144 ft ²)/head (of bedded area)	
^a If construction of new infrastructure is required in order to comply with minimum indoor space requirements for 900 kg+ beef cattle of 9 m ² /head, operators are granted an exemption that permits 7.25 m ² /head for 900 kg+ beef cattle until the end of December 2028.		

6.11.3 Sheep and goat housing

Minimum indoor and outdoor space requirements for sheep and goats are shown in Table 3.

Table 3 — Minimum indoor and outdoor space requirements for sheep and goats

	Indoor space	Outdoor runs and pens
Ewes/does and nursing lamb/kid	2 m ² (21.5 ft ²)/head plus 0.35 m ² (3.8 ft ²)/head for each lamb/kid	3 m ² (32.3 ft ²)/head plus 0.5 m ² (5.4 ft ²)/head for each lamb/kid
Bottle-fed, weaned, and feeder lambs/kids	0.5 m ² (5.4 ft ²)/head increasing to 1.5 m ² (16 ft ²)/head by one year of age	0.75 m ² (8.1 ft ²)/head increasing to 2.25 m ² (24 ft ²)/head by one year of age
Rams/bucks over one year of age	3 m ² (32.3 ft ²)/head	4.5 m ² (48.5 ft ²)/head

6.11.4 Milking parlors for dairy sheep and goats shall meet the requirements of 6.12.3.

6.12 Additional requirements for dairy cattle housing

6.12.1 Tie stalls in existing dairy barns may be used for lactating dairy cows, and for a period of one month for the training of heifers raised in loose housing. Tie stalls are prohibited in new construction and major renovations. All use of tie stalls will be phased out of organic dairy production by 2031. If tie stalls are used, dairy cows shall have an exercise period at least twice a week, preferably every day, for a period of at least one hour. An exercise period is defined as time when the cow is untied outside of routine handling procedures, such as milking.

6.12.2 Electric trainers are prohibited. The tails of cows in stalls may be tied to prevent the tail from lying in the gutter, provided that the tying allows for natural behaviour, free movement of the tail and quick release when necessary.

6.12.3 If milking parlours are in use:

- a) operators shall minimize animal waiting time between the time they are moved to the holding area and the time they return to the barn or pasture;
- b) portable milking units shall be available for sick or weak animals that are unable to make it to the milking parlour;
- c) electric crowd gates are prohibited; and
- d) non-slip flooring shall be used in the holding area, parlour and alleys.

6.12.4 Unweaned calves that are healthy, thriving, and compatible in age, size, and drinking speed shall be housed in pairs or groups. Operators currently raising calves individually are granted an exemption to allow them to transition to pair/group housing by December 2027, if changes to infrastructure are required.

Unweaned calves may be housed in individual pens and hutches if they are sick, or if there are too few calves compatible in their age, size, and drinking speed. When housed individually, the following conditions shall be met:

- a) calves are not tethered and have enough room to turn around, lie down, stretch out when lying down, get up, rest and groom themselves;
- b) individual pens and hutches are designed and located so that each calf has physical contact with other calves unless they are sick;
- c) individual housing has an area of at least 2.5 m² (27 ft²) and a minimum width of 1.5 m (4.9 ft); and
- d) outdoor hutches shall have access to an enclosed yard or run.

6.12.5 Calves shall be group-housed after weaning.

6.12.6 Dairy replacement calves over nine months of age shall have access to pasture, as appropriate for the season.

6.12.7 During the grazing season, dairy cows on pasture shall have access to a water source within 200 m.

6.13 Additional requirements for poultry

6.13.1 The operator shall establish and maintain poultry living conditions that accommodate the health and natural behaviour of poultry as follows:

- a) The keeping of poultry in row, battery, enriched or colony cages, is prohibited;
- b) Poultry shall be reared in open-range conditions and have free access to pasture, open-air runs, and other exercise areas, subject to weather and ground conditions. Outdoor areas shall:
 - 1) have completed the necessary transition period and been granted organic status;
 - 2) be covered with vegetation, seeded if necessary, and periodically left empty to allow vegetation to regrow and to prevent disease build-up. To facilitate rodent control, a vegetation-free perimeter around poultry houses is permitted;
 - 3) have effective overhead cover (for shade and protection from avian predators) distributed throughout the range area of barn-raised birds to encourage continual use by the birds. The cover may be natural (such as trees, shrubs and crops) or artificial (such as shade cloth, camouflage netting, screens or trailers). Roof overhangs over pasture may account for up to 50% of the required overhead cover if they are functional (i.e., they provide shade and protection from avian predators). Overhead cover shall represent at least 10% of the minimum required range area (as outlined in Table 5 of 6.13.13); and
 - 4) show signs of use as appropriate for the season;
- c) In an emergency, when outdoor access results in an imminent threat to the health and welfare of poultry, access may be restricted. Outdoor access shall resume when the imminent threat ends. Producers shall document periods of confinement; and
- d) Operators shall have an organic plan that describes outdoor access and how they will protect birds from disease and predators.

6.13.2 General requirements for layers

- a) Layers may be confined during the onset of lay, that is, until peak production is reached. The laying flock shall have outdoor access for at least one third of its laying life.
- b) Rearing facilities that closely match the conditions that exist in the layer barn are recommended. Pullets, however, may be kept indoors until they are fully immunized.
- c) Layer flocks shall be limited to 10,000 birds. More than one flock may be in the same building if the flocks are separated and have separate runs.

6.13.3 Enriched verandahs for barn-raised layers

- a) Enriched verandahs shall be used when barn-raised layers do not have access to outdoor runs because of weather or disease constraints (presence of disease).
- b) An enriched verandah is a covered, uninsulated, unheated extension to a poultry barn. Birds shall have access to the enriched verandah year-round during daylight hours, at least from spring through fall. The enriched verandah shall:
 - 1) have an outdoor climate but offer protection from inclement weather (e.g., wind, rain), rodents, predators and disease threats;
 - 2) represent at least one third of the footprint of the indoor barn area;

- 3) have natural lighting which may be supplemented with artificial lighting;
 - 4) have a sand floor, a dirt floor or a solid floor covered with bedding, such as straw or wood shavings, for comfort and warmth and to encourage foraging, scratching and dust-bathing behaviours;
 - 5) offer environmental enrichments (see definition in Clause 3: examples include perches, trays of greens, hay bales, pecking objects) to encourage natural behaviours; and
 - 6) not count towards indoor or outdoor space allowance.
- c) Enriched verandahs shall be provided in new construction for barn-raised layers. They shall be added to existing infrastructure when the operator cannot demonstrate that at least 25% of layers utilize the outdoor range when there are no weather or disease constraints.
 - d) All existing enriched verandahs shall be accepted as they are as of December 2026; they are exempt from subclauses 6.13.3 b) 2) and 6.13.3 b) 6).
 - e) If the operator can demonstrate that the addition of an enriched verandah of the size specified in subclauses 6.13.3 b) is not possible for an existing barn due to lack of space or because of design limitations of the existing barn:
 - 1) a smaller enriched verandah shall be allowed provided it is as close in size as possible to the requirement of one third of the footprint of the indoor barn area; or
 - 2) the enriched verandah shall be constructed in the uncovered outdoor area and, as an exception, may count as part of the outdoor space allowance; or
 - 3) operators are granted an exemption that permits the use of existing infrastructure until March 2031, provided that a plan for the new construction or renovation is in place by March 2026.

6.13.4 Layers shall have access to the nest space area listed in the requirements of the Code of Practice for the Care and Handling of Pullets and Laying Hens for non-cage systems (see Clause 2.4).

6.13.5 Perches shall meet the following criteria:

- a) In the first weeks of life, layer chicks shall have continuous access to perch space.
- b) During the pullet rearing phase, adequate perch space shall be appropriate for the final production system and accessible at all times and at varying heights. By six weeks of age, operators shall provide 10 cm of perch space or 100 cm² of platform space per pullet (a platform is an elevated surface for perching that is raised in height as chicks and pullets grow).
- c) Laying hens shall have a minimum of 15 cm (5.9 in.) perch space per hen, accessible at all times and at varying heights.
- d) Perches for laying hens shall be purpose-designed, such as alighting (landing) rails in aviaries, which allow birds to wrap their toes around the rail. Feed and water trough edges, slatted floors and ladder rungs are not considered purpose-designed perching objects, but may be used to provide additional perch space beyond what is required in 6.13.5 a), b) and c).
- e) Perches shall be a minimum diameter or width of 1.9 cm (0.75 in.).
- f) Other poultry are exempt from 6.13.5 a), b), c), d) and e).

Note: Producers are advised to review the Code of Practice for the Care and Handling of Pullets and Laying Hens (see Clause 2.4) to ensure they meet additional perch requirements for both pullets and adult layers contained therein.

6.13.6 General requirements for meat chickens and turkeys

- a) Meat chickens that will be raised outdoors in shelters without indoor access shall have access to pasture on a daily basis by four weeks of age, unless weather conditions endanger the health or safety of the birds. Turkeys shall have outdoor access by eight weeks of age.
- b) Barn-raised meat chickens shall have outdoor access on a daily basis by at least 25 days of age when there are no weather constraints. Operators shall take measures to increase use of the pastures and outside exercise areas and have a goal of a minimum of 15% of birds on range when there are no weather constraints. Operators shall document the use of the range and continue to strive to increase the number of birds on the range in future years. This will be reviewed by March 2031.

Note: Potential measures for increasing the usage of pasture, outdoor range and outside exercise areas:

- use slower-growing foraging (hardy) breeds (characterized by a growth rate of no more than 45 g/day);
- use a ration that has been nutritionally adjusted for slower growth (i.e., lower in protein);
- implement an older slaughter age (e.g., 60 days) provided the health of the birds can be maintained;
- allow outdoor access before the minimum age specified;
- provide mobile units for summer production;
- provide effective overhead cover on pasture;
- provide environmental enrichment on the pasture (e.g., feed, water, perches, etc.);
- improve pasture access (e.g., pophole changes, etc.); and
- provide enriched verandahs [see descriptions in subclause 6.13.3 b)].

6.13.7 Poultry barns shall have sufficient exits (popholes) to ensure that all birds have ready access to the outdoors.

6.13.8 Exits shall:

- a) allow passage of more than one bird at a time, and be evenly distributed along the line of access to the outdoor range;
- b) shall correspond to the requirements shown in Table 4 for the number and size of exits.

Table 4 – Poultry barns minimum exit numbers and size

Poultry	Combined width of popholes	Minimum width of each pophole	Minimum height	Minimum number
Layers	2 m (6.6 ft)/1000 hens	50 cm (20 in.)	35 cm (14 in.)	2
Broilers	1 m (3.3 ft)/1000 birds OR all birds within 15 m (49 ft) of an exit	50 cm (20 in.)	35 cm (14 in.)	2
Turkeys	2 m (6.6 ft)/1000 birds	150 cm (59 in.)	75 cm (30 in.)	2

6.13.9 When existing organic poultry barns do not meet the requirements of subclause 6.13.8 b) (Table 4), either the distance from an exit from anywhere in the barn shall be no more than 15 m (49 ft), or the operator shall provide evidence that birds utilize outdoor range. Evidence shall demonstrate that 25-50% of birds are on range when there are no age or weather constraints.

6.13.10 Bedding material shall be provided as litter material and kept dry. Houses with slatted floors shall have a minimum of 30% solid, bedded floor area to encourage dust bathing, scratching and foraging behaviours.

6.13.11 Poultry shall have access to at least the number of waterers and feeders required by the relevant Code of Practice (see Clause 2.4).

6.13.12 Poultry housed indoors shall be provided with natural light, either with evenly distributed windows or light-permeable fabric. The total window area shall be no less than 1% of the total ground-floor area, unless it can be demonstrated that natural light levels are sufficient to read a document, such as a newspaper, anywhere in the barn. If day length is artificially prolonged, the total duration of light shall not exceed 16 hours, and shall be terminated by gradual reduction of light intensity followed by eight hours of continuous darkness. The following exceptions are permitted and shall be documented:

- a) periods of increased lighting are permitted due to the stage of production, for example, the arrival of chicks and turkey poults;
- b) decreased lighting intensity is permitted due to animal welfare concerns, for example, outbreaks of cannibalism.

6.13.13 The maximum indoor and outdoor densities are shown in Table 5.

Table 5 — Maximum indoor and outdoor densities for poultry^a

Poultry	Indoors	Outdoor runs
Layers (19 weeks and older)^b	6 birds/m ² (10.76 ft ²)	4 birds/m ² (10.76 ft ²)
Chicks and pullets 0-4 weeks^{c d}	35 birds/m ² (10.76 ft ²)	16 birds/m ² (10.76 ft ²)
Pullets 5-8 weeks^{c d}	24 birds/m ² (10.76 ft ²)	16 birds/m ² (10.76 ft ²)
Pullets 9-18 weeks^c	15 birds/m ² (10.76 ft ²)	10 birds/m ² (10.76 ft ²)
Broilers	21 kg/m ² (4.3 lb/ft ²)	21 kg/m ² (4.3 lb/ft ²)
Turkeys/large birds	26 kg/m ² (5.3 lb/ft ²)	17 kg/m ² (3.5 lb/ft ²)
Ducks	21 kg/m ² (4.3 lb/ft ²)	1 kg/m ² (0.2 lb/ft ²)
a Under exceptional circumstances, the maximum stocking density may be exceeded for individual flocks. These circumstances shall be documented and if they recur, actions shall be taken to prevent future flocks from surpassing maximum stocking density. b Nest space shall not be included when calculating usable space allowance. c Outdoor runs are not required when flocks are undergoing an immunization program. d The maximum density for pullets aged 0 to 4 and 5 to 8 weeks shall meet the Canadian Organic Standard requirement or the requirement of the <i>Code of Practice for the Care and Handling of Pullets and Laying Hens</i> (see 2.4), whichever is the lower density.		

6.13.14 Multi-level aviary systems for layers shall have no more than three levels or tiers above ground level. Total floor space, for calculation of solid-floor area and bird density requirements, shall include all usable floor levels (see 6.13.10 and 6.13.13). If enriched verandahs are used to provide required scratching areas, they shall be accessible year-round.

6.13.15 For pasture-based operations with mobile units, stocking density shall be no more than 2000 layers/ha (800 layers/ac.), 2500 broilers/ha (1000 broilers/ac.) or 1300 large birds (turkeys/geese)/ha (540 large birds/ac.), based on the total amount of land used for rotational poultry pasture. When birds are in moveable field shelters, the shelters shall be moved daily, whenever possible, and at least once every four days, taking into consideration the impact on the birds and on the land. Density within the moveable shelters shall correspond to the indoor density described in 6.13.13.

6.13.16 When an operation raises poultry on pasture during the grazing season (subject to subclauses 6.13.6 a) and 6.13.15) and in a barn during the non-grazing season, the barn shall meet the housing requirements of subclause 6.13 (see definition of grazing season in Clause 3).

6.13.17 Buildings shall be emptied, cleaned and disinfected, between flocks, and runs shall be left empty to allow the vegetation to grow back.

6.13.18 Ducks and geese shall have access to a water area created for their use whenever weather conditions permit. Facilities shall be designed to prevent the commingling of wild waterfowl and domestic poultry.

6.14 Additional requirements for rabbits

6.14.1 If required for comfort and security, rabbits may be temporarily confined, for example, overnight, in cages or hutches. Continuous confinement is prohibited.

6.14.2 The use of mobile pasture pens is permitted, provided that pens do not restrict natural behaviour and they are moved at least once every three days.

6.14.3 Rabbits shall have space to run, hop and dig, and to sit upright on their back legs with ears erect. The minimum indoor and outdoor space requirements are shown in Table 6.

Table 6 – Minimum indoor and outdoor space requirements for rabbits

Rabbits	Indoor space	Outdoor – runs and concrete exercise areas	Outdoor – pasture	Mobile pens
From weaning to slaughter	0.3 m ² (3.23 ft ²)/head	2 m ² (22 ft ²)/head	5 m ² (54 ft ²)/head	0.4 m ² (4.3 ft ²)/head
Pregnant does	0.5 m ² (5.4 ft ²)/head	2 m ² (22 ft ²)/head	5 m ² (54 ft ²)/head	0.5 m ² (5.4 ft ²)/head
Does and litters	0.7 m ² (7.5 ft ²)	2 m ² (22 ft ²)	Not applicable	0.4 m ² (4.3 ft ²)/head in shelter 2.4 m ² (26 ft ²) for grazing area
Bucks	0.3 m ² (3.23 ft ²)/head	2 m ² (22 ft ²)/head	5 m ² (54 ft ²)/head	0.4 m ² (4.3 ft ²)/head

6.14.4 Rabbits shall not be subjected to continuous lighting or kept in permanent darkness. During the day, rabbits shall be able to clearly see each other and their surroundings.

6.14.5 Does about to give birth shall be given secluded individual burrows or nest boxes for kindling (birthing).

6.14.6 The doe and litter shall have free access to outdoor range and foraging areas once the kits reach 21 days of age.

6.14.7 Weaning before the kits are 30 days of age is prohibited. However, if the welfare of the doe or kits is compromised, earlier weaning is permitted.

6.15 Additional requirements for pigs and farm-raised wild boar

6.15.1 The number of animals on a production unit shall reflect the size of the available land base, which comprises land owned, leased and available for spreading their manure, and based on a balance between animal units, feed production and manure management. Farrow to finish operators shall not exceed 2.5 sows/ha (1 sow/ac.).

6.15.2 Pigs shall have daily access to outdoor areas with the exception of sows with nursing piglets. Outdoor access can be temporarily restricted, as stated in subclause 6.7.2.

- a) Outdoor areas may include woodlands, other natural environments, soil or concrete exercise areas. Access to pasture is recommended but not mandatory. If pasture areas are degraded and cannot be used by the pigs, other outdoor exercise areas shall be provided in order to meet the requirements for outdoor access and rooting.
- b) An outdoor exercise area may be covered as long as at least three sides of the structure are open.
- c) When outdoors in open areas (e.g., pasture), pigs shall have access to shaded/sheltered areas suitable for the whole herd so they may take cover during inclement weather.
- d) Pigs shall not be confined exclusively to concrete yards without access to an indoor or outdoor bedded area.
- e) Guidelines around management of outdoor areas (subclause 6.7.1), preventing occurrence and spread of parasites (subclauses 6.6.1 c), 6.6.11) and permitting rooting for pigs (subclause 6.15.7) shall apply.

Note: Pasture management practices implemented to avoid degradation and prevent parasite build-up may include:

- rotation of pastures with annual crops;
- having a paddock rotation plan depending on the season;
- leaving a paddock empty for 5 years before repopulating with growing pigs;
- keeping sows in a paddock for a maximum of 2 years before providing the paddock with a rest period.

6.15.3 Sows and gilts shall be kept in groups, with the following exceptions:

- a) individual pens are permitted for the protection of females during estrus or for other health reasons for a period of up to five days;
- b) sows may be individually housed in a pen for up to five days prior to farrowing and during the suckling period.

6.15.4 Confinement of sows in gestation crates or farrowing crates, or in another manner that prevents them from turning around is prohibited, except for periods of temporary restraint. Sows may be restrained for a maximum period of four consecutive hours to protect the piglets or to protect the operator during piglet processing or pen cleaning. Sows shall be directly supervised while restrained and released as soon as possible.

6.15.5 When sows are expected to farrow, or moved to the farrowing area, they shall be provided with a quantity of straw or other suitable natural material sufficient to enable them to build nests.

6.15.6 Piglets shall not be weaned before four weeks of age. However, if the welfare of the sow and/or piglets is compromised, piglets may be weaned earlier by exception. The operator shall document and provide justification for early weaning. The weaning age will be reviewed by March 2031.

6.15.7 Piglets shall not be kept on flat decks or in cages.

6.15.8 Boars may be housed in individual enclosures provided there is visual and tactile contact with other pigs.

6.15.9 Indoor and outdoor exercise areas shall permit rooting.

6.15.10 The use of nose rings is prohibited.

6.15.11 The minimum indoor, outdoor and total space requirements shown in Table 7 apply only to pigs when they are housed in barns. Within the total area, the minimum indoor and outdoor space shall be respected.

Table 7— Minimum indoor and outdoor space requirements for pigs and wild boars^a

	Indoor space	Outdoor runs and pens	Total area
Sow and piglets (until weaning)^b	7.5 m ² (81 ft ²) for each sow and litter	Not required	7.5 m ² (81 ft ²)
Growing pigs			
a) up to 30 kg (66 lb)	0.6 m ² (6.5 ft ²)/head	0.4 m ² (4.3 ft ²)/head	1.0 m ² (10.8 ft ²)/head
b) 30–50 kg (66–110 lb)	0.8 m ² (8.6 ft ²)/head	0.6 m ² (6.5 ft ²)/head	1.4 m ² (15.1 ft ²)/head
c) 50–85 kg (110–187 lb)	1.1 m ² (12 ft ²)/head	0.8 m ² (8.6 ft ²)/head	1.9 m ² (20.6 ft ²)/head
d) >85 kg (187 lb)	1.3 m ² (14 ft ²)/head	1.0 m ² (10.76 ft ²)/head	2.3 m ² (24.8 ft ²)/head
Sows in group pens	3 m ² (32.3 ft ²)/head	3 m ² (32.3 ft ²)/head	6 m ² (64.6 ft ²)/head
Sows in individual pens^c	3 m ² (32.3 ft ²)/head	Not required	3 m ² (32.3 ft ²)/head
Boars in individual pens	9 m ² (97 ft ²)/head	9 m ² (97 ft ²)/head	18 m ² (194 ft ²)/head
a Under exceptional circumstances, the maximum stocking density may be exceeded for individual groups. These circumstances shall be documented and if they recur, actions shall be taken to prevent future groups from surpassing maximum stocking density. b The protected area for the piglets (nest or creep area) shall be no larger than 20% of the space provided for the sow and litter. c See 6.15.3 a for the circumstances in which keeping sows in individual pens is permitted			

7 Specific production requirements

7.1 Apiculture

7.1.1 Bees may be introduced to an operation and managed for production benefits, such as pollination of organic crops. If managed as a livestock species for the production of organic products (for example, honey, pollen, propolis, royal jelly, beeswax and bee venom), bees shall be managed in accordance with this standard.

7.1.2 The operator shall prepare a detailed organic plan (see subclauses 4.1, 4.2 and 4.3) that describes the source of bees; production methods; bee diet; control of pests, including diseases, mites and insects; breeding; and other related issues of colony management. Where applicable, the organic plan shall also describe crop management practices.

7.1.3 Records that document all apiary management activities, including removal of supers and extraction of honey (see Clause 4.4), shall be maintained.

7.1.4 The treatment and management of bee colonies shall be informed by the principles of organic production (see Introduction).

7.1.5 Organic plants and undomesticated, non-agricultural vegetation shall be the primary source of nectar, honeydew and pollen. Crops treated with prohibited substances and genetically engineered crops shall be avoided.

7.1.6 Bee health shall be based on appropriate measures, such as selection of stock with disease-resistant traits, availability of suitable forage, and good apiary management practices.

7.1.7 When bees are placed in wild areas, impact on the indigenous insect population shall be considered.

7.1.8 Transition

7.1.8.1 Colonies and hives (including brood and honey super frames) shall be under continuous organic management for at least 12 months before products may be considered organic.

7.1.8.2 Colonies and hives shall not be rotated between organic and non-organic management systems. Bees treated with antibiotics are subject to the requirements of subclause 7.1.15.7.

7.1.9 Introduced bees

If commercially available, introduced bees, that is, replacement bees for established colonies, shall be organic. Replacement colonies shall be produced within the operation or come from another established organic apiary.

7.1.10 Location of hives

Where sources or zones of prohibited substances are present, that is, genetically engineered (GE) crops or environmental contamination, apiaries shall be protected with a buffer zone of 3 km (1.875 mi.). The following exceptions apply:

- a) fertilizers (including those that are not listed in Table 4.2 Column 2 of CAN/CGSB-32.311) are permitted in the buffer zone, with the exception of sewage sludge;
- b) buffer zones may be reduced if natural features that would restrict the likelihood of bee travel (such as forests, hills or waterways) and abundant compliant forage are present; and
- c) during periods of reduced bee mobility and when forage is not generally available, the buffer zone around temporary preparation apiaries and wintering yards may be reduced to 100 metres.

7.1.11 Forage and feeding

7.1.11.1 The primary food source for adult colonies shall be nectar and pollen collected from sources conforming to this standard and food sources stored by the bees in the hive (honey, pollen, etc.).

- a) In the event of a regional or seasonal shortage of sources of feed and for winter feeding of colonies, the following is allowed in order of preference:
 - 1) organic honey from within the operation;
 - 2) organic sugar (e.g., inverted, syrup, fondant); or
 - 3) non-organic transitional honey from within the operation.
- b) The use of non-organic, non-GE refined sugar (in compliance with Clauses 1.4 and 1.5) is permitted under the condition that the operator:
 - 1) maintain and document appropriate practices to prevent the mixing of organic and non-organic feeds in honey supers;
 - 2) develop and provide a plan to replace the use of non-organic, non-GE refined sugar in the operation with organic sugar; and

- 3) feed a minimum of 5% of hives with organic sugar or organic honey by September 1, 2028. Operators shall note in their organic plan the potential impact of the use of organic sugar or honey, particularly on bee health and honey production.

- c) Feeding shall only occur between the last honey harvest and 15 days before the start of the next nectar or honeydew flow period.

7.1.11.2 Sugar (organic or non-organic) shall not be supplied within 30 days of the harvest of honey. Organic honey from the farm is permitted at all times.

Note: Subclauses 7.1.11.1 and 7.1.11.2 will be reviewed in 2031.

7.1.12 Colony management

7.1.12.1 Hives shall be clearly and individually identified, and shall be monitored regularly, that is, at one- to two-week intervals, depending upon the colony, weather conditions and time of year.

7.1.12.2 Wing clipping of queen bees is prohibited.

7.1.12.3 Bees shall be removed from hives with bee escape boards, shaking, brushing or forced-air blowers.

7.1.12.4 Plant-based materials that have not been treated with prohibited substances (see Clause 1.5) may be used in bee smokers.

7.1.12.5 Annual destruction of bee colonies, following nectar flows, is prohibited.

7.1.13 Hive construction

7.1.13.1 Hives shall be constructed of and maintained with natural materials, such as wood and metal. Pressure-treated lumber or particle board, wood preservatives or lumber treated with prohibited substances are not permitted.

7.1.13.2 Exterior surfaces of the hive may be painted with non-lead-based paints.

7.1.13.3 If dipped in organic beeswax, plastic comb foundation is permitted.

7.1.14 Health care

7.1.14.1 Preventative health care practices shall be established and maintained, including the selection of bee stocks resistant to prevalent pests including mites and diseases; the selection of hive locations considering site-specific conditions; the availability of sufficient pollen and honey; the renewal of beeswax; the regular cleaning and disinfection of equipment; and the destruction of contaminated hives and materials when appropriate for pest management.

7.1.14.2 The operator shall promote strong, healthy colonies. Management practices may include: merging weaker, albeit healthy, colonies; renewing queens, if necessary; maintaining adequate hive density; inspecting colonies systematically; and relocating diseased colonies to isolated areas.

7.1.15 Managing pests including insects and diseases

7.1.15.1 The operator shall be a knowledgeable beekeeper who is familiar with the life cycle and behaviour of bees and related disease-causing organisms, parasitic mites and other pests. In the presence of such pests, every effort shall be made to restore the health of a colony.

7.1.15.2 Every effort shall be made to select and breed queen bees for resistance to diseases and parasites.

7.1.15.3 Comb foundation shall be obtained from beeswax within the operation or from other organic sources.

7.1.15.4 Pests (including diseases) shall be controlled with management methods or modified equipment.

7.1.15.5 Botanical compounds may be introduced into the hive provided that such remedies are listed in Table 5.3 of CAN/CGSB-32.311, and are not used within 30 days of nectar flow or when honey supers are on the hive.

7.1.15.6 Therapeutic applications of substances to control pests (including parasites and diseases) listed in Table 5.3 of CAN/CGSB-32.311, are permitted. These applications shall be discontinued 14 days before harvesting the hive products.

7.1.15.7 Allopathic drugs (for example, antibiotics) are prohibited. However, where the imminent health of the colony is threatened, oxytetracycline is permitted (See *Antibiotics*, *oxytetracycline* in Table 5.3 of CAN/CGSB-32.311). Before treatment, hives and colonies shall be removed from the foraging area and taken out of organic production to prevent the spread of antibiotics within the apiary. Treated hives (containers present during treatment) along with the bees present during treatment (excluding queens) shall be placed in isolation and undergo a 12-month transition period. Wax present in the hives during treatment shall not be marketed as organic.

7.1.15.8 Destroying the male brood is only permitted to contain infestation with varroa mites.

7.1.16 Extraction, processing and storage

7.1.16.1 Extraction of honey from a comb with live brood is prohibited.

7.1.16.2 The quality and organic integrity of honey and other products of apiculture (see subclause 7.1.1) shall be preserved and protected as specified in 8.1.

7.1.16.3 Surfaces in direct contact with honey shall be constructed of food-grade materials or coated with beeswax.

7.1.16.4 Heating of honey for extraction shall not exceed 35 °C (95 °F) and the decrystallization temperature shall not exceed 47 °C (116.6 °F). If organic honey is heated above those temperatures, then it can only be used as an ingredient in a multi-ingredient product.

7.1.16.5 Gravitational settling shall be used to remove debris from extracted honey. Sieves are permitted for removal of residual debris.

7.1.16.6 Honey shall be packaged in airtight containers.

7.1.16.7 Facility cleaning, sanitation and pest management are subject to the requirements in Clauses 8.2 and 8.3.

7.2 Maple products

7.2.1 The standards for maple production also apply to syrup production in other tree types, such as birch.

7.2.2 Organic maple products shall be from production units managed in accordance with this standard.

7.2.3 This standard applies to all stages of production and preparation — the maintenance and development of the sugar bush, collecting and storing sap, converting sap to syrup, making products out of syrup, washing and sterilizing equipment, and storing finished products.

7.2.4 The production of maple syrup shall be characterized by good management practices of the sugar bush and its ecosystem. Development and maintenance shall focus, over the long term, on the preservation of the sugar bush ecosystem and improvement of tree vigour.

7.2.5 Tapping practices shall minimize risk to the health and longevity of the trees.

7.2.6 Equipment and techniques used to collect and store sap shall lead to a prepared product of the highest possible quality. Equipment shall be in good condition, shall be composed of materials suitable for use in the manufacture of food products, and shall be used according to the manufacturer's instructions.

7.2.7 During conversion of sap to syrup, the sap can take on the odour of anything it comes into contact with. Therefore, care shall be taken to avoid denaturing the product during preparation. The use of technology, such as magnetization, that is likely to alter the intrinsic qualities of the product is prohibited.

7.2.8 Transition

This standard shall be fully applied on a production unit for at least 12 months before the harvest of sap may be considered organic. Prohibited substances shall not have been used for at least 36 months preceding the first harvest. Parallel production is prohibited.

Note: Part 13 Organic Products of the *Safe Food for Canadians Regulations* requires that the application for the organic certification of maple products be filed at least 15 months before the day on which the food is expected to be sold.

During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before maple products may be eligible for certification and one inspection, during production, in the year maple products are eligible for certification.

7.2.9 Sugar bush development and maintenance

7.2.9.1 Plant diversity

Operators shall encourage a diversity of plant species in the sugar bush, particularly companion species to tapped maple trees. Companion species shall be encouraged by aiming for a minimum percentage of 20% of all trees in the sugar bush and shall therefore be given preference if they represent less than 20% of this volume. Undergrowth and brush shall be protected. Partial cutting of this vegetation is authorized for the creation of paths to facilitate movement. Gap cutting is permitted if the overabundance of native understory vegetation prevents the establishment of maple regeneration.

7.2.9.2 Thinning

When it is necessary or when required by the forest administrator, thinning of the sugar bush shall be performed in accordance with current best practices in forest management in both private and public forests, and shall be evenly distributed throughout the sugar bush.

7.2.9.3 Tree protection

If livestock (for example, beef or dairy cattle, pigs or domestic deer) could harm sugar trees, livestock access to the bush shall be prohibited in order to preserve plant diversity and the growth of young trees. Pipeline networks shall be installed in a manner that shall not injure nor harm the growth of trees.

7.2.9.4 Fertilization

Fertility recommendations and applications shall be based on observed, diagnosed and documented deficiencies. Soil amendments permitted for maple production include wood ash, agricultural lime and fertilizers listed in Table 4.2 (Column 1) of CAN/CGSB-32.311.

7.2.9.5 Pest control

Knowledge and understanding of pests (in the sugar bush and preparation facility), their habits, and solutions that maintain the bush ecosystem are the preferred basis for pest control. Within the sugar bush, substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 are permitted for control of pests, including diseases and insects. Pests in preparation facilities can be controlled as described in Clause 8.3 Facility pest management and post-harvest management. If an infestation occurs, vertebrate pests may be hunted. It is prohibited to use poisons of any kind to control vertebrate pests.

7.2.10 Tapping

7.2.10.1 Tree diameter and number of taps

Table 8 indicates the maximum number of taps a healthy maple can support, based on its chest height diameter (CHD); CHD is the diameter measured at a height of 1.3 m (4.3 ft) above the soil surface. A tree shall not have more than two tap holes.

Table 8 — Maximum number of taps per healthy maple tree

Diameter measured at a height of 1.3 m (4.3 ft) above the soil surface	Maximum number of taps
Less than 19.9 cm (8 in.)	0
20 to 23 cm (8 to 9 in) (applies to operators who have applied for certification or that were certified before the date of publication of this standard)	1
23.1 to 39 cm (9 to 16 in) (applies to operators who have applied for certification after the date of publication of this standard and to expansions installed after the date of publication of this standard, and is mandatory for all operations after 2035)	1
39.1 cm and greater (16 in and more) (applies to all operations from the date of publication of this standard)	2

7.2.10.2 Depth and diameter of tap holes

Depth of tap holes shall be no more than 5 cm (1.9 in.) from the surface of the bark for trees with a diameter less than 25 cm (9.8 in), or 6 cm (2.4 in.) from the surface of the bark for trees with a diameter equal or greater than 25 cm (9.8 in). Diameters shall not be greater than 7.93 mm (5/16 in). If a tree is diseased, infested with other pests, decaying, or if tap holes are not healing properly, stricter standards shall be implemented, such as:

- a) the number of taps per tree shall be reduced to one where subclause 7.2.10.1 allows two; and
- b) when the chest height diameter is less than 25 cm (~9 7/8 in.), tapping is prohibited.

If the trees are compromised by injury, insects, diseases or decay, Table 8 of subclause 7.2.10.1 may be used in accordance with the standard, however, spouts with a smaller diameter shall be used or operators shall abstain from tapping.

7.2.10.3 Disinfection of tap holes and tapping equipment

Food-grade ethyl alcohol may be sprinkled onto spouts and drill bits during tapping, but sprinkling in tap holes is prohibited. It is prohibited to use any other germicide, such as denatured alcohol (a mixture of ethanol and ethyl acetate) or isopropyl alcohol, in tap holes and on tapping equipment.

7.2.10.4 Renewing the tap and removal of spouts

Maple trees shall only be tapped once a year. The practice of retapping a previously tapped tree during the same season or double tapping is prohibited. To allow trees to heal, spouts shall be removed no later than 60 days after the final, seasonal sap flow. Maple trees shall only be tapped during the sugar bush operation period (maple syrup season). Fall syrup production is prohibited.

7.2.11 Collection and storage of maple syrup

7.2.11.1 Spouts

Spouts shall be made of food-grade materials.

7.2.11.2 Vacuum collection system

All parts of the collection system that may come in contact with sap shall be made of materials suitable for use in the manufacture of food products. Pumps shall be well-maintained and used oil shall be collected and disposed of so as to not contaminate the environment.

Note: It is recommended to recycle all materials of the components of the collection system.

7.2.11.3 Storage

All equipment that may come into contact with sap or its concentrate and filtrates, such as storage tanks, connections and transfer systems, shall be made of materials suitable for use in the manufacture of food products. This also applies to any surface coatings, such as paints and soldered joints. The use of air injection systems with a forced air blower in sap before, during or after its conversion to syrup is prohibited.

7.2.11.4 Collecting with buckets

Pails or buckets may be made of aluminum or plastic. Galvanized steel is prohibited. Buckets shall be covered with a lid. The standards that apply to storage tanks also apply to reservoirs used to transport collected sap.

7.2.12 Conversion of sap to syrup

7.2.12.1 Sap filtration

Sap shall be filtered before processing. The filtration shall not compromise the sap's inherent qualities.

7.2.12.2 Sap sterilization

Sterilization of sap with ultraviolet radiation or by adding a sterilizer prior to conversion is prohibited.

7.2.12.3 Osmosis extraction and membranes

The membrane concentration technique is acceptable for treating sap. Only reverse osmosis and nanofiltration (ultraosmosis) membranes are allowed. In the off-season, osmosis membranes can be stored with filtrate or potable water in the equipment or in a hermetically sealed container. Sodium metabisulfite (SMBS), potassium metabisulfite (PMBS) or citric acid may be added to the filtrate or potable water to prevent microbial growth.

If sodium metabisulfite (SMBS) or potassium metabisulfite (PMBS) is used, the membrane must be rinsed before the next use with a volume of water equal to the hourly capacity of the membrane (for example, 2,271 L [600 US gal/h] of water for a 2,271 L/h [600 US gal/h] membrane). When citric acid is used, the membrane shall be rinsed before the next use with a volume representing at least 40 times the residual dead volume of the equipment. Off-site storage of the membrane (for example, by the membrane supplier) shall be documented. Food-grade lubricants are allowed as a lubricant for equipment used in maple production.

7.2.12.4 Evaporator

Evaporator pans shall be made of stainless steel. They shall be tungsten-inert gas (TIG) welded or soldered with tin-silver solder. Pans made of galvanized steel, copper, aluminum or tin-plated steel are prohibited. Air and environmental quality shall be controlled in the evaporator room. Air injection systems with a forced air blower are prohibited in evaporator pans.

7.2.12.5 Defoamers

The level of foam can be controlled using an organic anti-foaming agent designed for this purpose, or by using organic vegetable oils with no allergenic potential. These products shall be used as production aids. Wood from Pennsylvania maple (*Acer pennsylvanicum*, also known as striped wood) from organic operations may also be used. As last measure, if the use of one of these products proves ineffective, a food-grade anti-foaming agent without genetically modified components may be used; all anti-foaming agents used shall be documented.

7.2.12.6 Syrup filtration and other treatments

Organic maple syrup shall not be refined by artificial means, bleached or lightened in colour. Any manipulation on maple syrup carried out in order to mask defects in flavour, mainly that of the bud, is prohibited. Simple filtration via the following methods is permitted: through cloth or paper, a filter press or calcined diatomaceous earth; or use of silica powder or clay dust with a filter press to remove suspended solids. The use of air injection systems with a forced air blower in maple syrup is prohibited.

7.2.13 Cleaning of equipment for use in syrup production

7.2.13.1 Maple sap collection systems, tubing and tanks

Cleaning shall take place before or after each production season. Permitted sanitation substances are outlined in Table 9:

Table 9 — Permitted sanitation substances for maple syrup production

	For all equipment except tubing	For tubing only
In-season	• Product-based on acetic acid, hydrogen peroxide or peracetic acid	None
Off-season	• Fermented sap from the operation • Product-based on acetic acid, hydrogen peroxide or peracetic acid	• Isopropyl alcohol • Fermented sap from the operation • Product-based on acetic acid, hydrogen peroxide or peracetic acid
Other substances, including substances based on phosphoric acid or sodium hypochlorite, are prohibited.		
Cleaning shall be followed by rinsing with drinking water, filtrate or sap before operations resume.		

7.2.13.2 Osmosis extraction and membranes

Reverse osmosis units and membranes shall first be cleaned using filtrate, according to the time and temperature recommended by the manufacturer.

- a) Cleaning during the production season:
 - 1) If after rinsing with warm filtrate (in an open or closed circuit), a Pure Water Permeability (PWP) test indicates that controlled efficiency is less than 85% of the controlled efficiency recorded at the beginning of the season, a caustic soda-based soap (NaOH) recommended by the manufacturer for membrane cleaning is permitted.
 - 2) If PWP test results stay below 75% of the efficiency recorded at the beginning of the season after the use of a NaOH-based soap, citric acid, acetic acid, peracetic acid and hydrogen peroxide are permitted.
 - 3) Cleaning or a cleaning sequence with substances permitted in subclauses 7.2.13.2 a) 1) and 2) shall be followed by a rinse with clean filtrate or potable water. The rinse volume shall be greater than or equal to 40 times the dead (residual) volume of the unit (total volume of the unit and its components after it is drained).
 - 4) Daily efficiency readings and calculations shall be recorded. Membrane flush water shall be disposed of in a manner that does not harm the environment.
- b) For cleaning after the production season, off-season treatment of membranes with citric acid, acetic acid, peracetic acid and hydrogen peroxide is permitted.

7.2.13.3 Evaporators

At any time, evaporators may be cleaned with potable water or filtrate adding, if necessary, caustic soda, citric acid, acetic acid or products based on acetic acid, hydrogen peroxide or peracetic acid.

Double rinsing is mandatory and the second rinsing shall be done with hot water or hot filtrate.

Cleaning with fermented sap from the operation followed by a double rinse can also be used at the end of the season. The second rinse should be strictly with hot water or filtrate.

7.2.13.4 Reusable bulk storage containers

Bulk maple syrup storage containers may be rinsed at any time with potable water or filtrate.

If washing, sanitizing or deodorizing is required, baking soda or a mixture of acetic acid, hydrogen peroxide and peracetic acid may be used.

A double rinse is mandatory after using a sanitizing or deodorizing product.

7.2.13.5 Prohibited substances

Substances other than those specified in subclauses 7.2.13.1, 7.2.13.2 and 7.2.13.3 are prohibited, including those with phosphoric acid content.

7.2.14 Food additives and processing aids

Transformation of syrup into maple products (for example, maple butter, sugar and taffy) shall comply with this standard. Boiling with microwaves is prohibited. No other substances shall be added to syrup or maple products during production or preparation, whether to improve the taste, texture or appearance. Cones may be used if they constitute less than 5% of the weight of the final product.

7.2.15 Transport, storage and conservation

Maple syrup not intended for immediate consumption shall be stored in food-grade containers that do not alter the chemical composition or quality of the syrup. Permitted containers include barrels made of stainless steel, fibreglass, food-grade plastic or metal with an interior food-grade coating. Reusing single-use barrels is prohibited. Barrels shall carry a unique identification number that is used in all related records. The barrel fill date shall be recorded.

7.2.16 Preparation of maple sap

7.2.16.1. General

Operations that prepare organic and non-organic maple sap in parallel shall have two separate production lines, from sap collection to barrel filling. Equipment or utensils used for non-organic production may not be used for organic production to prevent contamination of organic products.

7.2.16.2 Preparation specifications

The preparation of organic maple syrup shall be carried out in accordance with the requirements of Clause 7.2. Prohibited products may not be present or used on the operation.

7.3 Mushroom production and mushroom products

All relevant subclauses in this standard apply to mushroom production and mushroom products where this subclause has no specific requirements, including subclauses 5.1.3, 5.1.4, 5.1.5, 5.1.6, and 5.1.7. For outdoor production, subclause 5.2.2 also applies.

7.3.1 Production sites and structures

For organic mushrooms or mushroom products, the operator shall manage production units in a manner that ensures substrates and mushrooms do not come into contact with prohibited substances. Substrates shall be produced in accordance with this standard and applicable entries in Table 4.2 (Column 1) of CAN/CGSB-32.311 such as Composting feedstocks and Compost produced on the production unit:

- a) For indoor facilities, organic mushrooms shall not come into contact with prohibited substances that would compromise the integrity of the crop.
- b) For mushrooms grown in soil, prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.
- c) For new installations or replacement purposes, lumber treated with prohibited substances shall not be used in structures, containers or other surfaces that come into contact with the growth substrate or mushrooms.

7.3.2 Substrates and growth media

7.3.2.1 Wood substrates

Logs, sawdust or other wood-based materials used as substrates shall come from wood, trees or logs that have not been treated with prohibited substances.

7.3.2.2 Manure

Subclause 5.5.1 applies to manure (including any non-organic agricultural substances in the manure) used in growth substrates. Manure shall be composted according to the requirements for Compost, Compost from off-farm sources or Compost produced on the farm in Table 4.2 of CAN/CGSB-32.311.

7.3.2.3 Agricultural substances

Agricultural substances, such as straw, grain or feather meal, shall be from organic sources. If organic sources are not commercially available, non-organic sources may be used, provided that they are composted according to the requirements for Compost, Compost from off-farm sources or Compost produced on the farm in Table 4.2 of CAN/CGSB-32.311.

7.3.3 Spawn

Organic spawn (seed) shall be used (see definition in Clause 3). Spawn grown or treated with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 may be used if organic spawn is neither:

- a) available from within the production unit; nor
- b) commercially available.

To be considered organic spawn, spawn shall be propagated from organic mycelium and produced on organic agricultural substrates, wood substrates or manure (as defined in subclause 7.3.2 of this standard).

7.3.4 Crop pest control and sanitation

Preventative pest control measures shall include the following:

- a) removal of infected materials. Infected mushroom strains shall be burned, moved at least 50 m (164 ft) from a production site (if, for example, the diseased logs are kept for research), or disposed of as recommended by good management practices;
- b) using cultivation sites that are free of debris from understory, diseased trees and trees infected by other pests; and
- c) sanitation with substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311.

Maintenance of production equipment between production cycles with cleaners, sanitizers and disinfectants listed in Table 4.2 (Column 2), Table 7.3 and Table 7.4 of CAN/CGSB-32.311 is permitted.

7.3.5 Mushroom product preparation

Wherever organic product preparation takes place, Clauses 8.1 and 8.2 apply.

7.3.6 Facility pest management

Clause 8.3 applies to pest management practices in and around mushroom facilities.

7.4 Sprouts, shoots and microgreens production

7.4.1 Clause 7.4 applies to crops that are harvested within 30 days of imbibition, either to be consumed with roots attached (e.g., sprouts and nanoshoots) or to be cut from the roots for consumption (e.g., shoots, living greens and microgreens).

7.4.2 Clause 7.4 does not apply to whole head products (e.g., heads of lettuce, mini cabbage).

7.4.3 Sprouts, shoots, and microgreens may be produced in water or in a growing media, whether they are grown in a growth chamber or vessel, greenhouse or other structure used to grow crops.

7.4.4 Organic seed shall be used.

Note: A water monitoring program should be in place to ensure water is potable.

7.4.5 Artificial lighting is permitted to supplement or replace natural light.

7.4.6 Inert containers made of stainless steel and food-grade plastic are permitted in both water and growing media production systems.

7.4.7 Containers made of untreated plant-based materials (for example burlap, coconut coir, fibre) are prohibited in water production systems, but are permitted in growing media production systems.

7.4.8 Fertilizers in all stages of growing and harvesting are prohibited in water production systems.

7.4.9 When growing sprouts, shoots or microgreens in a growing media, substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 are permitted as the growing media and for crop nutrition. The physical structure of the growing media shall include both a mineral fraction (sand, silt or clay, excluding perlite and vermiculite) and a biological fraction.

7.4.10 Substances used for cleaning or sanitation of seed shall be limited to substances listed in Table 4.2 (Column 2) or Table 7.3 of CAN/CGSB-32.311.

7.4.11 When growing sprouts, shoots or microgreens the operator shall:

- a) use reusable and recyclable containers and flats whenever possible;
- b) reuse or recycle growing media whenever possible;
- c) only use substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311 if crop production aids are required; and
- d) use appropriate equipment cleaners, disinfectants and sanitizers listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311.

7.4.12 Sprouts, shoots and microgreens product preparation

Wherever harvested organic product preparation takes place, Clauses 8.1 and 8.2 apply.

7.4.13 Facility pest management

Clause 8.3 applies to pest management practices in and around facilities.

7.5 Crops Grown in Structures or Containers (previously known as Greenhouse crops)

7.5.1 Clause 7.5 applies to:

- a) all organic crops grown in containers (indoors or outdoors). Containers include production systems that limit root contact with native soil, such as crops grown in pots, troughs and plastic-lined beds, etc.; and
- b) in-ground crops that are grown using supplemental lighting, heating or CO₂ enrichment within a structure, such as a greenhouse, tunnel (high or low), hoophouse, etc.

7.5.2 Clause 7.5 does not apply to:

- a) sprouts, shoots or microgreens (covered in Clause 7.4);
- b) in-ground crops grown in a structure, such as a cold frame, caterpillar tunnel, etc., without supplemental lighting, heating or CO₂ enrichment; or
- c) crops grown under row cover, insect netting or bird netting (covered in Clause 5).

7.5.3 All relevant subclauses in this standard apply to crops grown in structures or containers where this subclause has no specific requirements, including Clauses 1 to 4, and subclauses 5.1.1, 5.1.2 (for in ground operations) and subclauses 5.1.3, through 5.9, but excluding greenhouse container systems from 5.1.8.

Additional exceptions for container operators are as follows:

- a) crop rotations as part of a soil building program (subclause 5.4.2) are not required;
- b) mechanical tillage and cultivation practices as outlined in subclause 5.4.5 are not applicable; and
- c) the requirement in subclause 5.4.4 with regards to the organic matter produced on the operation is superseded by the allowance for disposal in subclause 7.5.12 b1); and if manure is not used, subclause 5.5.1 does not apply.

7.5.4 In a permanent, in-ground soil system, prohibited substances shall not have been used for at least 36 months before the harvest of an organic crop.

7.5.5 Hydroponic and aeroponic productions (see definitions in Clause 3) are prohibited.

7.5.5.1 The soil used in a container system shall support and promote microorganism and macroorganism populations that contribute, like a living soil in the field, to nourishing plant via its roots. If necessary, the soil can be inoculated with non-genetically engineered microorganisms (see Clause 1.4 a) of this standard and Table 4.2 Microorganisms and microbial products of CAN/CGSB-32.311). The soil shall:

- a) not contain prohibited substances (see Clause 1.5 of this standard);
- b) be composed of substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311;
- c) contain a soil mineral fraction (sand, silt or clay, that excludes perlite and vermiculite) that makes up at least 2% of the soil mix as measured by dry weight or volume (whichever measure is appropriate) when initially mixed;
- d) contain compost compliant with this standard that makes up at least 10% of the volume of the soil mix. As an exception, seedling/starter mixes may contain less than 10% compost if needed to ensure adequate germination/rooting; and
- e) a biological fraction that supports root-soil interaction and supports soil health.

7.5.5.2 The starting and maintained volume of soil in containers shall be proportional to the overall plant size, growth rate, targeted yield, and length of crop cycle.

- a) For crops grown in structures covered by Clause 7.5, the photosynthetic area comprises the floor area devoted to crop production including the aisles and spaces between plants but not including non-production areas, such as centre or header aisles, service ways, and storage areas, etc.
- b) For outdoor crops grown in containers, the photosynthetic area comprises the ground area devoted to crop production including the walkways, aisles and spaces between plants, but not including non-production areas, such as field access ways, turn-around areas, hedgerows and storage areas, etc.
- c) The length of a crop cycle will vary across the country, particularly in unheated structures, and should be taken into consideration when determining the volume of soil required. For perennial crops, the length of the active crop cycle starts at the beginning of seasonal growth and ends at the end of harvest during the same season.

Note: For container crops that are difficult to top-dress, for example strawberries, sufficient nutrition should be provided in the soil, prior to the start of the crop, to provide available nutrition continuously for the duration of the crop cycle. When this is not possible, liquid amendments listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 may be used, and compliant with subclause 5.4.4 of CAN/CGSB-32.310.

7.5.5.3 The minimum amount of soil required for crops not covered by subclause 7.5.5.4 is 2.5 L (0.66 gal) of soil per m² of photosynthetic area per week of crop production time. The maximum amount of soil required in any case is 60 L/m² (1.2 gal/ft²) of photosynthetic area. Crop production time is counted from the start of plant propagation (for example seeding, sticking of unrooted vegetative cuttings, divisions, etc.) until final harvest.

7.5.5.4 The following conditions apply to containerized, semi-indeterminate and indeterminate staked crops (for example, tomatoes, peppers, cucumbers, eggplant):

- a) additional compost applications shall be included in the fertility program;
- b) the maintained soil volume shall be at least 60 L/m² (1.2 gal/ft²), based on the photosynthetic area. Interplanting short-lived crops among other crops (e.g., basil among tomatoes) or having multiple crop cycles within a year (i.e., cucumber) do not reduce this 60 L/m² requirement; and
- c) production units existing prior to November 2016 that have been continuously managed organically by the same operator, have not had major renovations, have not changed production area and do not comply with subclause 7.5.5.4 b) are permitted to continue producing staked crops using a soil volume smaller than 60 L/m² (1.2 gal/ft²).

Note: Part 13 Organic Products of the *Safe Food for Canadians Regulations* requires that the application for the organic certification of crops grown in greenhouses with a permanent in-ground soil system be filed at least 15 months before the day on which the food is expected to be sold. During that period of time, compliance with this standard will be assessed by the certification body and this assessment must include at least one inspection of the production unit, during production, in the year before crops may be eligible for certification and one inspection, during production, in the year crops are eligible for certification. This requirement does not apply to greenhouses built on land that is part of an existing organic operation. In the case of an initial application for organic certification of crops grown in containers, the application for certification must be filed within 12 months before the day on which the product is expected to be marketed.

7.5.6 Supplemental heat and carbon dioxide (CO₂) enrichment are permitted. Supplemental nutrition with substances listed in Table 4.2 (Column 1) of CAN/CGSB-32.311 is permitted.

7.5.7 The sun shall be the primary source of light for photosynthesis from sunrise to sunset for all crops covered by Clause 7.5 on a year-round basis (i.e., growing plants in a predominantly opaque structure is prohibited, even if it has windows that permit some sunlight to reach the plants).

In addition to sunlight, supplemental lighting may be used (see subclause 7.5.11 b 2)). As an exception, 100% artificial lighting can be used for annual seedling and transplants that are started by the operation in winter or spring and will be planted in the same operation. The exception allows 100% artificial lighting only for these plants for the period from seeding to final transplanting. "Final transplanting" means moving a seedling or transplant into its final growing container or into the ground.

7.5.8 For crops harvested within 30 days of imbibition, organic seed shall be used.

7.5.9 Plants and soil, including potting soil, shall not come into contact with prohibited substances, including wood treated with prohibited substances.

7.5.10 For crop production, the operator shall:

- a) use reusable and recyclable pots and flats whenever possible;
- b) use substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311 as required; and
- c) use appropriate equipment cleaners, disinfectants and sanitizers listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311.

7.5.11 The following procedures, processes or substances are permitted to:

- a) clean and disinfect crop structures, equipment that may contact the soil or crop, and plant containers, pots and flats:
 - 1) substances listed in Tables 7.3 or 7.4 of CAN/CGSB-32.311; and
 - 2) steam-heat sterilization;

- b) stimulate growth or development:
 - 1) substances listed in Table 4.2 (Column 1 or 2) of CAN/CGSB-32.311; and
 - 2) control of daily temperature and light levels;
- c) prevent and control pests including diseases, insects and other organisms:
 - 1) substances listed in Table 4.2 (Column 2) of CAN/CGSB-32.311;
 - 2) pruning;
 - 3) roguing;
 - 4) vacuuming;
 - 5) temperature manipulation, for example freezing, heating, steaming;
 - 6) pest exclusion from greenhouses with air filters, screens or other physical devices; and
 - 7) biological control methods.

7.5.12 Soil building and health are the cornerstones of organic agriculture and hence Clause 5.4 regarding “Soil fertility and nutrient management” of this standard applies to crops grown under Clause 7.5, except that subclause 5.4.5 does not apply to container production as outlined in Clause 7.5 c). In addition:

- a) in-ground operations shall regenerate their soils in the same fashion as field crop operations;
- b) in addition to the requirements in subclause 7.5.5, container operations
 - 1) shall build permanent soils in their containers reusing their soil for a minimum of three consecutive years. If necessary, and with justification, the soil may be replaced prior to three years. Spent soil shall be recycled in or outside the operation unless the disposal of used soil is mandatory due to a regulatory directive. Container operators have 36 months from the date of publication of this standard to comply with this requirement.
 - 2) may graft onto disease-resistant rootstock, freeze the soil in their containers in winter, or regenerate the soil by introducing organic matter such as compost or biodegradable plant mulch (straw or hay).
 - 3) may dispose of plant debris as necessary.

7.6 Wild crops

7.6.1 An organic wild plant product shall be harvested from a clearly defined area or production unit. The operator shall provide documentation proving that prohibited substances have not been used for at least 36 months before the harvest of an organic crop.

7.6.2 The operator shall prepare an organic plan (see Clauses 4.1, 4.2 and 4.3) that includes:

- a) a detailed description of production areas and harvest methods;
- b) management practices that preserve wild species and avoid disturbance of the environment; and
- c) a record keeping system that meets the requirements of Clause 4.4.

7.6.3 Wild products shall be considered organic on the condition that they are harvested in relatively undisturbed or stable natural settings. A wild plant shall be harvested or picked in a manner that promotes growth and production and does not damage the environment.

7.6.4 The production zone for wild crops shall be isolated from contact with prohibited substances by a clearly defined buffer (see subclause 5.2.2). Harvest sites shall be located more than 1 km (0.62 mi) from potential sources of environmental contamination, such as golf courses, dumps, sanitary landfill sites and industrial complexes.

7.6.5 Wild crop product preparation

Wherever organic product preparation takes place, Clauses 8.1 and 8.2 apply.

7.6.6 Facility pest management

Clause 8.3 applies to pest management practices in and around crop facilities.

7.7 Organic insects

Clause 7.7 covers insects, snails, and other terrestrial invertebrates, excluding bees (which are addressed in Clause 7.1 Apiculture of CAN/CGSB-32.310). All the relevant elements of Clauses 1 to 6 in this standard shall apply.

7.7.1 Origin of insects

7.7.1.1 Insects shall:

- a) be hatched on organic production units;
- b) be managed organically throughout their lifetime.
- c) be the offspring of organic parents. As an exception, insects may be the offspring of non-organic parents from outside the operation that have not been treated with prohibited substances after being introduced into the operation. These introduced non-organic parents shall never be sold as organic.

Note: Low replacement rates for organic insect breeding stock are expected. Operators should maintain their own organic breeding stock.

7.7.2 Insect feed

7.7.2.1 As per subclauses 6.4.1 and 6.4.2, the operator shall provide an organic feed ration that meets the nutritional requirements of the species being reared and limits cannibalism.

7.7.2.2 Feed, feed additives and feed supplements listed in Clause 6.4.5 of this standard are prohibited; the following exceptions apply only for insects and only if permitted by CFIA regulations for the end use of the product and to recognize insects' natural consumption of decomposing and waste materials as part of their ecological role in nutrient cycling:

- a) mammalian or avian slaughter by-products (as referenced in Table 5.2 of CAN/CGSB-32.311) from organic sources and guaranteed free of Specified Risk Materials (SRM) are permitted;
- b) feed formulas that contain manure or other animal waste (as referenced in Table 5.2 of CAN/CGSB-32.311) sourced from organic livestock operations are permitted.

7.7.2.3 Insects of all ages shall have access to a species-appropriate source of water, whether from a vessel of potable water, environmental humidity, or feed moisture.

7.7.2.4 By exception, subclause 6.4.7 a) applies as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions).

7.7.3 Insect health care

7.7.3.1 The operator shall establish and maintain preventative livestock health care practices, including:

- a) a feed ration sufficient to meet the nutritional requirements of the livestock, as required under subclause 7.7.2.1;
- b) housing, space allowance and sanitation practices that minimize the occurrence and spread of disease and parasites.

7.7.3.2 The operator shall not administer (see definitions of “antibiotic”, “veterinary drug” and “parasiticide” in Clause 3):

- a) antibiotics;
- b) veterinary drugs, in the absence of illness, other than vaccines;
- c) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion;
- d) synthetic parasiticides or anti-microbials; nor
- e) health care products other than those listed in Table 5.3 of CAN/CGSB-32.311 and used as annotated.

7.7.3.3 Physical alterations of living invertebrates, such as the trimming of wings or removing of legs, are prohibited.

7.7.3.4 The method of killing shall ensure rapid death and minimize invertebrate suffering.

7.7.3.5 Medical treatment shall not be withheld from sick or injured insects to preserve their organic status. If methods permitted in organic production fail, all appropriate medications shall be used to restore insects to health. Insects that are treated with a method that is not permitted under organic production shall lose their organic status but may remain breeders in the organic operation.

7.7.4 Insect living conditions

7.7.4.1 The operator shall establish and maintain stocking densities and living conditions (environment, facilities, air quality and population size) that accommodate the health and natural behaviour of the species; minimize stress, pain, injuries and cannibalism; and meet the needs of the species for exploratory and foraging behaviour.

7.7.4.2 Density requirements may vary depending on many factors, such as the type of production system, species and production stage of the animal.

7.7.4.3 Air quality and living conditions of the insects shall be maintained and based on the needs and metabolic output of each species. The operator shall monitor the temperature, humidity, levels of dust particles and concentration of potentially damaging gases, such as ammonia.

7.7.4.4 Light cycle and light density shall satisfy the specific needs of the species being reared.

7.7.4.5 Land used for outdoor production shall be free of prohibited substances for 36 months prior to use.

7.7.4.6 Facilities shall be designed and managed to prevent the escape of invertebrates at any stage of development into the surrounding environment.

7.7.4.7 Habitat construction materials, equipment, structural components or furnishing elements shall be kept in a reasonable hygienic condition in order to protect the insects' health and allow natural expression of behaviours (jumping, climbing, hiding), such as:

- a) Wood and other structural materials shall not have been treated with prohibited substances.
- b) Cardboard, including corrugated cardboard, may be used for structures; cardboard that is waxed or impregnated with a fungicide or another prohibited substances is prohibited.

- c) Glossy paper and paper containing coloured ink are prohibited.
- d) Bedding or substrate material of agricultural origin shall be organic. However, if organic bedding is not commercially available, and if bedding or substrate is required for production, transportation or handling, non-organic bedding is permitted provided it shall not contain, or have been treated with, prohibited substances and shall meet the requirements in Clauses 1.4 and 1.5 of this standard.

7.7.4.8 Frass management practices shall be implemented in a manner that minimizes soil and water degradation. Frass storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water.

7.7.4.9 Clause 8.3 applies to pest management practices in and around insect production facilities.

Note: This clause will be reviewed in 2031 to comply with the latest industry standards and research.

8 Maintaining organic integrity during cleaning, preparation and transportation

This clause applies to all operations that handle (including packaging and labelling), store or transport organic products for production or processing. During these activities, a central objective is to maintain the inherent organic qualities of the product through strict adherence to the procedures and principles of this standard. Operators are responsible for maintaining organic integrity at all points of the market supply chain, from production through the point of sale to the final consumer.

8.1 Maintaining integrity

8.1.1 Preparation materials, such as counters, containers and conveyors, in contact with food shall be clean and of food-grade quality.

8.1.2 Incidental additives shall not compromise organic integrity:

- a) active ingredients of hand sanitizers used on hands that come into direct contact with organic products shall be listed in Table 7.3 of CAN/CGSB-32.311. Synthetic dyes, synthetic fragrances synthetic thickening agents, synthetic suspending agents, synthetic emulsifying agents and synthetic high viscous extenders, such as carbomers, are not permitted;
- b) culinary steam, that is, steam used in direct contact with organic products or packaging, shall only contain:
 - 1) substances listed in Tables 6.3, 6.4 or 6.5 of CAN/CGSB-32.311; and/or
 - 2) food-grade cleaners, disinfectants and sanitizers authorized for organic product contact in Table 7.3 of CAN/CGSB-32.311;
- c) food-contact lubricants shall be listed in Tables 6.3, 6.4 or 6.5 of CAN/CGSB-32.311;
- d) use of cleaners, disinfectants and sanitizers shall comply with the requirements in 8.2 of this standard.

8.1.3 Mechanical, physical or biological processes (such as fermentation and smoking) are permitted.

8.1.4 To prevent commingling, organic products shall be segregated or otherwise protected from non-organic products at all times, for example, during processing, storage, at bulk and unbound stages.

8.1.5 If a production unit handles or prepares both organic and non-organic ingredients or products:

- a) organic and non-organic ingredients and products shall not be mixed at any stage of preparation;
- b) every measure shall be taken to ensure that the organic and non-organic identity of the finished product is maintained;

- c) organic ingredients and products that are being moved or transferred within the operation shall remain visually identifiable;
- d) operators shall document removal events used to prevent cross-contamination of organic and non-organic production runs;
- e) handling or preparation of organic ingredients and products shall be carried out continuously until the run is complete;
- f) organic runs shall be separated by place or time from similar runs of non-organic products; and
- g) organic runs shall be planned in advance to prevent commingling.

8.1.6 Organic product packaging shall:

- a) maintain organic product quality and integrity; and
- b) be minimal in a manner that is consistent with 8.1.6 a). Packaging materials that minimize harm to the environment throughout their life cycle are preferred; and
- c) comply with prohibitions in Clauses 1.4 b) and 1.4 e).

8.2 Cleaning, disinfecting and sanitizing

8.2.1 Food-grade cleaners, disinfectants and sanitizers listed in Table 7.3 of CAN/CGSB-32.311 may be used as annotated:

- a) on organic product contact surfaces, which include equipment, storage and transport units;
- b) in direct contact with organic products.

8.2.2 Cleaners, disinfectants and sanitizers listed in Table 7.4 of CAN/CGSB-32.311 may be used on organic product contact surfaces. Operators shall document that:

- a) they used as annotated; and
- b) removal event(s) are effective and prevent organic product from coming into contact with substances used on surfaces prior to organic production.

8.2.3 If substances in Tables 7.3 and 7.4 are ineffective, other cleaners, disinfectants or sanitizers may be used on organic product contact surfaces. Operators shall document:

- a) why the permitted substances were unsuitable or ineffective for cleaning, disinfecting or sanitizing specific equipment;
- b) that removal event(s) have eliminated the substance(s) from organic product contact surfaces prior to organic production; and
- c) that effluent discharge was neutralized to minimize the negative impact on the environment.

8.2.4 Specific cleaning, sanitation and disinfection requirements in Clause 7 of this standard supersede those specified in Clause 8.2.

8.3 Facility pest management and post-harvest management

8.3.1 Good production and manufacturing practices shall be adopted to prevent pest problems and shall involve:

- a) the removal of pest habitat and food sources;
- b) sealing the facility to limit pest intrusion when applicable; and
- c) using environmental management (for example, altering light, temperature and atmosphere) to further prevent pest intrusion and reproduction.

8.3.2 Mechanical and physical methods of pest management may be used, including:

- a) sticky tape, sticky traps or glue boards for insect monitoring and control (e.g., in light traps);
- b) live capture traps and snap traps; and
- c) lures, repellents, and baits as listed in Table 8.2 of CAN/CGSB-32.311.

8.3.3 If the practices enumerated in subclauses 8.3.1 and 8.3.2 are ineffective, the operator may use:

- a) pest control substances listed in Table 8.2 of CAN/CGSB-32.311.
- b) glue boards for rodent control, in the exceptional situation when an infestation is demonstrated.

In either case, the operator shall record the target pests, substances used, start and end dates, and the location(s) of pest control devices.

8.3.4 In all cases for rodent control covered by subclauses 8.3.2 and 8.3.3, the catch shall be disposed of promptly and humanely.

8.3.5 If the practices specified in subclause 8.3.3 are ineffective, substances not listed in Table 8.2 of CAN/CGSB-32.311 may be used provided that there is no risk to organic product status or integrity. The following conditions apply:

- a) If pest activity assessments justify the use of fumigation or fogging, operators shall ensure and document that organic products or the packaging materials are not present when these substances are used;
- b) If rodent activity assessments justify using rodenticide-containing baits, the bait shall:
 - 1) be enclosed in tamper-proof containers, in locations where there is no potential for contamination of organic products, crops, or fields; and
 - 2) not be used inside organic product processing areas or organic product storage areas
- c) Operators shall clearly document:
 - 1) why permitted substances were not suitable or were found to be ineffective for pest management;
 - 2) how operators prevented contact between organic products, packaging materials, crops and fields with substances that are not listed in Table 8.2;
 - 3) all activities involved in the use, storage and disposal of substances that are not listed in Table 8.2; and
 - 4) a plan to minimize potential for non-target wildlife poisoning when baits containing rodenticide are used.

8.3.6 If pest and disease control substances that are not listed in Table 8.2 of CAN/CGSB-32.311 are used under a mandatory government program, operators shall monitor and document their use.

Note: In the event of an emergency pest outbreak, operators are required to notify their certification body immediately of any change that may affect organic product certification.

8.3.7 Substances in Table 8.3 of CAN/CGSB-32.311 may be used for post-harvest storage.

8.4 Transportation

8.4.1 Every measure shall be taken to ensure that the integrity of organic inputs, ingredients and products is not compromised in transit. Physical segregation or other protection methods shall be used to avoid commingling or substitution with non-organic inputs, ingredients and products.

8.4.2 Documentation including the following information shall accompany the organic product while in transit, including bulk loads:

- a) the name and address of the person or organization responsible for the production, preparation or distribution of the product;
- b) the name of the product;
- c) the organic status of the product;
- d) the name of the certification body; and
- e) information that ensures traceability, for example, the lot number.

8.4.3 Organic products shall not be exposed to pesticides or pest control substances that are not listed in Table 8.2 of CAN/CGSB-32.311 during any stage of transit or at border crossings.

Note: Owners are responsible for the organic integrity of the organic product while it is in transit. This includes the use of common carriers and custom hauling. Transport companies share responsibility for organic integrity while loading, transporting, or off-loading certified organic products.

9 Organic product composition

This clause applies to all operations involved in organic product preparation, including retailers.

9.1 Product composition

9.1.1 Organic product formulations shall consist primarily of organic whole or processed agricultural ingredients, organic whole or processed aquaculture ingredients (see 2.1, CAN/CGSB-32.312), and organic processing aids. Other permitted ingredients and processing aids, as described in Clause 9.2, shall be kept to a minimum.

9.1.2 The evaluation of product composition shall exclude non-agricultural sub-parts of ingredients listed in Tables 6.3 and 6.4 in CAN/CGSB-32.311 that have a technical or functional effect on the ingredient but not on the final organic product, and are not declared on the final organic product label. These ingredient sub-parts may be present in the final organic product but only in insignificant amounts. This includes non-agricultural sub-parts of ingredients, such as anticaking agents, carriers and fillers, preservatives, stabilizers, pH adjusters or buffers. The calculation of organic percentages shall account for all constituent ingredients or ingredient sub-parts, distinguishing between organic and non-organic components of each ingredient contained in the product.

9.1.3 The percentage of all organic ingredients in an organic product shall be calculated as follows:

- a) Solid products (except livestock feed: see subclause 9.1.3 d)): Divide the net mass, excluding water and salt, of all organic ingredients in the formulation by the net mass, excluding water and salt, of all ingredients.
- b) Liquid products: If the product and its ingredients are liquid, divide the fluid volume of all organic ingredients, excluding water and salt, by the fluid volume of all ingredients, excluding water and salt. If the principal display panel, specification sheet or certificate of analysis uses phrases such as “reconstituted from concentrates” to describe the final product, single-strength concentrations of the ingredients or the finished product shall be used to calculate organic percentages.
- c) Solid and liquid products: Using data from the product's recipe and considering work-in-process ingredients made onsite, divide the combined net mass of solid organic ingredients (except for salt added during production) and liquid organic ingredients (except for water or salt/brine added during production) by the total mass of all ingredients. The water and salt content of ingredients received are not to be deducted.
- d) Livestock feed shall exclusively contain organic agricultural ingredients and permitted feed additives or feed supplements as listed in Table 5.2 of CAN/CGSB-32.311. The requirements of 9.2 do not apply to livestock feed. No actual calculation required.
- e) Seed products as defined by the *Seeds Act* (see Clause 2.4) shall contain 100% organic seeds and may be treated, primed, pelleted, or coated with substances listed in Table 4.2 (Column 1 or 2) or Table 7.3 of CAN/CGSB-32.311.

9.1.4 The percentage of all organic ingredients in an organic product shall be rounded down to the nearest whole number.

9.2 Categorization of organic food

Based on the percentage of their organic ingredients, organic products fall into two categories:

9.2.1 95% organic content (or more)

Such products shall not contain an ingredient in both organic and non-organic form.

Such products may contain up to 5% of the following:

- a) “ingredients classified as food additives” and “ingredients not classified as food additives” as listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, respectively, subject to requirements specified in substance listing annotations and restrictions specified in 6.2 of CAN/CGSB-32.311. Listed ingredients of agricultural origin shall meet the requirements in Clauses 1.4 a), 1.4 c), 1.4 d) of this standard and Clause 6.2 of CAN/CGSB-32.311;
- b) non-organic agricultural processing aids that meet the requirements in Clauses 1.4 a), 1.4 b), 1.4 c), and 1.4 d) of CAN/CGSB-32.310, and any annotations listed in Table 6.5 of CAN/CGSB-32.311;
- c) non-agricultural processing aids as listed in Table 6.5 of CAN/CGSB-32.311, subject to the requirements specified in substance listing annotations;
- d) non-organic agricultural ingredients that meet the requirements in Clauses 1.4 a), 1.4 c) and 1.4 d) of this standard, and non-organic aquacultural ingredients that meet the requirements in Clauses 1.4 a), 1.4 b) 1.4 c) and 1.4 h) of CAN/CGSB-32.312, and wild-capture aquatic animal ingredients. These ingredients are also subject to organic commercial availability requirements.

9.2.2 70-95% organic content

Such products shall not contain an ingredient in both its organic and non-organic form.

Such products may contain up to 30% of the following:

- a) non-organic agricultural ingredients subject to the requirements in Clauses 1.4 a), 1.4 c), and 1.4 d) of this standard;
- b) non-organic aquacultural ingredients subject to the requirements in Clauses 1.4 a), 1.4 b) 1.4 c) and 1.4 h) of CAN/CGSB-32.312, and wild-capture aquatic animal ingredients;
- c) “ingredients classified as food additives”, and “ingredients not classified as food additives,” as listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, respectively, subject to the requirements specified in substance listing annotations and restrictions specified in 6.2 of CAN/CGSB-32.311. Listed ingredients of agricultural origin shall meet the requirements in Clauses 1.4 a), 1.4 c), 1.4 d) of this standard and Clause 6.2 of CAN/CGSB-32.311;
- d) non-organic agricultural processing aids that meet the requirements in Clauses 1.4 a), 1.4 b), 1.4 c), and 1.4 d) of this standard and any annotations listed in Table 6.5 of CAN/CGSB-32.311;
- e) non-agricultural processing aids listed in Table 6.5 of CAN/CGSB-32.311 subject to the requirements specified in substance listing annotations.

10 Procedures, criteria and conditions to amend CAN/CGSB-32.311, *Organic production systems – Permitted substances lists*

This clause applies to all proposed amendments to the permitted substances lists (PSL). Only generic substances are listed in the PSL. Brand name substances, which may be a combination of generic substances, are not eligible for inclusion on the PSL. This clause does not apply to packaging materials, equipment surfaces, or other similar substances or materials.

10.1 Substance review procedures

10.1.1 Criteria provided in this clause shall be the determinants for amending CAN/CGSB-32.311.

10.1.2 The substance review process shall be open, transparent and fully participatory according to the Canadian General Standards Board (CGSB) procedures.

10.1.3 Consideration shall be given to the consequences a proposed amendment may have on equivalency and harmonization of this standard with standards and regulations of other jurisdictions.

10.2 Permitted substances criteria

10.2.1 Substances included in the PSL shall:

- a) comply with the general principles of organic production specified in the Introduction of this standard, and
- b) comply with Clauses 1.4 and 1.5 of this standard.

10.2.2 Substance reviews shall:

- a) consider the necessity, origin and mode of production, and the social and ecological impact of the production and application of the substance;
- b) include a detailed description of the substance and a substantive rationale along with documentation in support of the proposed amendment; and
- c) include an evaluation of all available alternatives, including substances and acceptable practices outlined in this standard, and in other production systems.

10.2.3 If applicable, the substance annotation shall include:

- a) restrictions concerning its origin and mode of production;
- b) restrictions concerning its composition and usage; and
- c) a commercial availability clause which allows for the use of an alternative substance when the preferred form of the substance as outlined in the following tables is not available in sufficient quality or quantity, at the time of publication.

10.3 Specific substance review criteria

The criteria used for guiding the review of a substance are described in Tables 10, 11, 12 and 13.

Table 10 — Substance review criteria for permitted substances in crop production

	Soil amendments and crop nutrition (Table 4.2 Column 1 of CAN/CGSB-32.311)	Crop production aids and materials (Table 4.2 Column 2 of CAN/CGSB-32.311)
A. Necessity	Shall be necessary to improve or maintain soil fertility, to fulfil specific requirements of crops, or for specific soil conditioning and rotational purposes that cannot be satisfied by the requirements and practices of this standard.	Shall be necessary to manage plant diseases, insects, weeds and other pests. Used when no other adequate biological, physical or plant breeding alternatives or effective management practices are available.
B. Origin and mode of production	1. Shall be of plant, animal, microbial or mineral origin. Substances may be produced through physical (for example, mechanical or thermal), enzymatic or microbial (for example, composting, fermentation or digestion) methods of transformation. 2. Shall be produced from crops and livestock produced in accordance with this standard, or from naturally occurring minerals. 3. If preferred forms, as described in B1 and B2, of these substances do not exist, alternative substances may be considered for inclusion.	
C. Impact	Substance reviews shall consider: 1. The impact of a substance's manufacture and disposal after use on the environment including impacts on ecology, surface and ground water, and soil and air quality, including substance persistence, degradation and concentration effects. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodibility and tilth), surface and ground water quality, ecosystems (in particular, non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Table 11 — Substance review criteria for permitted substances in livestock production

	Livestock feed (Table 5.2 of CAN/CGSB-32.311)	Livestock health care (Table 5.3 of CAN/CGSB-32.311)
A. Necessity	1. Shall be necessary to correct documented essential nutrient deficiencies in the forage or feed ration, when other biological, cultural or physical treatments permitted by this standard are not available; or 2. Shall be necessary to ensure and preserve product quality, when other biological, cultural or physical treatments permitted by this standard are not available.	Shall be necessary to prevent or treat livestock health problems when other treatments permitted by this standard are not available.
B. Origin and mode of production	Shall be organic or derived from biological or mineral sources.	Shall be organic or derived from biological or mineral sources.
C. Impact	Substance reviews shall consider: 1. The impact of a substance's manufacture and disposal after use on the environment, including impacts on ecology, surface and ground water, and soil and air quality, including substance persistence, degradation and concentration effects. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodibility and tilth), surface and ground water quality, ecosystems (in particular non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Table 12 — Substance review criteria for permitted substances in processing of organic food

	Food ingredients and processing aids (Tables 6.3, 6.4 and 6.5 of CAN/CGSB-32.311)
A. Necessity	1. Shall be necessary to correct documented, essential nutrient deficiencies of the product, that is, vitamins and minerals; or when required by regulations; 2. Shall be essential for ensuring the safety of the product; 3. Shall be used only when it is not feasible or practical to produce or store such products without the use of these substances; or 4. Shall be necessary to achieve a technological effect during processing (for example, filtration) or an organoleptic effect in the final product (for example, colouring and flavouring).
B. Origin and mode of production	1. Shall be found in nature. Substances may be produced using physical (for example, extraction, precipitation), enzymatic or microbial (for example, fermentation) processes, as well as through chemical extractions that do not alter the substance's chemical structure. 2. Preferably from organic sources. 3. If preferred forms, as described in B1 and B2, of these substances do not exist, alternative substances may be considered for inclusion.
C. Impact	Substance reviews shall consider the impact of use and potential misuse on: 1. Human health through both food and non-food exposure, including acute and chronic toxicity, allergenicity and metabolites; 2. product quality, including nutrition, flavour, taste, appearance and storage, if applicable; 3. consumer perception of the nature, substance and quality of a food product.

Table 13 — Substance review criteria for permitted substances in cleaning and sanitation

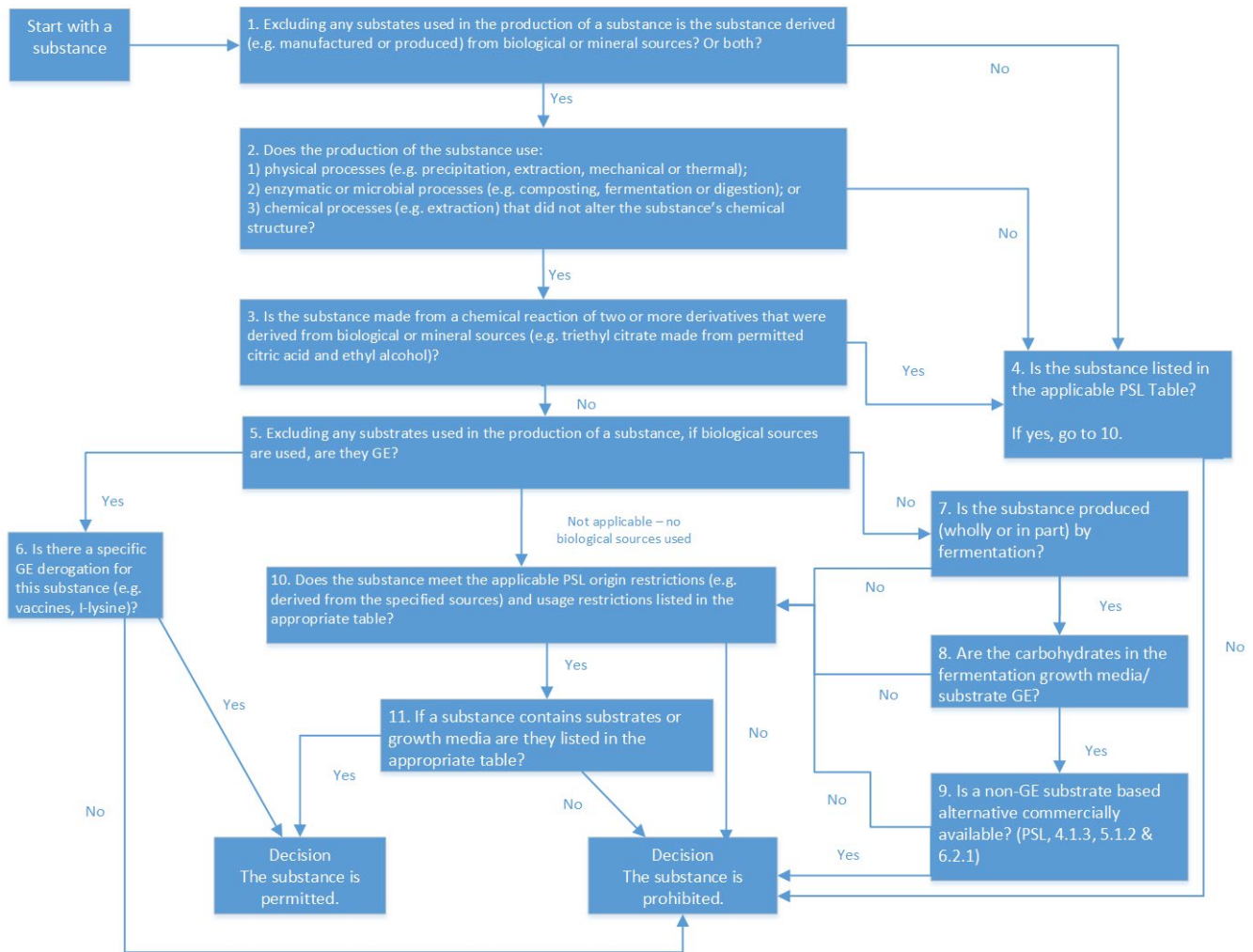
	Cleaning and sanitation substances (Tables 7.3 and 7.4 of CAN/CGSB-32.311)	Facility management substances (Tables 8.2 and 8.3 of CAN/CGSB-32.311)
A. Necessity	Substances used for cleaning and sanitizing organic products and organic product contact surfaces shall be necessary and appropriate for the intended use.	Substances used for pest control or to cause a post-harvest physiological effect shall be necessary and appropriate for the intended use.
B. Origin and mode of production	1. Shall be organic or derived from mineral or biological sources whenever possible. 2. If preferred forms, as described in B1, of these substances do not exist, alternative substances may be considered for inclusion.	
C. Impact	Substance reviews shall consider: 1. The impact of a substance's manufacture and disposal after use on the environment including impacts on ecology, surface and ground water, and soil and air quality including substance persistence, degradation and concentration effects. 2. The impact of a substance's use or potential misuse on soil quality (including biological diversity and activity, structure, salinity, sodicity, erodibility and tilth), surface and ground water quality, ecosystems (in particular non-target organisms) including wildlife and wildlife habitat, and animal and human health.	

Annex A (informative) Categorization of organic products

Table A.1 – Categorization of organic products based on their percentage of organic ingredients (excludes livestock feed and seed products)

Summary	Categories		
	95% ^a (or more)	70-<95% ^b (or more)	<70% ^c
May not contain an ingredient in both its organic and non-organic form.	✓	✓	n/a
May contain up to 5% non-organic ingredients if the organic form is not commercially available.	✓	n/a	n/a
May contain up to 30% non-organic ingredients.	n/a	✓	n/a
May contain less than 70% organic ingredients.	n/a	n/a	✓
Non-organic ingredients both “classified as food additives” and “not classified as food additives” shall be listed in Tables 6.3 and 6.4 of CAN/CGSB-32.311, meet the specified annotations and comply with 6.2 of CAN/CGSB-32.311.	✓	✓	n/a
Whether listed or not in Tables 6.3 and 6.4 of CAN/CGSB-32.311, agricultural, non-organic ingredients shall meet 1.4 a), c) and d), and 6.2 of CAN/CGSB-32.311.	✓	✓	n/a
Non-listed agricultural, non-organic ingredients are subject to commercial availability requirements.	✓	n/a	n/a
Non-organic processing aids of agricultural origin are permitted, subject to the requirements of 1.4 a), b), c), and d); and any annotations listed in Table 6.5 of CAN/CGSB-32.311.	✓	✓	n/a
Non-agricultural processing aids are permitted if they are listed in Table 6.5 (processing aids) of CAN/CGSB-32.311.	✓	✓	n/a
^a Products compliant with 9.2.1 may be identified as organic. ^b Products compliant with 9.2.2 may only declare the percentage of organic ingredients. ^c Products with less than 70% organic content may identify which ingredients are organic in their ingredient list. For full labelling requirements refer to current regulations.			

Annex B
(informative)
Permitted Substances Decision Tree



See clause 3 for definitions of “carbohydrate”, “derived from biological or mineral sources” and “fermentation” in Clause 3 Definitions.

Annex C **(informative)** **Notes on Organic Principles**

The Introduction indicates the General Principles of Organic Production. These are from IFOAM Organics International (www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic).

Historical organic principles

The principles listed below were the original principles published in 2006. Though they have been updated in the introduction of this standard, they have been retained in this annex to provide context for existing organic plans.

Organic production is based on principles that support healthy practices. These principles aim to increase the quality and the durability of the environment through specific management and production methods. They also focus on ensuring the humane treatment of animals.

The general principles of organic production include the following:

1. Protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health.
2. Maintain long-term soil fertility by optimizing conditions for biological activity within the soil.
3. Maintain biological diversity within the system.
4. Recycle materials and resources to the greatest extent possible within the operation.
5. Provide attentive care that promotes the health and meets the behavioural needs of livestock.
6. Prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production.
7. Rely on renewable resources in locally organized agriculture systems.

Fairness

IFOAM Organics International describes fairness as:

“Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings.

This principle emphasizes that those involved in Organic Agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties – farmers, workers, processors, distributors, traders and consumers. Organic Agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products.

This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being.

Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.

Annex D¹
(informative)
Minimum Processes

The following processes are categorized as creating minimal physical, chemical, or biological changes as outlined in the agricultural ingredient/product definition (Clause 3).

Chemical alterations are prohibited except if done with permitted substances listed in Tables 6.3 to 6.5 in CAN/CGSB 32.311.

Aeration	Forming
Ageing	Grating
Agglomeration	Grinding
Blending	Heating (including baking, blanching, boiling, canning, cooking, frying, microwaving, pasteurizing, sterilizing, parboiling, roasting)
Centrifugation	Homogenization
Chilling (including refrigerating and freezing)	Maturation
Chopping	Melting, thawing
Churning	Milling
Concentration	Mixing, blending
Cutting	Packaging, canning
Curing	Peeling
Deboning (manual)	Pressing
Defatting	Puffing
Degerming	Reconstitution
Dissolving	Ripening
Drying, dehydration, desiccation, evaporation, freeze drying	Separating (including screening, clarifying, centrifugation, decanting, extraction, filtering, shelling, trimming)
Emulsifying	Shredding
Extrusion	Smoking
Filtering and clarifying	Soaking
Fining, finishing	Treatment with inert gases (nitrogen pack)
Flaking	
Flocculation	

¹This list was developed from the Canadian Food Inspection Agency's "Annex 1 - Minimum processes" contained in their "Method of production claims on food labels." information.

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CAN/CGSB-32.311-2026

Supersedes CAN/CGSB-32.311-2020,
Corrigendum No. 1



Organic production systems Permitted Substances Lists

Developed by the Canadian General Standards Board



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CAN/CGSB-32.311-2026

Preface

This National Standard of Canada, CAN/CGSB-32.311-2026, supersedes the 2020 edition and its 2021 Corrigendum. The following changes have been made.

Changes since the previous edition

- Additions, deletions or changes in all tables and Annex A

The following definitions apply in understanding how to implement this National Standard of Canada:

- “shall” indicates a **requirement**;
- “should” indicates a **recommendation**;
- “may” is used to indicate that something is **permitted**;
- “can” is used to indicate that something is **possible**, for example, that an organization is able to do something.

Notes accompanying clauses do not include requirements or alternative requirements. The purpose of a note accompanying a clause is to separate explanatory or informative material from the text. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

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Introduction

Organic operations in Canada remain subject to all applicable laws and regulations. Substances that appear in CAN/CGSB-32.311, Organic production systems — Permitted substances lists, are subject to the Pest Control Products Act (PCPA) or the Food and Drugs Act (FDA) when used in Canada as pesticides or disinfectants. Health Canada's Pest Management Regulatory Agency (PMRA) is the federal authority responsible for the regulation of pest control products (including sanitizers) under the PCPA Regulations. Disinfectants are regulated by Health Canada's Therapeutic Products Directorate (TPD) under the FDA Regulations.

Substances that appear in CAN/CGSB-32.311, Organic production systems — Permitted substances lists, are subject to the FDA when used in Canada as veterinary drugs destined to food producing animals and to the Feeds Act (FA) when used in Canada as livestock feed. Health Canada's Veterinary Drugs Directorate is the federal authority responsible for the regulation of veterinary drugs under the FDA Regulations. Livestock feeds are regulated by the Animal Feed Division of the Canadian Food Inspection Agency under the FA Regulations and the Health of Animals Act.

This standard, in conjunction with CAN/CGSB-32.310, is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification process assesses operational compliance. Certification is granted to compliant product.

Annex A provides a list of permitted substances in alphabetical order.

Notes and examples in this standard

In this standard, notes and examples are used for giving additional information intended to assist the understanding or use of the document and are not a normative part of the standard.

Organic production systems Permitted Substances Lists

1. Scope

This National Standard of Canada¹ provides additional information to CAN/CGSB-32.310, Organic production systems — General principles and management standards, in the form of permitted substances to be used as annotated in accordance with the scope of the table in which they are listed. Use of a listed substance in a manner inconsistent with the scope of the table in which it appears is not permitted, except as specified in a listed substance annotation.

Units of Measure

Quantities and dimensions in this standard are given in metric units with yard/pound equivalents, mostly obtained through soft conversion, given in parentheses. The metric units shall be regarded as official in the event of dispute or unforeseen difficulty arising from the conversion.

2. Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below.

Note: The addresses provided below were valid at the date of publication of this standard.

An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.

2.1 Canadian General Standards Board (CGSB)

CAN/CGSB-32.310 — *Organic production systems — General principles and management standards*.

2.1.1 Source

The above may be obtained from the Canadian General Standards Board, Sales Centre, Ottawa ON Canada K1A 0S5. Telephone: 1-800-665-2472. E-mail: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site: www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html.

2.2 Canadian Council of Ministers of the Environment (CCME)

Guidelines for compost quality.

2.2.1 Source

The above may be obtained from the Canadian Council of Ministers of the Environment, 123 Main Street, Suite 360, Winnipeg, Manitoba R3C 1A3. Telephone: 204-948-2090. Fax: 204-948-2125. E-mail: info@ccme.ca. Web site: <http://www.ccme.ca>.

¹ References throughout this document to “this National Standard of Canada” or “this standard” refer to CAN/CGSB-32.311, Organic Production Systems — Permitted Substances Lists.

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2.3 Biodynamic Federation Demeter International

International Demeter Biodynamic Standards.

2.3.1 Source

The above may be obtained from the Biodynamic Federation Demeter International. Web site at: https://demeter.net/wp-content/uploads/2024/10/2025_Int_Dem_bio_Standard_eng.pdf

2.4. Pest Management Regulatory Agency (PMRA)

PMRA list of formulators.

2.4.1 Source

The above may be obtained from the PMRA Web site (<https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management.html>), at <https://open.canada.ca/data/en/dataset/ededff77-a021-48d6-89a5-cdbcd75fb4ff>.

2.5 Ministère du développement durable, de l'environnement et de la lutte contre les changements climatiques (MELCC)

Guidelines for the Beneficial Use of Fertilizing Residuals

2.5.1 Source

The above can be obtained from the MELCC Website, at http://www.environnement.gouv.qc.ca/matieres/mat_res/fertilisantes/critere/guide-mrf.pdf (only available in French).

2.6 Organisation for Economic Co-operation and Development (OECD)

OECD Guidelines for the Testing of Chemicals, Section 3: Environmental fate and behaviour

2.6.1 Source

The above may be obtained from the OECD Web site at <https://www.oecd-ilibrary.org/>.

2.7 Environment and Climate Change Canada (ECCC)

Toxic Substances List: Canadian Environmental Protection Act, 1999

2.7.1 Source

The above may be obtained from the ECCC Web site at <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/substances-list.html>

3 Requirements for adding or amending substances in the lists

Clause 10 of CAN/CGSB-32.310 outlines the requirements for adding or amending listed substances.

4 Permitted substances lists for crop production

4.1 Classification

4.1.1 Crop production substances are classified according to the following uses and applications:

- a) Soil amendments and crop nutrition in Table 4.2 (Column 1) are substances applied to the soil to improve fertility, tilth and soil biodiversity. Fertilizers, plant foods and soil amendments are primarily used for their plant nutrient content and may be applied to the soil or to plant foliage. Soil building practices and nutrient usage shall comply with section 5.4 of CAN/CGSB-32.310.
- b) Crop production aids and materials in Table 4.2 (Column 2) may be directly applied to the crop or soil, or used to control pests (including diseases, weeds and insects) when organic management practices alone cannot prevent or control pests as specified in section 5.6.2 of CAN/CGSB-32.310. Examples include: adjuvants, insect traps and plastic mulch, vertebrate animal pest management substances, plant disease and insect pest management substances.

4.1.2 Use of a listed substance in a manner inconsistent with the scope of the table in which it appears is not permitted, except as specified in substance annotations.

4.1.3 Substances listed in Table 4.2 shall comply with prohibitions in clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and gibberellic acid):

- a) if the substance includes the substrates or growth media, the ingredients of the substrates or growth media shall be listed in Table 4.2;
- b) if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Acetic acid	Sources other than petrochemicals can be used. As an adjuvant, a pH regulator and for controlling pests (including weeds) and cleaning seeds.		•
Adhesives for sticky traps and barriers			•
Agar	For use in initial mushroom spawn production.	•	
Alfalfa meal and pellets	Shall be organic if commercially available.	•	
Algae and algal products	See Table 4.2 Aquatic plant extracts and Plant material.	•	•
Ammonium carbonate	As an attractant in insect traps.		•
Animal manure, dried	Dried manure may be pelleted or granulated. a) The operator shall be able to demonstrate that best practices known to eliminate human pathogens have been used in the production process; or b) demonstrate that the product meets criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in Guidelines for Compost Quality; or c) follow the application restrictions in section 5.5.2.5 of CAN/CGSB-32.310. See also Compost and Digestate, anaerobic, for microbially treated manure.	•	
Animal manure, unprocessed	Includes solid manure (manure mixed with bedding), liquid manure and slurry. Manure sources shall comply with the requirements specified in 5.4.2 b) 3) and 5.5.1 of CAN/CGSB-32.310. Usage shall comply with 5.5.2.5. Concentrated nutrient extracts, such as those produced by distillation, are not considered to be animal manure.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Aquatic plant extracts	Aquatic plant extracts may be produced using the following substances in order of preference: a) substances listed in Table 4.2 (Column 1 or 2) with the exception of Formulants used in Crop Production Aids; b) potassium hydroxide provided that the amount of solvent used does not exceed the amount necessary for extraction. The operator shall provide an affidavit from the manufacturer that proves the need to use potassium hydroxide; c) potassium sorbate; and d) sodium benzoate Aquatic plant extracts shall not contain more than: a) 1.5% total nitrogen (dry basis); b) 0.5% P₂O₅ (dry basis); and c) 20% K₂O (dry basis). Ammonium nitrogen shall not exceed 20% of total nitrogen. Nitrate-nitrogen shall not exceed 20% of total nitrogen (dry basis). Nitrogen compounds may not be added during the extraction process. See Table 4.2 Plant material for use of unprocessed aquatic plants.	•	•
Ascorbic acid (vitamin C)			•
Ash	Ash shall be from plant and animal sources. Ash from burning manure or from burning minerals, coloured paper, plastics or other non-biological substances is prohibited. Ash containing materials that cannot be verified or containing prohibited substances shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in <i>Guidelines for the Beneficial Use of Fertilizing Residuals</i>. Shall not cause a build-up of heavy metals or micronutrients in soil.	•	•
Baits for rodent traps	May contain food or substances listed in Table 8.2.		•
Bentonite	See Table 4.2 Mined minerals, unprocessed and Clay.	•	•

Table 4.2 – Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Biochar	Produced through pyrolysis of forestry by-products which have not been treated or combined with prohibited substances. Recycled biochar from contaminated remediation sites is prohibited.	•	
Biodegradable plant containers	Biodegradable planting containers (for example, biobased pots or cell packs and paper chain pots) may be left to decompose in the field if all ingredients, including adhesives, are listed in Table 4.2 (Column 1). Paper-based plant containers may contain incidental formulants included in PMRA lists 4A and 4B. See definition of “Biodegradable”.		•
Biodynamic preparations for compost, soil and plants	As described in the international <i>Demeter Biodynamic Production Standards</i> .	•	•
Blood meal	Shall be sterilized.	•	
Bone meal	Shall be guaranteed free of Specified Risk Material (SRM).	•	
Borate (boric acid)	Mined sources of sodium tetraborate and octaborate are permitted as wood preservatives. Permitted for structural pest control (example: for ants). Direct contact with organic food or crops is prohibited in the case of products formulated as pesticides.		•
Boron	Borates including hydrated borates of sodium (octaborate, pentaborate, tetraborate, borax), boric acid, and boron-lignosulphonate complexes (except those containing ammonium lignosulphonate) are permitted when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Ammonium borates, boron-amino acid and boron potassium nitrate mixes (BKNO ₃) are not permitted.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Botanical pesticides	Botanical pesticides shall be used in conjunction with a biorational pest management program. They shall not be the primary method of pest control. The least toxic botanicals shall be used in the least ecologically disruptive way possible. All label restrictions and directions shall be followed, including restrictions concerning crops, livestock, target pests, safety precautions, pre-harvest intervals and worker re-entry.		•
Brewers' grains and solubles	A by-product or by-products from the production of alcohol by fermenting grain. Shall be from non-GE grain. Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis). Nitrogen compounds, beyond what is needed for yeast nutrition, may not be added during the fermentation process and they may not be added post fermentation.	•	
Calcium	Calcium carbonate (calcitic limestone), calcium magnesium carbonate (dolomitic limestone), calcium silicate, and calcium sulphate (gypsum), all from mined sources. Other biological or mineral sources, such as shells from aquatic animals (for example, oyster shell flour), aragonite, eggshell meal and lime from sugar processing. Calcium chloride derived from naturally occurring brines. May be chelated with substances listed under Table 4.2 Chelates. Prohibited forms include slaked limestone (calcium hydroxide); quicklime (calcium oxide); calcium sulphate produced using sulphuric acid and calcium products that have been used in controlled atmosphere storage. See Table 4.2 Calcium sulphate (gypsum) for additional restrictions on this substance.	•	
Calcium lignin sulphonate	See Table 4.2 Lignin and lignin sulphonates (lignosulphonates)	•	•
Calcium polysulphide	See Table 4.2 Lime sulphur.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Calcium sulphate (gypsum)	Mined sources are allowed; calcium sulphate produced using sulphuric acid is prohibited. To correct calcium and sulphur deficiencies and soil salinity problems.	•	
Cannery wastes	Shall be from organic sources. Non-organic cannery wastes shall be composted. See Table 4.2 Compost feedstocks.	•	
Carbon dioxide (CO ₂)	For soil and greenhouse use, for controlled atmosphere storage, and for storage pest control.		•
Cardboard	Cardboard shall not be waxed or impregnated with fungicide or prohibited substances. For use as mulch, as composting feedstock or as pest trapping material. See Table 4.2 Compost feedstocks.	•	•
Chelates	The following acids may be used to chelate metallic or metalloid nutrient elements listed in Table 4.2: Acetic (including vinegar), Ascorbic, Citric, Humic, Fulvic and Lignosulphonic.	•	•
Chitosan	Including chitosan hydrochloride and chitosan oligosaccharides (COS).	•	•
Cholecalciferol (vitamin D ₃)	Permitted if used outdoors and inside greenhouses for rodent control when methods described in 5.6.1 of CAN/CGSB-32.310 have failed. Prohibited inside on-farm food processing and food storage facilities.		•
Citric acid			•
Clay	Bentonite, perlite and kaolin as soil amendments, as seed pellet additives or for pest control. See Table 4.2 Mined minerals, unprocessed; Bentonite; Kaolin clay.	•	•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Cobalt	Sulphates, carbonates, oxides and chlorides of cobalt are permitted when soil deficiencies are documented by testing soil or plant tissue, or when the needs of soil microorganisms or livestock can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates and amino acid chelates are not permitted. Shall be used with caution to prevent excessive cobalt accumulation. Cobalt build-up in soil shall prohibit future use.	•	
Coir (coconut fiber)	Washed, processed and/or buffered (to adjust pH) with substances listed in Table 4.2 (Column 1 or Column 2) excluding Formulants used in crop production aids.		•
Compost	Compost produced on the farm is restricted to compost produced on a certified organic farm. Compost from off-farm sources includes every other source, for example: municipal, residential or industrial sources, or from any organic or non-organic farm. See Table 4.2 Compost from off-farm sources; Compost produced on the farm; Compost tea; and Compost feedstocks. For information on compost starters, see Table 4.2 Microorganisms and microbial products. For information on vermicompost, see Table 4.2 Worm castings.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Compost feedstocks	Acceptable feedstocks include: a) animal manures conforming to criteria specified in 5.5.1 of CAN/CGSB-32.310; b) animals, animal products and by-products (including fishery); c) plants and plant by-products (including forestry and source-separated yard debris, such as grass clippings and leaves), pomaces and cannery wastes; d) soils and minerals that conform to the requirements of this standard and of CAN/CGSB-32.310; e) paper yard waste bags which contain coloured ink; and f) anaerobic digestate that conforms to the requirements of this standard. Substances listed in Table 4.2 (Column 1) are permitted in compost feedstocks when they meet the annotations therein. When evidence indicates that compost feedstocks could contain a substance or substances prohibited by Clauses 1.4 or 1.5 of CAN/CGSB-32.310 that is known to be potentially persistent in compost, before using the compost, compost test results shall be provided indicating no presence of the prohibited substance or a reference to scientific literature that establishes that the specific potential contaminant(s) will degrade during the composting process. The following composting feedstocks are prohibited: sewage sludge; compost starter and feedstocks fortified with substances not included in this standard; leather by-products; glossy paper; waxed cardboard; paper containing coloured ink other than paper yard waste bags; and animals, animal products and animal by-products not guaranteed free of Specified Risk Material (SRM).	•	
Compost from off-farm sources	Compost obtained from off-farm sources shall conform to the criteria specified in Table 4.2 Compost feedstocks. If compost is obtained from another farm, feedstock sources shall be documented. Compost obtained from all other sources shall comply to the following: a) shall not exceed the maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>; b) shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>; and c) shall not cause heavy metal buildup in soil.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Compost produced on the farm	Compost produced on the farm shall conform to the criteria specified in Table 4.2 Compost feedstocks. In addition, if made from animal manures or other likely sources of human pathogens, compost produced on the farm shall: a) reach a temperature of 55 °C (130 °F) for a period of four consecutive days or more. The compost piles shall be mixed or managed to ensure that all of the feedstock heats up to the required temperature for the minimum time; or b) meet limits for acceptable levels (Most Probable Number of total solids per gram [MPN/g total solids]) of human pathogens specified in <i>Guidelines for Compost Quality</i>; or c) be considered as aged or raw manure rather than compost, that is, meeting requirements specified in subclause 5.5.2.5 of CAN/CGSB-32.310.	•	
Compost tea	Compost tea shall be made from composts that conform to criteria specified in Table 4.2 Compost produced on the farm; Compost from off-farm sources; or Worm castings. Additional ingredients shall be listed in Table 4.2 (Column 1). If compost tea is applied directly to the edible parts of plants, the operator shall be able to demonstrate that best practices known to eliminate pathogens during the processing have been used OR that the requirements for raw manure, as specified in subclauses 5.5.2.5 of CAN/CGSB-32.310, have been met. See the Compost tea definition in clause 3 of CAN/CGSB-32.310.	•	•
Condensed molasses fermentation solubles (Vinasse)	A by-product from the fermentation of cane, beet or agave sugar and/or their respective molasses. Shall be from non-GE feedstock. Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis). Additional Nitrogen compounds may not be added post fermentation.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Copper (plant nutrition)	Sulphates, carbonates, oxides and oxysulphates of copper may be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates, chlorides, amino acid chelates, and ammonia-copper complexes are not permitted. Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build-up in soil shall prohibit future use. No residues of copper products shall be visible on harvested products.	•	
Copper (production aid)	Copper sulphate, copper hydroxide, copper octanoate, Bordeaux mix, copper oxychloride and copper oxide. Permitted for use as a wood preservative, or for controlling pests, including diseases. Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build-up in soil shall prohibit future use. No residues of copper products shall be visible on harvested products.		•
Diatomaceous earth	Non-calcined forms. May contain substances listed in Table 4.2 (Column 2).		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Digestate, anaerobic	Permitted to be used for soil amendment, provided that the following conditions are met: a) the materials added to the digester shall be listed in Table 4.2 (Column 1) or permitted as Compost feedstocks; b) nutrients, vitamins and trace minerals other than nitrogen and phosphorus may be supplemented (in amounts needed for optimal metabolic performance of the digester) without restriction; c) shall not exceed maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg), and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>; and d) shall meet the criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i> or the criteria for the application of raw manure on land specified in subclause 5.5.2 of CAN/CGSB-32.310 shall be met. When digestate feedstocks could contain a substance or substances prohibited by Clauses 1.4 or 1.5 of CAN/CGSB-32.310 that is potentially persistent, before using the anaerobic digestate, test results shall be provided indicating no presence of the prohibited substance or a reference to scientific literature that establishes that the specific potential contaminant(s) will degrade during the digestion process. It is permitted to use anaerobic digestate as a compost feedstock if it is added to other substances which are then composted. See Table 4.2 Compost feedstocks.	•	
Distillers' grains and solubles	A by-product or by-products from the production of alcohol by fermenting grain. Shall be from non-GE grain. Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis). Nitrogen compounds, beyond what is needed for yeast nutrition, may not be added during the fermentation process and they may not be added post fermentation.	•	
Dormant oils	For use as a dormant spray on woody plants. Shall not be used as a dust suppressant.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Dust suppressants	Vegetable oils, organic molasses or substances listed in Table 4.2 (Column 1 or 2) are permitted, for example: Lignin and lignin sulphonates (lignosulphonates), excluding Formulants used in crop production aids. Petroleum products are prohibited.	•	•
Enzymes	Originating from plants, animals or microorganisms.	•	•
Extractants	The following may be used as extractants: a) water; b) culinary steam, as described in subclause 8.1.2 b) of CAN/CGSB-32.310; c) fats and oils, such as cocoa butter, vegetable oils, lanolin and animal fats, and alcohols other than isopropyl alcohol; d) supercritical CO ₂ ; and e) substances listed in Table 4.2 (Column 1 or 2) except for Formulants used in crop production aids.	•	•
Feather meal		•	
Ferric phosphate (iron ortho-phosphate, iron phosphate)	Permitted as a molluscicide (for slug and snail control). Shall be used in such a manner that runoff into water bodies is prevented. Contact with crops is prohibited.		•
Fibre row covers	Shall not be incorporated into the soil or left in the field to decompose; shall be removed at the end of the growing season.		•
Fish products	The following fish products are permitted: fish meal; fish powder; fish farm wastes and hydrolysate, emulsions and solubles. Fish farm wastes shall be composted. Only substances listed in Column 1 or 2 of Table 4.2 can be added to fish products with the exception that the addition of Formulants used in crop production aids is prohibited. Chemical treatment is prohibited, with the exception of the following substances which are in preferential order: a) vinegar; b) citric acid; c) phosphoric acid; or d) sulphuric acid. The amount of acid used shall not exceed the minimum needed to stabilize the product.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Formulants used in soil amendments	Shall be derived from biological or mineral sources unless a substance annotation permits the use of a specified formulant. Substances listed elsewhere in Table 4.2 (Column 1) and used as formulants in soil amendments are subject to the annotations therein.	•	
Formulants used in crop production aids	Formulants used in crop production aids may only be used with substances listed in Column 2 of this table. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or derived from biological or mineral sources may be used with substances in Table 4.2 (Column 2). Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to Clauses 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.		•
Frass	A by-product of insect farming. Shall be from an organic source if commercially available.	•	
Growth regulators for plants	Plant hormones, such as gibberellic acid, indoleacetic acid and cytokinins, made from terrestrial or aquatic plants or produced by microorganisms.		•
Homeopathic preparations			•
Hormones	See Table 4.2 Growth regulators for plants.		•
Humates, humic acid and fulvic acid	Permitted if mined; produced through microbial activity; extracted by physical processes; or with: a) Table 4.2 Extractants; or b) potassium hydroxide—potassium hydroxide levels used in the extraction process shall not exceed the amount required for extraction. Levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury shall not exceed the limits (category C1) specified in <i>Guidelines for the Beneficial Use of Fertilising Residuals</i>. Shall not cause a build-up of heavy metals or micronutrients in soil.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Hydrated lime (calcium hydroxide)	For plant disease control.		•
Hydrogen peroxide			•
Hydrolyzed proteins of plant origin	Resulting from enzymatic hydrolysis (in conjunction with physical processes). Shall not contain more than 0.3% hydroxyproline (as a percentage of total amino acids). Shall not contain more than 15% N (dry basis). At least 90% of the total nitrogen shall be organic (protein) nitrogen. Isolated amino acids such as glycine, lysine and methionine are prohibited. Nitrogen compounds may not be added during hydrolysis.	•	
Hydrolyzed proteins of animal origin	Resulting from enzymatic hydrolysis (in conjunction with physical processes). Shall not be applied to the edible portion of crops. Shall not contain more than 17% N (dry basis). At least 90% of the total nitrogen shall be organic (protein) nitrogen. Isolated amino acids such as glycine, lysine and methionine are prohibited. Nitrogen compounds may not be added during hydrolysis.	•	
Inoculants	See Table 4.2 Microorganisms and microbial products.	•	
Invertebrates	Worms, insects (including sterile insects), nematodes, arthropods and other invertebrates. See Table 4.2 Worm castings; Shells from aquatic animals.	•	•
Iron	Sulphates, carbonates, chlorides, oxides, oxysulphates, citrates, tartrates or permitted chelates of iron may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Iron chloride may be used to prevent loss of phosphorus in soils prone to flooding without demonstrating a soil deficiency. Nitrates, amino acid chelates, and ammonia-iron complexes are not permitted.	•	
Kaolin clay	May be calcined. Shall not be processed or fortified with substances unless listed in Table 4.2 (Column 2).		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Kelp and kelp products	See Table 4.2 Aquatic plant extracts and Plant Material.	•	•
Leaf mould		•	
Lignin and lignin sulphonates (ligno-sulphonates)	Permitted as a formulant ingredient(s), such as a chelating agent(s), binding agent(s), and as a dust suppressant(s). Ammonium lignosulphonate is prohibited. Other lignin forms, such as lignosulphonic acid, calcium lignosulphonate, magnesium lignosulphonate, sodium lignin and sodium lignosulphonate, are permitted.	•	•
Lime sulphur (calcium polysulphide)	Permitted on plants as: a) a fungicide; b) an insecticide; and c) c) an acaricide (mite control).		•
Limestone	Mined magnesium and calcium carbonates. See Table 4.2 Calcium.	•	
Magnesium	The following sources are permitted: a) mined magnesium rock; b) magnesium chloride derived from natural brines; c) mined calcium magnesium carbonate (dolomitic limestone) that has not been slaked; d) potassium magnesium sulphate (langbeinite); e) e) magnesium sulphate (kieserite or Epsom salts) may be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil or plant tissue, or when the need for a preventative application is documented.	•	
Manganese	Sulphates, oxides, oxysulphates, carbonates, chlorides, citrates, tartrates or permitted chelates of manganese may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates, amino acid chelates, and ammonia-manganese complexes are not permitted.	•	
Meat meal	Shall be processed by drying or heat sterilization or composted.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Microbial extracts	Extracts of microorganisms (viruses, bacteria, protozoa, phages, and fungi), such as spinosad. Products may contain dead microorganisms and substances in Table 4.2 (Column 1 or 2). If the growth substrate includes substances not listed in Table 4.2 column 1, the growth substances (substrate) shall not be present in the final product, or be present at levels which have no material functional effect. Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2 Column 1. Pharmaceuticals made from biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides. Does not include nutrient extracts such as nitrogen extracted from microorganisms. See Table 4.2 Microorganisms and microbial products and Microbial fertilizers.		•
Microbial fertilizers	Microbial biomass that is the by-product of food processing. Examples include bacterial biomass and yeast press cake. If the growth substrate includes substances not listed in Table 4.2 (Column 1), the growth substances (substrate) shall not be present in the final product, or be present at levels that have no material functional effect. Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2 (Column 1). Shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in Guidelines for the Beneficial Use of Fertilizing Residuals. Shall not cause a build-up of heavy metals or micronutrients in the soil. Does not include substances extracted from microorganisms or produced by fermentation. See Table 4.2 Microbial extracts and Microorganisms and microbial products.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Microorganisms and microbial products	Living microorganisms, such as viruses, bacteria, protozoa, phages, and fungi. Microbial products may contain substances in Table 4.2 (Column 1 or 2). Examples include: rhizobium bacteria; mycorrhizal fungi; yeast; <i>Bacillus thuringiensis</i>; virus and viruses sprays (e.g., granulosis). If the growth substrate includes substances not listed in Table 4.2, the growth substances (substrate) shall not be present in the final product, or be at levels which have no material functional effect. Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2. Ionizing radiation is permitted for use on a peat moss carrier before the addition of microbial inoculants. Radiation is otherwise prohibited. Pharmaceuticals made from biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides. See Table 4.2 Microbial extracts and Microbial fertilizers.	•	•
Milk and milk by-products		•	•
Mined minerals, unprocessed	Mined minerals include basalt, pumice, sand, feldspar, mica, granite dust and unprocessed rock dust. Minerals extracted from seawater are permitted. To be allowed as a mined mineral, the product shall not have undergone any change in its molecular structure through heating, processing, ion exchange or combining with other substances. Sodium nitrate is prohibited. Rock dust mixed with petroleum products, such as those from stone engraving, is prohibited. See annotations for specific minerals in Table 4.2 (Column 1).	•	
Molasses	Shall be organic.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Molybdenum	Sodium molybdate and molybdenum trioxide may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Ammonium molybdate and amino acid chelates complexes are not permitted.	•	
Mulches	Biological materials from organic sources are permitted (e.g., straw, leaves, grass clippings, hay, wool or untreated burlap). If organic materials are not commercially available, non-organic, non-genetically engineered sources may be used provided that prohibited substances have not been used on these materials for at least 60 days before harvest. Prohibited mulch material includes, but is not limited to, sawdust, wood chips, bark and shavings that is treated or processed with Formulants used in crop production aids or with substances, such as herbicides, preservatives and glues, not listed in Table 4.2 (Column 1 or 2). Newspaper and paper mulch are permitted; glossy paper and coloured ink are prohibited. Plastic mulches: Non-biodegradable and semi-biodegradable materials shall not be incorporated into the soil or left in the field to decompose. Use of polyvinyl chloride as plastic mulch or row cover is prohibited. Biodegradable mulches: 100% of biodegradable mulch films shall be derived from bio-based sources. Formulants or ingredients shall be listed in Table 4.2 (Column 1 or 2). Biodegradable polymers and Carbon Black from GE or petroleum sources are not permitted.	•	•
Mushroom compost	See Table 4.2 Compost.	•	
Ozonated water	Water saturated with ozone gas. For control of microbial pathogens in crops as a foliar application. Neither the ozonated water nor the gas is permitted for weed control or soil fumigation.		•
Nitrogen gas	For controlled atmosphere storage.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Non-ionizing radiation	May be used to manage pest load		•
Oilseed meals	Shall be organic if commercially available.	•	
Oxygen	For controlled atmosphere storage.		•
Peat moss		•	
Peracetic (peroxyacetic) acid	Formulations of peracetic acid may include unreacted residual reagents and catalysts, such as hydrogen peroxide, acetic acid and sulphuric acid. Permitted for: a) pest control; and b) disinfecting and cleaning seeds and plant stock. See Table 7.3.		•
Pheromones and other semiochemicals	All sources are permitted. For pest control.		•
Phosphate rock	May be fortified or processed with substances listed in Table 4.2 (Column 1) with the exception that treatment with acid prior to application is not permitted. Cadmium shall not exceed 90 mg/kg P ₂ O ₅ .	•	
Plant extracts, oils and preparations	Permitted extractants include fats and oils (such as cocoa butter, lanolin and animal fats); alcohols; water; or substances listed on Table 4.2 (Column 2) other than Formulants used in crop production aids. Extraction with other solvents is prohibited except with, in order of preference: a) potassium hydroxide; or b) sodium hydroxide; provided the amount of solvent used does not exceed the amount necessary for extraction. The operator shall provide an affidavit from the manufacturer that proves the need to use sodium hydroxide. For control of pests (e.g., diseases, weeds and insects). Plant oil, such as clove or mint oil is permitted for sprout inhibition in potatoes. See Table 8.3 Botanical oils.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Plant material	Aquatic or terrestrial plant biomass including cover crops, green manures, crop wastes, hay, straw, leaves, peat, forestry by-products, hulls and grain screenings. Does not include plant-based food products or by-products of food processing, fermentation or chemical treatment, such as corn steep liquor or concentrated nutrient extracts. However, certain products may be permitted under separate listings in Table 4.2; see Oilseed meal, Plant extracts, oils and preparations, Molasses, Pomaces, Cannery waste, Lignin and lignin sulphonates, etc. Wastes from crops that have been treated or produced with prohibited substances are permitted as compost feedstocks only (subject to Compost feedstock restrictions). Prohibited plant materials include sawdust, wood chips, bark and shavings that are treated or processed with Formulants used in crop production aids or with substances, such as herbicides, preservatives or glues, that are not listed in Table 4.2 (Column 1 or 2)	•	
Plant protectants	Mineral and biological substances including, but not limited to: calcium carbonate (from chalk, limestone, etc.); diatomaceous earth; kaolin clay; pine oil; pine resin; and yucca. White wash (solution of hydrated limestone) is permitted for use on trees to protect against sunburn and southwest disease. Permitted to protect plants from harsh environmental conditions (such as frost and sunburn), infection, the build-up of dirt on leaf surfaces, or injury by an invertebrate pest or disease.		•
Plastic for row covers and solarization	Non-biodegradable and semi-biodegradable materials shall not be incorporated into the soil or left in the field to decompose. Use of polyvinyl chloride as plastic mulch or row cover is prohibited.		•
Polyoxin D zinc salt			•
Pomaces	Feedstocks shall be from organically grown fruits or vegetables. Non-organic pomaces shall be composted. See Table 4.2 Compost feedstocks.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Potassium	The following potassium sources are permitted: a) mined potassium magnesium sulphate (langbeinite) and mined potassium magnesium chlorides (sylvinite and kainite); b) potassium rock powder—includes basalt, biotite, mica, feldspar, granite, glauconite and greensand; c) potassium chloride—muriate of potash or rock potash. The use of potassium chloride shall not cause salt build-up in soil through repeated application; d) d) potassium sulphate—shall be produced by evaporating brines from seabed deposits or combining mined minerals using ion exchange. Potassium sulphate made using sulphuric acid as a reactant is prohibited.	•	
Potassium bicarbonate	For pest and disease control for crops grown in greenhouses and other structures, and for other crops.		•
Pyrethrum	May be combined with Formulants used in crop production aids. See Table 4.2 Botanical pesticides for restrictions.		•
Quicklime (calcium oxide)	Shall not be used as a fertilizer or as a soil amendment.		•
Repellents	Shall be derived from biological sources, such as sterilized blood meal, rotten eggs, hair or predator scents. May contain substances listed in Table 4.2 Column 2.		•
Salt	Sodium chloride, calcium chloride or potassium chloride; shall be mined or derived from sources of natural brine. The effluent from ion exchange water softener regeneration may be used. For pest control.		•
Seaweed and seaweed products	See Table 4.2 Aquatic plant extracts and Plant material.	•	•
Seed lubricant	Talc and graphite are permitted, and other substances listed in Table 4.2 (columns 1 and 2).		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Seed treatments	Includes microbial products, kelp, yucca, gypsum, clays and botanicals. May contain substances listed in Table 4.2 (Column 1 or 2) or Table 7.3. See Table 4.2 Peracetic Acid; Treated Seeds and refer to subclause 5.3.2 of CAN/CGSB-32.310. Sodium hypochlorite 2.5% solution may be used to disinfect Solanaceae seeds.		•
Selenium	Sodium selenate and sodium selenite may be used when: (1) soil and plant deficiencies are documented by visual symptoms, (2) testing of soil or plant tissue indicates deficiencies, or (3) when the need for a preventative application to maintain plant, animal or human health can be documented.	•	
Shell from aquatic animals	Includes chitin.	•	•
Silicic acids, including potassium and sodium salts of silicic acid	Includes potassium and sodium silicates (and associated hydrates), and silicic acids such as monosilicic acid. May be pH-adjusted with sodium or potassium hydroxide, or with acids listed in Table 4.2. Formulations shall not contain more than 0.1% P ₂ O ₅ (dry basis) and not more than 0.1% N (dry basis). For unprocessed silicon minerals, such as Wollastonite, see Table 4.2 Mined minerals, unprocessed.		•
Soaps	Soaps (including insecticidal soaps) shall consist of fatty acids derived from animal or vegetable oils.		•
Soaps, ammonium	As a large animal repellent. Direct contact with soil or edible portion of crop is prohibited.		•
Sodium bicarbonate	For pest and disease control for crops grown in greenhouses and other structures, and for other crops.		•
Soil	From organic sources. Shall comply with restrictions specified in subclause 5.1.2 of CAN/CGSB-32.310. See definition of Soil in Clause 3 of CAN/CGSB-32.310. For soils used in containers, see Transplant media, potting soil and potting media.	•	
Sphagnum moss	May contain wetting agents that are listed in Table 4.2 Surfactants.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Struvite (magnesium ammonium phosphate)	Obtained through precipitation from one or more of the following: a) liquid animal manure as described in CAN/CGSB-32.311 Table 4.2 (Column 1) Animal Manure, unprocessed, and in subclause 5.5.1 of CAN/CGSB-32.310; b) anaerobic digestate as described in Table 4.2 (Column 1); c) liquid waste from the processing of foods, beverages, pet foods or animal feeds; d) wastes from the processing of ethanol or biodiesel from plant-based agricultural feedstocks; and/or e) municipal wastewater that has undergone advanced treatment processes/systems capable of reducing impurities to levels below those attainable through conventional secondary or biological treatment. The type of wastewater stream and exact location(s) of the wastewater facilities shall be documented. May contain incidental precipitated phosphate salts. Struvite products from non-organic source animal manure (a) and municipal wastewater (e) shall contain: a) a phosphorus content (expressed as P_2O_5) between 25% and 30% (dry matter basis); b) a maximum organic carbon content of 1.5% (dry matter basis); c) a nitrogen content between 4% and 6% (dry matter basis); and d) a magnesium content (expressed as Mg) between 8% and 11% (dry matter basis) Derivatives from struvite are prohibited. Shall not exceed the maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>. Shall not cause a build-up of heavy metals or micronutrients in soil. Shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
	Struvite from municipal wastewater (e): a) shall not exceed total aluminium 0.1% (dry matter basis); b) shall not exceed total iron 1% (dry matter basis); and c) shall have no more than 6 mg/kg of any substance classified as a PAH (polycyclic aromatic hydrocarbon) as defined in the <i>Toxic Substances List</i> (schedule 1) of the <i>Canadian Environmental Protection Act</i> (1999). For the evaluation of aluminium, iron and PAHs, struvite shall be measured using vacuum drying at 40°C until a constant weight to avoid the loss of crystal-bound water.		
Sugars	Organic sugars (e.g., sucrose, glucose, fructose) are permitted.	•	•
Sulphur smoke bombs	Use of sulphur smoke bombs shall be permitted in conjunction with other methods used for rodent control when a full pest control program is maintained but temporarily overwhelmed.		•
Sulphur, elemental	Both mined and reclaimed sources of elemental sulphur are permitted.	•	•
Summer oils	On foliage, as suffocating or stylet oils.		•
Surfactants	Includes plant-derived saponins, such as <i>Yucca schidigera</i> and <i>Quillaja saponaria</i> , or substances listed in Table 4.2 Formulants used in soil amendments; Formulants used in crop production aids; Soaps.	•	•
Transplant media, potting soil and potting media	Shall be composed entirely of permitted substances listed in Table 4.2 (Column 1 or 2). Soil from the field may be used provided that prohibited substances have not been used on the soil for at least 36 months.	•	
Treated seed	See Table 4.2 Peracetic acid; Seed treatments and refer to section 5.3.5 of CAN/CGSB-32.310.		•
Tree seals	Plant or milk-based paints are permitted. May only be combined with substances listed in Table 4.2 (Column 1 or 2). See Table 4.2 Plant Protectants. For planting stock: commercial grafting materials are permitted, provided that plants are maintained in accordance with requirements of CAN/CGSB-32.310 for at least 12 months prior to harvest of organic products.		•

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Vermicasts	See Table 4.2 Worm castings.	•	
Vermiculite		•	
Vinegar (acetic acid)	See Table 4.2 Acetic acid.		•
Vitamins	Biological and mineral sources of all vitamins are permitted. Non-biological and non-mineral sources of vitamins B ₁ , C (ascorbic acid) and E are permitted.	•	•
Water		•	•
Water, recycled	Recycled water shall only contain substances listed in Tables 4.2 (Column 1 or 2), 7.3 and 7.4. Recycled wash water from all organic operations, including dairy operations, may be spread on crop lands. Requirements for land application, as specified in subclause 5.5.2.5 of CAN/CGSB-32.310, shall be met. In all other uses, recycled water shall meet applicable irrigation water regulatory requirements. Wastewater from sewage or industrial treatment plants are not permitted.	•	•
Wetting agents	See Table 4.2 Surfactants.	•	•
Wood ash	See Table 4.2 Ash.	•	•
Worm castings	Worm castings (also called vermicompost, worm compost, vermicasts, worm humus or worm manure) are the end product of the breakdown of organic matter and compounds by some earthworm species. Feedstocks for earthworms shall meet the criteria in Table 4.2 Compost feedstocks. The operator shall be able to demonstrate that: a) worm castings produced either on the farm or obtained from off-farm sources meet the limits for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>; or b) best practices known to eliminate human pathogens during vermicomposting have been used. See Table 4.2 Microorganisms and microbial products for information on compost starters.	•	

Table 4.2 — Substances for crop production			
Substance name(s)	Origin and usage	Column 1 Soil amendments	Column 2 Production aids
Yeast	See Table 4.2 Microorganisms and microbial products.	•	
Zinc	Sulphates, oxides, oxysulphates, carbonates, chlorides, citrates, lignosulphonates or permitted chelates of zinc may be used only when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented. May be chelated with substances listed under Table 4.2 Chelates. Nitrates, amino acid chelates, ammonia-manganese complexes and polyphosphates are not permitted.	•	

5 Permitted substances lists for livestock production

5.1 Classification

5.1.1 Livestock production substances are classified according to the following uses and applications:

- a) Feed, feed additives and feed supplements;
- b) Health care products and production aids — Health care products include medications, remedies, parasiticides and other substances used to maintain or restore the well-being of an animal. Production aids include all other substances used on animals and their living areas, such as bedding, teat seals and teat dips.

5.1.2 Substances listed in Tables 5.2 and 5.3 shall comply with prohibitions in Clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and lactic acid):

- a) if the substance includes the substrate or growth media, the substrate or growth media ingredients shall be listed in Table 5.2 or 5.3;
- b) if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.

Note: In Canada, livestock feed shall meet the compositional and labelling standards of the *Feeds Regulations, 2024*. Ingredients used in livestock feed must be approved and listed in the Canadian Feed Ingredients Table of the *Feeds Regulations, 2024*. Some ingredients and products require registration (such as enzymes and chelate minerals).

Table 5.2 – Feed, feed additives and feed supplements	
Substance name(s)	Origin and usage
Amino acids	As an exception to subclause 5.1.2 (CAN/CGSB-32.311) and Clause 1.4 a) of CAN/CGSB-32.310, isolated amino acids may be used when organic protein feeds and non-organic feed additives that are listed in Table 5.2 cannot meet amino acid requirements to produce a balanced feed as per subclauses 6.4.1 and 6.4.2 of CAN/CGSB-32.310.
Antioxidants	Derived from materials produced by living organisms (such as, but not limited to, plants, animals and microorganisms) using substances listed in Table 6.3 Extraction solvents and precipitation aids. Example: tocopherols derived from plants.
Colouring agents	From biological sources.
Diatomaceous earth	As a preventative livestock health care practice for control of internal parasites, and as an anti-caking agent. Shall be food grade (non-calcined). As free choice, or up to 2% of total diet, or as an anti-caking agent in feed ration.
Energy feeds and forage concentrates (grains) and roughages (hay, silage, fodder, straw)	Shall be obtained from organic sources. May include silage preservation products. See Table 5.2 Hay or silage preservation products.
Enzymes	Originating from plants, animals or microorganisms. Examples include, but are not limited to, bromelain, bovine liver catalase, ficin, animal lipase, malt, pancreatin, pepsin, trypsin, proteases and carbohydrases. Animal-derived enzymes shall be free of Specified Risk Material (SRM). This annotation will be reviewed at the next revision of the standard. See Table 5.2 Phytase.
Fishmeal	Shall be organic if commercially available. All preservatives and other ingredients shall be listed in Table 5.2.
Flavours	Shall be organic.
Food waste	Organic food for human consumption or by-products from organic food production (excluding abattoir waste).
Hay or silage preservation products	Preference should be given to bacterial or enzymatic additives derived from bacteria, fungi and plants and food by-products (such as molasses and whey). The following acids may be used: lactic, propionic and formic.

Table 5.2 – Feed, feed additives and feed supplements	
Substance name(s)	Origin and usage
Mammalian or avian slaughter by-products	From organic sources and guaranteed free of Specified Risk Materials (SRM). Shall be used only to feed insects.
Manure or other animal waste	Sourced from organic livestock operations. Shall be used only as a component of feed formulas for insects.
Microorganisms and yeasts	If organic sources of yeast are not commercially available, non-organic yeast sources, including yeast autolysate, shall be used.
Milk replacer	Shall be organic if commercially available. Permitted for emergency use. Without antibiotics and animal fats or by-products.
Minerals, trace minerals, elements	Unprocessed rock dusts; ground animal or plant material (other than blood or bone meal); and seawater are preferred sources. Chelated and sulphated forms are permitted. If none of the aforementioned sources are commercially available, other versions are permitted except for forms containing or produced with EDTA or EDDHA.
Molasses	Shall be organic.
Phytase	Permitted when feed supplementation with phytase is recommended to reduce the phosphorus level in manure and thereby reduce the potential environmental consequence. As an exception, GE-derived sources of phytase are allowed even though they are not compliant to subclause 5.1.2 of CAN/CGSB-32.311 or Clause 1.4 a) of CAN/CGSB-32.310. This substance and annotation will be reviewed at the next revision of the standard.
Pre-mixes	Concentrated mixture of minerals and vitamins. From organic sources if commercially available. All ingredients in pre-mixes shall be essential for animal nutrition, and listed in Table 5.2. Non-GE fillers, for example rice hulls, may be non-organic.
Probiotics	Probiotics may be administered orally, as dietary supplements, via pharmaceutical preparations in the form of capsules, tablets, alginate gels, or dry powder.
Protein feeds	Shall be from organic sources.
Seaweed meal	Shall be organic, if commercially available (to be reviewed in 2031).

Table 5.2 – Feed, feed additives and feed supplements	
Substance name(s)	Origin and usage
Vitamins	Permitted for enrichment or fortification. Vitamin formulants that comply with Canadian regulations are accepted, including those containing non-organic agricultural carriers. Vitamins not compliant to subclause 5.1.2 of CAN/CGSB-32.311 are permitted.

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Acetylsalicylic acid	Aspirin.
Acids	Ascorbic, acetic, propionic, citric, formic and lactic acids and vinegar. Permitted for all uses such as treatment of water and bedding.
Activated charcoal	Shall be of plant origin.
Alcohol, ethyl (ethanol)	Permitted as a disinfectant and sanitizer.
Alcohol, isopropyl	Permitted as a disinfectant.
Antibiotics	See Clause 6.6 of CAN/CGSB-32.310, for conditions pertaining to antibiotic use in livestock. See Table 5.3 Antibiotics, oxytetracycline.
Antibiotics, oxytetracycline	For emergency use for bees. The equipment shall be destroyed in accordance with subclause 7.1.15.7 of CAN/CGSB-32.310; treated bees do not need to be destroyed if they are taken out of organic production.
Anti-inflammatories	Non-steroid anti-inflammatories such as ketoprofen. To reduce inflammation, preference shall be given to alternative products, such as those listed in Table 5.3, Botanical compounds; and Homeopathy and biotherapies. See subclause 6.6.4.1 of CAN/CGSB-32.310.
Biologics	
Botanical compounds	Botanical preparations, such as atropine, butorphanol and other medicines from herbaceous plants shall be used according to label specifications. Substances containing petroleum-derived formulants, such as propylene glycol, shall not be fed to livestock.
Calcium borogluconate	For milk fever. No withdrawal period required.
Chlorhexidine	For surgical procedures conducted by a veterinarian. To be used as a post-milking teat dip when alternative germicidal agents and physical barriers have lost their effectiveness. See Table 5.3 Teat dips and udder wash.
Colostrum whey	Probiotic.
Colostrum	Shall be organic if commercially available.
Copper sulphate	As an essential nutrient (source of copper and sulphur) and for topical use (foot baths).

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Diatomaceous earth	For use in control of external parasites and as a preventative practice for control of internal parasites. For internal use, diatomaceous earth shall be food grade (non-calcined).
Electrolytes	Including, but not limited to: CMPK (Calcium, Magnesium, Phosphorus, Potassium), calcium propionate and calcium sulphate. Shall not contain antibiotics. Orally or by injection.
Formic acid	For apicultural use, to control parasitic mites. The use of this substance shall be discontinued 14 days before harvesting the hive products.
Formulants (inerts, excipients)	Shall be used in conjunction with substances listed in Table 5.3. Formulants are not subject to Clause 1.4 or 1.5 of CAN/CGSB-32.310 or subclause 5.1.2 of this standard.
Glucose	
Glycerol (glycerine, glycerin)	Shall be from organic sources if commercially available. Shall be from vegetable oil or animal fat. Shall be produced using fermentation or by hydrolysis.
Homeopathy and biotherapies	
Honey	Shall be organic.
Hydrated lime (calcium hydroxide)	Shall not be used to deodorize animal wastes.
Hydrogen peroxide	Pharmaceutical grade hydrogen peroxide is permitted for external use (disinfectant). Food-grade hydrogen peroxide is permitted for internal use (for example, added to livestock drinking water).
Iodine	If used as a topical disinfectant: permitted iodine sources include potassium iodide and elemental iodine. If used as a cleaning agent: non-elemental iodine shall be used; iodine shall not exceed 5% solution by volume (example: iodophors). Use shall be followed by a hot-water rinse.
Iron products	May be supplied by ferric phosphate, ferric pyrophosphate, ferrous lactate, ferrous sulphate, iron carbonate, iron gluconate, iron oxide, iron phosphate, iron sulphate or reduced iron.

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Lanolin	For external use only, such as udder balm (ointment).
Local anesthetics	Such as lidocaine. Use of pharmaceutical local anesthetics shall be followed by withdrawal periods of 90 days before slaughter for meat products, and seven days for milk. Preference shall be given to alternatives, such as clove oil, listed in Table 5.3 Botanical compounds; Homeopathy and biotherapies.
Magnesium sulphate	Mined sources. A source of magnesium and sulphur.
Mineral oil	For external use.
Minerals, trace minerals, elements	Non-synthetic chelated or sulphated minerals. Examples include oyster shell, calcium chloride and magnesium oxide. Synthetic nutrient minerals may be used if non-synthetic sources are not commercially available. Minerals from any source are permitted for medical use.
Microorganisms and yeasts	If organic sources of yeast are not commercially available, non-organic yeast sources derived from living yeast, including yeast autolysate, shall be used.
Oxalic acid	For mite control in honeybee colonies.
Oxytocin	For post-parturition therapeutic use. Meat from treated animals will not lose its organic status. See subclause 6.6.10 d) of CAN/CGSB-32.310, for criteria pertaining to the mandatory withdrawal period.
Paraffin	Shall be food-grade. For use in hives.
Parasiticides and anti-microbials	Shall respect requirements set out in Clause 6.6 of CAN/CGSB-32.310 with regard to the use of parasiticides.
Physical teat seals	All sources are permitted. Shall be free from antibiotics. For post-lactation use. Shall be completely removed prior to nursing or milking. Shall be prescribed and administered under veterinary supervision.
Plant oils	To control external parasites.
Prebiotics	From organic sources if commercially available.
Probiotics	Probiotics may be administered orally, as dietary supplements, via pharmaceutical preparations in the form of capsules, tablets, alginate gels, or dry powder.

Table 5.3 – Health care products and production aids	
Substance name(s)	Origin and usage
Propylene glycol	May only be used as an ingredient in foot baths.
Sedatives	Such as xylazine.
Selenium products	Derived from sodium selenate or sodium selenite. May be used to address documented deficiencies in the stock, soils or feed supplies. See Table 5.3 Minerals, trace minerals, elements.
Sulphur	For control of external parasites.
Teat dips and udder wash	Substances, such as alcohol, iodine, hydrogen peroxide, chlorine dioxide and ozone, can be used as disinfectants for a pre- or post-teat dip or udder wash if they are registered for this use by Canada's <i>Food and Drug Regulations</i> . Chlorhexidine can be used as a post-milking teat dip if alternative germicidal agents and physical barriers have lost their effectiveness. See Table 5.3 Chlorhexidine.
Thymol	See Table 5.3 Botanical compounds for thymol derived from botanical sources. Thymol that is not derived from botanical sources may only be used in foot baths.
Vaccines	Vaccines may be used in prevention of diseases. If vaccines compliant to subclause 5.1.2 of this standard are not commercially available, or are ineffective, vaccines not compliant to subclause 5.1.2 are permitted.
Vitamins	Vitamin formulants that comply with Canadian regulations are accepted, including those containing non-organic agricultural carriers. Vitamins not compliant to subclause 5.1.2 of this standard are permitted. Orally, topically or by injection.

6 Permitted substances lists for preparation

6.1 Classification

6.1.1 Processing substances are classified according to the following uses and applications:

- a) Food additives (see definition in Clause 3 of CAN/CGSB-32.310);
- b) Other ingredients not considered to be food additives;
- c) Processing aids (see definition in Clause 3 of CAN/CGSB-32.310).

6.2 Restrictions

6.2.1 Substances listed in Tables 6.3, 6.4 and 6.5 shall comply with prohibitions in Clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and lactic acid):

- a) if the substance includes the substrates or growth media, the substrates or growth media ingredients shall be listed in Table 6.3, 6.4 or 6.5;
- b) if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.

6.2.2 Organic commercial availability requirements specified in the substance listing annotations of Tables 6.3, 6.4 or 6.5 apply to substances used in products composed of 95% or more organic content.

6.2.3 Other commercial availability requirements specified in the substance listing annotations of Tables 6.3, 6.4 or 6.5 apply to substances used in organic products composed of 70% or more organic content.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Alginic acid	
Antifoaming agents	See Table 6.5 Antifoaming agents.
Activated charcoal	Shall be of plant origin. Prohibited for use in the production of maple syrup.
Agar	See Table 6.3 Extraction solvents and precipitation aids.
Alginates	The following alginates are permitted: a) alginic acid; b) potassium alginate; and c) sodium alginate.
Ammonium bicarbonate	As a leavening agent.
Ammonium carbonate	As a leavening agent.
Argon	
Ascorbic acid (vitamin C)	
Calcium carbonate	Prohibited for use as a colouring agent.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Calcium chloride	Permitted for: a) milk products; b) fat products; c) soybean products; d) fruits and vegetables; and e) beer brewing to adjust the level of calcium.
Calcium citrate	
Calcium phosphates (mono-, di-, and tri-basic forms)	
Calcium sulphate (gypsum)	Mined sources; calcium sulphate produced using sulphuric acid is prohibited.
Carbon dioxide (CO ₂)	Carbonation of wine or mead is prohibited.
Carrageenan (Irish moss)	Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. By exception, isopropyl alcohol may be used to derive carrageenan.
Carriers	Carriers of non-agricultural origin may be used if listed on Tables 6.3, 6.4 or 6.5. Non-organic carriers of agricultural origin (such as wheat starch) may be used if ingredients or processing aids containing organic carriers are not commercially available.
Citric acid	From fruit and vegetable products or produced by microbial fermentation of carbohydrate substances.
Colouring agents	From biological sources such as spices, annatto, juices made from plant sources, etc. derived using approved methods (see Table 12 B (1) and (2), Origin and mode of production of CAN/CGSB-32.310), and substances in Table 6.3 Extraction solvents and precipitation aids. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).
Dibasic ammonium phosphate (diammonium phosphate, DAP)	As a yeast and bacterial food for vinegar and alcohol production restricted to 0.3 g/L (0.04 oz/gal). Not to be added to a final vinegar or alcohol product.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Enzymes	The following sources of enzymes are permitted: a) any preparations of enzymes normally used in food processing originating from edible, non-toxic plants, non-pathogenic fungi or non-pathogenic bacteria; b) originating from animals—shall be organic if commercially available: rennet; catalase from bovine liver; animal lipase; pancreatin; pepsin; and trypsin. Animal-derived enzymes shall be free of Specified Risk Material (SRM); and c) egg white lysozyme.
Extraction solvents and precipitation aids	The following may be used to derive (extract) substances listed in Tables 5.2, 6.3, 6.4 and 6.5: a) water; b) culinary steam, as described in subclause 8.1.2 b) of CAN/CGSB-32.310; c) fats, oils and alcohols other than isopropyl alcohol; d) supercritical CO₂; and e) substances listed in Tables 6.3, 6.4 or 6.5 of this standard. Precipitation aids derived from biological sources (such as plant proteins, albumin, casein, and gelatin) may also be used. In addition, non-biological precipitation aids, such as bentonite, silicon dioxide, etc., may be used if listed in Tables 6.3, 6.4 or 6.5. If listed in Tables 6.3, 6.4 or 6.5, precipitation aids shall meet any annotation restrictions therein.
Gelatine	Shall be organic, if commercially available. Gelatine may be sourced from: a) plants; or b) animals. If originating from cattle, gelatine shall be guaranteed free of Specified Risk Material (SRM).
Glucono delta lactone	Production by the oxidation of D-glucose with bromine water is prohibited.
Glycerides (mono- and diglycerides)	From organic sources if commercially available. For use in drum drying of products.
Glycerol (glycerine, glycerin)	Shall be from organic sources if commercially available. Shall be from vegetable oil or animal fat. Shall be produced using fermentation or by hydrolysis.
Gums	The following gums are permitted: arabic gum, carob bean gum (locust bean gum), gellan gum, guar gum, karaya gum, tragacanth gum, and xanthan gum. Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. By exception, isopropyl alcohol may also be used to derive gums.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Kelp and kelp products	For use as a thickener and dietary supplement.
Lactic acid	
Lecithin	Shall be organic if commercially available. The bleached form is permitted if processed using food-grade hydrogen peroxide.
Magnesium carbonate	As an anti-caking agent in non-standardized dry mixes (e.g., seasonings) used in meat products with 70-95% organic content.
Magnesium chloride	Derived from seawater.
Magnesium stearate	For use as an anti-caking or releasing agent in products whose contents are ≥70% and <95% organic ingredients.
Magnesium sulphate	
Malic acid	
Meat curing agents	Extracts, juice, or cultured powder of celery or chard are permitted. Shall be organic if commercially available.
Ozone	
Pectin	High-methoxyl and low-methoxyl pectin sources are permitted.
Potassium acid tartrate ($\text{KC}_4\text{H}_5\text{O}_6$)	From grapes/wine-making.
Potassium carbonates (mono- and bi-)	
Potassium chloride	From mined sources, such as sylvite, carnalite and potash. Refer to the potassium chloride listing in Table 6.4 regarding potassium chloride in vinegar and alcohol production.
Potassium citrate	
Potassium sulphite (bi-, meta- forms)	See Table 6.3 Sulphur dioxide, anhydrous (SO_2).
Potassium phosphate (mono-, di-, and tribasic forms)	For use in products whose contents are ≥70% and <95% organic ingredients.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Potassium tartrate (K ₂ C ₄ H ₄ O ₆ . INS 336)	
Silicon dioxide (silica)	No restrictions on sources or uses except for maple (see subclause 7.2.12.6 of CAN/CGSB-32.310).
Sodium acid pyrophosphate	For use as a leavening agent.
Sodium bicarbonate (baking soda)	
Sodium carbonate (soda ash)	If biological or mined sources are not commercially available, synthetic forms are permitted.
Sodium chloride	
Sodium citrate	
Sodium hydroxide (lye or caustic soda)	
Sodium phosphates	For use in dairy products.
Sulphur dioxide, anhydrous (SO ₂)	Sulphites from SO₂-bottled gas; as liquid SO₂; or liberated from ignition of asbestos-free sulphur wicks are permitted. Sulphurous acid (aqueous sulphur dioxide)₁, Potassium bisulphite and potassium metabisulphite are also permitted. For use as a preservative in alcoholic beverages; minimal use of SO₂ is recommended. Maximum allowable levels of SO₂ in parts per million (ppm) are: a) in alcoholic beverages containing less than 5% residual sugar, 100 ppm and 30 ppm for total and free sulphites, respectively; b) in alcoholic beverages containing 5%-10% residual sugar, 150 ppm and 35 ppm for total and free sulphites, respectively; and c) in alcoholic beverages containing more than 10% residual sugar, 250 ppm and 45 ppm for total and free sulphites, respectively
Sulphurous acid	See Table 6.3 Sulphur dioxide, anhydrous (SO ₂).
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	From lees. For beverages.
Tocopherols and mixed natural concentrates	Derived from vegetable oil when rosemary extract is not a suitable alternative.

Table 6.3 — Ingredients classified as food additives	
Substance name(s)	Origin and usage
Vegetable oils	Shall be organic if commercially available. Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Maple syrup production—vegetable oils shall be organic and without allergenic potential.
Waxes, produce	Organic beeswax and organic carnauba wax may be used to wax produce. See subclause 9.2.1 d) of CAN/CGSB-32.310 if organic wax is commercially unavailable. For other wax uses, see Table 6.5 Waxes.
Yeast	If organic sources of yeast are not commercially available, these alternative sources of yeast may be used: a) autolysate; b) bakers' (may contain lecithin, as listed in Table 6.3); c) brewers'; d) nutritional; and e) torula. Growth on petrochemical substrate and sulphite waste liquor is prohibited. Yeast may be smoked or smoke-flavoured. When smoked, the smoke shall come from concentrated, condensed smoke from wood without additional ingredients (unless listed in Tables 6.3, 6.4 or 6.5).

Table 6.4 – Ingredients not classified as food additives	
Substance name(s)	Origin and usage
Algal oil	See Table 6.4 Long-chain polyunsaturated fatty acids (LCPUFAs).
Amino acids	May be used if legally permitted for infant formula and formulated liquid diets to achieve the levels of proteins legally required.
Carriers	Carriers of non-agricultural origin may be used if listed on Tables 6.3, 6.4 or 6.5. Non-organic carriers of agricultural origin (such as wheat starch) may be used if ingredients or processing aids containing organic carriers are not commercially available.
Collagen casings	Collagen shall originate from animal sources. If derived from cattle, collagen shall be guaranteed free of Specified Risk Material (SRM). Other ingredients (such as, but not limited to: cellulose, calcium coatings, glycerin, etc.) added to collagen casings during their manufacture that remain in the collagen casing when it is used shall respect the requirement provided in Clause 1.4 a) of CAN/CGSB-32.310. Permitted for poultry sausage.
Cultures	See Table 6.4 Microorganisms.
Fatty Acids	a) Omega-3 b) Omega-6. Shall be organic if commercially available. Permitted for infant formulas to achieve the levels of fatty acids legally permitted.
Flavours	Derived from biological sources using approved methods (see Table 12 B (1) and (2) Origin and mode of production of CAN/CGSB-32.310), and substances (see Table 6.3 Extraction solvents and precipitation aids). Includes alternative substances derived from biological sources that impart flavour including but not limited to acids and bases permitted by Table 12 B (3) in CAN/CGSB 32.310. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).
Long-chain polyunsaturated fatty acids (LCPUFAs)	Docosahexaenoic acid (DHA)—from algal sources; arachidonic acid (ARA)—from fungal sources. Shall be organic if commercially available. Permitted for infant formulas to achieve the levels of fatty acids legally permitted.
Microorganisms	Microbial preparations may contain substrates made from agricultural substances or derived from biological substances such as milk, lactose, soy, agar, etc. May also contain permitted carriers (see Table 6.3 and 6.4 Carriers). Includes starter and dairy cultures and other preparations of microorganisms normally used in product processing.

Table 6.4 – Ingredients not classified as food additives	
Substance name(s)	Origin and usage
Nitrogen	Shall be food-grade quality.
Oxygen	
Potassium chloride	From mined sources such as sylvite, carnalite, and potash. May be used for all types of food production, including as food for yeast and bacteria in vinegar and alcohol production.
Potassium iodide	Shall be used when legally required or permitted.
Salt	Substances listed in Tables 6.3 or 6.4 may be added to mined or sea salt. See Table 6.3 Sodium chloride; Potassium chloride. See definition of Salt in clause 3 of CAN/CGSB-32.310.
Smoke flavour	See Table 6.3 Yeast.
Starch	From rice and waxy maize—Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids, where applicable. Starch shall not be modified by chemicals. Starch may be modified using physical or enzymatic methods. Cornstarch — If organic cornstarch is not commercially available, non-organic may be used and may contain substances that are plant-derived or listed in Tables 6.3, 6.4 or 6.5.
Vitamins and mineral nutrients	Shall be used if legally required (e.g., fluid milk, white flour, infant formula, meal replacement, etc.). The following non-dairy substitute products may be fortified on a voluntary basis, if legally permitted: plant-based beverages, products that resemble cheese, and butter substitutes. Ferrous sulphate—Shall be used if legally required and may be used, on a voluntary basis, if legally permitted.
Yeast	If organic sources of yeast are not commercially available, these alternative sources of yeast may be used: a) autolysate; b) bakers' (may contain lecithin, as listed in Table 6.3); c) brewers'; d) nutritional; and e) torula. Growth on petrochemical substrate and sulphite waste liquor is prohibited. Yeast may be smoked or smoke flavoured. When smoked, the smoke shall come from concentrated, condensed smoke from wood without additional ingredients (unless listed in Tables 6.3, 6.4 or 6.5).

Table 6.5 – Processing aids	
Substance name(s)	Origin and usage
<i>Acer pennsylvanicum</i>	As an anti-foaming agent in maple syrup production.
Alginic acid	
Antifoaming agents	Shall be composed of organic ingredients. May contain permitted substances (Tables 6.3 and 6.5).
Activated charcoal	Shall be of plant origin. Prohibited for use in the production of maple syrup.
Alcohol, ethyl (ethanol)	Shall be organic if commercially available.
Argon	
Ascorbic acid (vitamin C)	For use as an anti-browning agent prior to the extraction or concentration of fruit or vegetable juice.
Bentonite	
Calcium carbonate	
Calcium hydroxide (lime)	
Calcium sulphate (gypsum)	Sulphates produced using sulphuric acid are prohibited. May be used: a) as a carrier for cakes and biscuits; b) for soybean products; and c) for bakers' yeast.
Carbon dioxide (CO ₂)	
Carrageenan (Irish moss)	Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids.
Casein	Shall be from organic sources if commercially available. Non-organic casein shall be derived from the milk of animals not treated with rBGH (recombinant bovine growth hormone).
Clay dust	As a filtering agent in maple syrup production.
Cellulose	As a filtering aid (non-chlorine bleached) and for use in inedible regenerative sausage casings. The TCF (Totally Chlorine Free) method of bleaching is permitted.

Table 6.5 – Processing aids	
Substance name(s)	Origin and usage
Chlorine compounds	See Table 7.3 Chlorine compounds.
Citric acid	From fruit and vegetable products or produced by microbial fermentation of carbohydrate substances.
Diatomaceous earth	As a food filtering aid or as a clarifying agent.
Enzymes	The following sources of enzymes are permitted: a) any preparations of enzymes normally used in food processing made from edible, non-toxic plants, non-pathogenic fungi or non-pathogenic bacteria; b) originating from animals—shall be organic if commercially available: rennet; catalase from bovine liver; animal lipase; pancreatin; pepsin; and trypsin. Animal-derived enzymes shall be free of Specified Risk Material (SRM); c) egg white lysozyme.
Gelatine	Shall be from organic sources if commercially available. Permitted sources are: a) plants; and b) animals. Animal gelatine may be used in preparations of canned meat or as a gelling agent for gummed candy. If originating from cattle, gelatine shall be guaranteed free of Specified Risk Material (SRM).
Hydrogen peroxide	Food-grade. For use as a bleaching agent for proteins and starches.
Isinglass	As a fining agent (fish-based).
Kaolin	As a clarifying agent.
Lactic acid	
Lecithin	Shall be organic if commercially available. Bleached form is permitted if processed using food-grade hydrogen peroxide.
Nitrogen	Shall be food-grade quality.
Oxygen	
Ozone	
Peracetic acid	
Perlite	For use as a filtering aid.
Potassium carbonate	

Table 6.5 – Processing aids	
Substance name(s)	Origin and usage
Potassium hydroxide (caustic potash)	For pH adjustment. Prohibited for use in lye peeling of fruits and vegetables.
Silicon dioxide (silica)	No restrictions on sources or uses except for maple (see subclause 7.2.12.6 of CAN/CGSB-32.310)
Sodium bicarbonate (baking soda)	
Sodium hydroxide (lye or caustic soda)	Prohibited for use in lye peeling of fruits and vegetables.
Talc	As a filtering agent.
Tannic acid	Shall be from an organic source if commercially available. Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Permitted as a filtration aid for wines.
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	From lees. For beverages.
Vegetable oils	From organic sources if commercially available. Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Maple syrup production—vegetable oils shall be organic and without allergenic potential.
Waxes	If organic waxes, such as beeswax or caruaba, are not commercially available, waxes derived from non-organic biological sources may be used. Edible wax cheese coatings that require a knife to cut or peel the wax away shall not contain paraffin, microcrystalline wax, non-listed preservatives, colours, bactericides or fungicides. Non-edible, fully removable (i.e., no knife is needed to cut or peel the wax away from the cheese), non-organic cheese wax may be used and shall be considered packaging per subclause 8.1.6 of CAN/CGSB-32.310. For waxes applied to produce — see Table 6.3 Waxes, produce.

7 Permitted substances lists for cleaners, disinfectants and sanitizers

7.1 Classification

7.1.1 The cleaners, disinfectants and sanitizers listed below are used to remove dirt, filth and foreign matter from organic products and organic product contact surfaces. These substances are also used to control microorganisms that may contaminate products. The use of these substances may require a removal event, as defined in Clause 3 of CAN/CGSB-32.310.

7.1.2 They are classified as follows:

- a) food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event;
- b) cleaners, disinfectants and sanitizers permitted on organic product contact surfaces, for which a removal event is mandatory prior to an organic production load or run.

7.1.3 All non-organic ingredients listed on Safety Data Sheets (SDS) and active ingredients listed on the label of formulated cleaners, sanitizers and disinfectants shall be listed in Tables 7.3 or 7.4. Other non-organic ingredients used without a removal event shall be limited to substances listed in Table 7.3; water; compounds used to treat drinking water; and product stabilisers, such as HEDP (1-hydroxyethane 1,1-diphosphonic acid) or dipicolinic acid, whose function is to prevent the chemical degradation of substances listed in Table 7.3. Table 7.4 compliant products may contain non-active ingredients, including, but not limited to, dyes, fragrances, and chemical agents used to prevent physical separation of foams or emulsions.

7.1.4 Substances listed in Tables 7.3 and 7.4 are not subject to Clauses 1.4 or 1.5 of CAN/CGSB-32.310.

7.2 Clause 7 does not apply to maple syrup production. The operator shall meet the specific requirements for the different stages of production as described in Clause 7.2 of CAN/CGSB-32.310.

Table 7.3 — Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event	
Substance name(s)	Origin and usage
Acetic acid	May be used on organic product contact surfaces. May be used on organic products if produced by microbial fermentation of natural carbohydrate sources (sugars, wood, etc.). Example: apple cider vinegar. May be filtered or unfiltered.
Alcohol, ethyl (ethanol)	May be used on organic product contact surfaces.
Alcohol, isopropyl	May be used on organic product contact surfaces.
Alcohol, organic sources	
Ascorbic acid (vitamin C)	
Carbon dioxide (CO ₂)	
Chlorine compounds	The following chlorine compounds are permitted: a) calcium hypochlorite; b) chlorine dioxide; c) hypochlorous acid generated via electrolyzed water; d) sodium hypochlorite. Chlorine compounds may be used: a) for wash water in direct contact with crops or food; b) in flush water from cleaning irrigation systems, equipment, storage or transport units—application to crops or fields is permitted. Shall not exceed the maximum level of chlorine in potable water, as per the <i>Guidelines for Canadian Drinking Water Quality</i> published by Health Canada, as well as any applicable provincial requirements.
Citric acid	
Glycerol (glycerine, glycerin)	May be used on organic product contact surfaces, including hands. May be used on organic products if sourced from vegetable oil or animal fat; and produced using fermentation or by hydrolysis.
Hydrogen peroxide	
Lactic acid	
Magnesium sulphate	
Microorganisms	Living or dead biological organisms, such as viruses, phages, bacteria, protozoa, fungi, etc.

Table 7.3 — Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event	
Substance name(s)	Origin and usage
Non-ionizing radiation	May be used to manage pest loads on product and product contact surfaces, including facilities, equipment and empty hives. Non-ionizing radiation is defined in Clause 3 of CAN/CGSB-32.310 in the Terms and Definitions.
Ozone	
Peracetic (peroxyacetic) acid	On food and plants: peracetic acid may be used in wash or rinse water. Peracetic acid may also be used on food contact surfaces.
Potassium bicarbonate	On organic product contact surfaces.
Sodium bicarbonate (baking soda)	
Sodium carbonate (soda ash)	Biological or mined sources. See Table 7.4 Sodium carbonate (soda ash), synthetic.
Sodium citrate	
Sodium hydroxide (lye or caustic soda)	
Surfactants, biodegradable	Surfactants either stand-alone or when formulated with substances listed on Table 7.3 shall be readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions. Permitted for egg washing.
Vinegar	

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory	
Substance name(s)	Origin and usage
Chlorine compounds	The following chlorine compounds are permitted up to maximum label rates: - calcium hypochlorite; - chlorine dioxide; - hypochlorous acid generated via electrolyzed water; and/or - sodium hypochlorite.
Detergents	Detergent products shall be: - readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions; or - composed of substances listed in Tables 7.3 or 7.4 (if surfactants are added, the surfactants will meet the OECD definition of biodegradable); or - readily eliminated during wastewater treatment such that harm to the environment is minimized
Essential oils	Derived from plant sources using substances in Table 6.3 Extraction solvents and precipitation aids. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).
Iodine	Shall be non-elemental. Shall not exceed 5% solution by volume (example: iodophors).
Lime	All forms of lime, including calcium carbonate, calcium hydroxide and calcium oxide.
Methanesulphonic acid (MSA)	
Octanoic acid (caprylic acid)	
Peroxyoctanoic acid (POOA)	
Phosphoric acid	On dairy equipment.
Potassium carbonate	Documentation shall demonstrate that effluent discharge was neutralized to minimize negative environmental impact.
Potassium hydroxide (caustic potash)	
Potassium permanganate	Not to exceed 1% solution by volume.
Saponin	Derived from plants such as <i>Yucca schidigera</i> and <i>Quillaja saponaria</i> .

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory	
Substance name(s)	Origin and usage
Soap-based algicide (demossers)	
Soaps	Soaps shall consist of fatty acids derived from animal or vegetable oils.
Sodium borate	
Sodium carbonate (soda ash), synthetic	
Sodium percarbonate	
Sodium silicate	In detergents.
Surfactants	Surfactants either stand alone or when formulated with substances listed in Tables 7.3 or 7.4 to create cleaning products including detergents, soaps, degreasers, and disinfectants, shall be readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions, or readily eliminated during wastewater treatment such that harm to the environment is minimized.
Surfactants, biodegradable	Surfactants, used alone or added to substances authorized in Table 7.3, must be ultimately or intrinsically biodegradable according to the definitions of the Organisation for Economic Co-operation and Development (OECD). Egg washing permit.
Wetting agents	Substances listed in Table 4.2 or 7.3, including saponins and microbial wetting agents.

8 Facility management substances

8.1 Classification

8.1.1 Facility management substances are classified according to the following uses and applications:

- Substances listed in Table 8.2 are pesticides (See definition of Pesticides in clause 3 of CAN/CGSB-32.310) that may be used in and around facilities, as annotated and as specified in subclause 8.3.2 of CAN/CGSB-32.310. These substances may also be used in traps, lures and as repellents, unless indicated otherwise within substance annotations.
- Substances listed in Table 8.3 may be used in facilities as annotated, to accomplish a physiological effect post-harvest.
- Substances listed in Tables 8.2 and 8.3 are not subject to Clauses 1.4 and 1.5 of CAN/CGSB-32.310.

Table 8.2 – Facility pest management substances	
Substance name(s)	Origin and usage
Ammonium carbonate	As an attractant in insect traps.
Baits for rodent control	Non-poisonous baits are allowed for use with rodent control devices in locations where there is no potential for contamination of organic products, crops, or fields with prohibited substances.
Boric acid	May be used for structural pest control (example: for ants). Direct contact with organic products is prohibited.
Carbon dioxide (CO ₂)	For controlled atmosphere storage and for storage pest control.
Cholecalciferol (vitamin D ₃)	Prohibited inside organic food processing and food storage facilities.
Diatomaceous earth	Direct contact with organic products is permitted.
Formulants	May only be used with substances listed in Table 8.3. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or derived from biological or mineral sources may be used with substances in Table 8.2. Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to Clauses 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.
Neem oil	
Pheromones and other semiochemicals	For pest control. Use in pheromone traps or passive dispensers.
Pyrethrins	Without piperonyl butoxide. Direct contact with organic products is prohibited.
Repellents	Shall be derived from a biological source, such as sterilized blood meal, rotten eggs, hair or predator scents. May contain other biological compounds and PMRA 4a- or 4b-listed formulants.
Soaps, ammonium	As a large animal repellent. Direct contact with organic products is prohibited.

Table 8.3 – Post-harvest substances	
Substance name(s)	Origin and usage
Carbon dioxide (CO ₂)	For controlled atmosphere storage.
Botanical oils	Oils from the Lamiaceae (mint family), Apiaceae/Umbelliferae (celery family) and Myrtaceae (clove family) may be used as post-harvest sprout inhibitors.
Ethylene	For post-harvest ripening of tropical fruit and degreening of citrus and to control sprouting of potatoes post-harvest in holding bins.
Formulants	Formulants may only be used with substances listed in Table 8.3. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or are non-synthetic may be used with substances in Table 8.3. Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.
Nitrogen	For controlled atmosphere storage.
Oxygen	

Annex A

(informative)

Alphabetized list of substances

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
<i>Acer pennsylvanicum</i>	6.5
Acetic acid	4.2, 7.3
Acetylsalicylic acid	5.3
Acids	5.3, 6.3, 6.5
Activated charcoal	5.3, 6.3, 6.5
Adhesives for sticky traps and barriers	4.2
Agar	4.2, 6.3
Alcohol, ethyl (ethanol)	5.3, 6.5, 7.3
Alcohol, isopropyl	5.3, 7.3
Alcohol, organic sources	7.3
Alfalfa meal and pellets	4.2
Algae	4.2
Alginates	6.3
Amino acids	5.2
Ammonium bicarbonate	6.3
Ammonium carbonate	4.2, 6.3, 8.2
Animal manure, unprocessed	4.2
Animal manure, dried	4.2
Antibiotics	5.3
Antibiotics, oxytetracycline	5.3
Anti-inflammatories	5.3
Antioxidants	5.2
Aquatic plant extracts	4.2
Argon	6.3, 6.5
Ascorbic acid (vitamin C)	4.2, 6.3, 6.5, 7.3
Ash	4.2
Baits for rodent traps	4.2, 8.2
Bentonite	4.2, 6.5
Biodegradable plant containers	4.2
Biochar	4.2
Biodynamic preparations for compost, soil and plants	4.2
Biologics	5.3
Blood meal	4.2

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Bone meal	4.2
Borate (boric acid)	4.2
Boric acid	8.3
Boron	4.2
Botanical compounds	5.3
Botanical oils	8.3
Botanical pesticides	4.2
Brewers' grains and solubles	4.2
Calcium	4.2
Calcium borogluconate	5.3
Calcium carbonate	6.3, 6.5
Calcium chloride	4.2, 6.3
Calcium citrate	6.3
Calcium hydroxide (lime)	6.5
Calcium lignin sulphonate	4.2
Calcium phosphates (mono-, di-, and tri- basic forms)	6.3
Calcium polysulphide	4.2
Calcium sulphate (gypsum)	4.2, 6.3, 6.5
Cannery wastes	4.2
Carbon dioxide (CO ₂)	4.2, 6.3, 6.5, 7.3, 8.2, 8.3
Cardboard	4.2
Carrageenan (Irish moss)	6.3, 6.5
Carriers	6.3, 6.4
Casein	6.5
Cellulose	6.5
Chelates	4.2
Chitosan	4.2
Chlorine compounds	7.3, 7.4
Chlorhexidine	5.3
Cholecalciferol (vitamin D ₃)	4.2, 8.2
Citric acid	4.2, 6.3, 6.5, 7.3
Cobalt	4.2
Coir (coconut fiber)	4.2
Clay	4.2
Clay dust	6.5
Collagen casings	6.4
Colostrum whey	5.3

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Colostrum	5.3
Colouring agents	5.2, 6.3
Compost	4.2
Compost feedstocks	4.2
Compost from off-farm sources	4.2
Compost produced on the farm	4.2
Compost tea	4.2
Condensed molasses fermentation solubles (Vinasse)	4.2
Copper (plant nutrition)	4.2
Copper (crop production aid)	4.2
Copper sulphate	5.3
Cultures	6.4
Detergents	7.4
Diatomaceous earth	4.2, 5.2, 5.3, 6.5, 8.2
Dibasic ammonium phosphate (diammonium phosphate, DAP)	6.3
Digestate, anaerobic	4.2
Distillers' grains and solubles	4.2
Dormant oils	4.2
Dust suppressants	4.2
Electrolytes	5.3
Energy feeds and forage concentrates (grains) and roughages (hay, silage, fodder, straw)	5.2
Enzymes	4.2, 5.2, 6.3, 6.5
Essential oils	7.4
Ethylene	8.3
Extractants	4.2
Extraction solvents and precipitation aids	6.3
Feather meal	4.2
Ferric phosphate (iron ortho-phosphate, iron phosphate)	4.2
Fibre row covers	4.2
Fish meal	5.2
Fish products	4.2
Flavours	5.2, 6.4
Food waste	5.2
Formic acid	5.3
Formulants used in soil amendments	4.2
Formulants used in crop production aids	4.2

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Formulants (inerts, excipients)	5.3, 8.2, 8.3
Frass	4.2
Gelatine	6.3, 6.5
Glucono delta lactone	6.3
Glucose	5.3
Glycerides (mono and diglycerides)	6.3
Glycerol (glycerine, glycerin)	5.3, 6.3, 7.3
Growth regulators for plants	4.2
Gums	6.3
Hay or silage preservation products	5.2
Homeopathy and biotherapies	5.3
Homeopathic preparations	4.2
Honey	5.3
Hormones	4.2
Humates, humic acid and fulvic acid	4.2
Hydrated lime (calcium hydroxide)	4.2
Hydrogen peroxide	4.2, 5.3, 6.5, 7.3, 7.4
Hydrolyzed proteins of animal origin	4.2
Hydrolyzed proteins of plant origin	4.2
Inoculants	4.2
Invertebrates	4.2
Iodine	5.3, 7.4
Iron	4.2
Iron products	5.3
Isinglass	6.5
Kaolin	6.5
Kaolin clay	4.2
Kelp and kelp products	4.2, 6.3
Lactic acid	7.3
Lanolin	5.3
Leaf mould	4.2
Lecithin	6.3, 6.5
Lignin and lignin sulphonates (lignosulphonates)	4.2
Lime	4.2, 7.4
Lime sulphur (calcium polysulphide)	4.2
Limestone	4.2
Local anesthetics	5.3

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Magnesium	4.2
Magnesium carbonate	6.3
Magnesium chloride	6.3
Magnesium stearate	6.3
Magnesium sulphate	5.3, 6.3, 7.3
Malic acid	6.3
Mammalian or avian slaughter by-products	5.2
Manure, non-organic manure source	4.2
Manure or other animal waste	5.2
Meat curing agents	6.3
Meat meal	4.2
Methanesulphonic acid (MSA)	7.4
Microbial extracts	4.2
Microbial fertilizers	4.2
Microorganisms	6.4, 7.3
Microorganisms and microbial products	4.2
Microorganisms and yeasts	5.2, 5.3
Milk and milk by-products	4.2
Milk replacer	5.2
Mined minerals, unprocessed	4.2
Mineral oil	5.3
Minerals, trace minerals, elements	5.2, 5.3
Molasses	4.2, 5.2
Molybdenum	4.2
Mulches	4.2
Mushroom compost	4.2
Neem oil	8.2
Nitrogen	6.4, 6.5, 8.3
Nitrogen gas	4.2
Non-ionizing radiation	4.2, 7.3
Octanoic acid (caprylic acid)	7.4
Oilseed meals	4.2
Oxalic acid	5.3
Oxygen	4.2, 6.4, 6.5, 8.3
Oxytocin	5.3
Ozonated water	4.2

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Ozone	6.3, 6.5, 7.3
Paraffin	5.3
Parasitocides and anti-microbials	5.3
Peat moss	4.2
Pectin	6.3
Peracetic (peroxyacetic) acid	4.2, 6.5, 7.3
Perlite	6.5
Peroxyoctanoic acid (POOA)	7.4
Pheromones and other semiochemicals	4.2, 8.2
Phosphate rock	4.2
Phosphoric acid	7.4
Physical teat seals	5.3
Phytase	5.2
Plant extracts, oils and preparations	4.2
Plant material	4.2
Plant oils	5.3
Plant protectants	4.2
Plastic for row covers and solarization	4.2
Polyoxin D zinc salt	4.2
Pomaces	4.2
Potassium	4.2
Potassium acid tartrate ($\text{KC}_4\text{H}_5\text{O}_6$)	6.3
Potassium bicarbonate	4.2, 7.3
Potassium carbonate	6.5, 7.4
Potassium carbonates (mono- and bi-)	6.3
Potassium chloride	6.3, 6.4
Potassium citrate	6.3
Potassium hydroxide (caustic potash)	6.5, 7.4
Potassium iodide	6.4
Potassium sulphite (bi-, meta-.forms)	6.3
Potassium permanganate	7.4
Potassium phosphate (mono-, di-, and tribasic forms)	6.3
Potassium tartrate ($\text{K}_2\text{C}_4\text{H}_4\text{O}_6$ INS 336)	6.3
Prebiotics	5.3
Pre-mixes	5.2
Probiotics	5.2, 5.3

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Propylene glycol	5.3
Protein feeds	5.2
Pyrethrins	8.2
Pyrethrum	4.2
Quicklime (calcium oxide)	4.2
Repellents	4.2, 8.2
Salt	4.2, 6.4
Saponin	7.4
Seaweed and seaweed products	4.2
Seaweed meal	5.2
Sedatives	5.3
Seed lubricant	4.2
Seed treatments	4.2
Selenium	4.2
Selenium products	5.3
Shell from aquatic animals	4.2
Silicic acids, including potassium and sodium salts of silicic acid	4.2
Silicon, silica (silicon dioxide) and silicates	6.3, 6.5
Smoke flavour	6.4
Soap-based algicide (demossers)	7.4
Soaps	4.2, 7.4
Soaps, ammonium	4.2, 8.2
Sodium acid pyrophosphate	6.3
Sodium bicarbonate	4.2, 6.3, 6.5, 7.3
Sodium borate	7.4
Sodium carbonate (soda ash)	6.3, 7.3
Sodium carbonate (soda ash), synthetic	7.4
Sodium chloride	6.3
Sodium citrate	6.3, 7.3
Sodium hydroxide (lye or caustic soda)	5.3, 6.3, 6.5, 7.3
Sodium percarbonate	7.4
Sodium phosphates	6.3
Sodium silicate	7.4
Soil	4.2
Sphagnum moss	4.2
Starch	6.4

Table A.1 – List of permitted substances in alphabetical order	
Substance name(s)	Referenced in table
Struvite (magnesium ammonium phosphate)	4.2
Sugar	4.2
Sulphur	5.3
Sulphur dioxide, anhydrous (SO ₂)	6.3
Sulphurous acid	6.3
Sulphur smoke bombs	4.2
Sulphur, elemental	4.2
Summer oils	4.2
Surfactants	4.2, 7.4
Talc	6.5
Tannic acid	6.5
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	6.3, 6.5
Teat dips and udder wash	5.3
Thymol	5.3
Tocopherols and mixed natural concentrates	6.3
Transplant and potting media	4.2
Treated seed	4.2
Tree seals	4.2
Vaccines	5.3
Vegetable oils	6.3, 6.5
Vermicasts	4.2
Vermiculite	4.2
Vinegar (acetic acid)	4.2, 7.3
Vitamins	4.2, 5.2, 5.3
Vitamins and mineral nutrients	6.4
Water	4.2
Water, recycled	4.2
Waxes	6.5
Waxes, produce	6.3
Wetting agents	4.2, 7.4
Wood ash	4.2
Worm castings	4.2
Yeast	4.2, 6.3, 6.4
Zinc	4.2

Compared versions of the 2020–2026 Canadian Organic Standards

Organic production systems

Permitted Substances Lists – CAN/CGSB-32.311

Prepared by the Organic Federation of Canada

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Organic production systems - Permitted Substances Lists

	Rationale
Introduction	
Organic operations in Canada remain subject to all applicable laws and regulations. Substances that appear in CAN/CGSB-32.311, <i>Organic production systems — Permitted substances lists</i> , are subject to the <i>Pest Control Products Act</i> (PCPA) or the <i>Food and Drugs Act</i> (FDA) when used in Canada as pesticides or disinfectants. Health Canada's Pest Management Regulatory Agency (PMRA) is the federal authority responsible for the regulation of pest control products (including sanitizers) under the PCPA Regulations. Disinfectants are regulated by Health Canada's Therapeutic Products Directorate (TPD) under the FDA Regulations.	
Substances that appear in CAN/CGSB-32.311, <i>Organic production systems — Permitted substances lists</i> , are subject to the FDA when used in Canada as veterinary drugs destined to food producing animals and to the <i>Feeds Act</i> (FA) when used in Canada as livestock feed. Health Canada's Veterinary Drugs Directorate is the federal authority responsible for the regulation of veterinary drugs under the FDA Regulations. Livestock feeds are regulated by the Animal Feed Division of the Canadian Food Inspection Agency under the FA Regulations and the <i>Health of Animals Act</i> .	
This standard, in conjunction with CAN/CGSB-32.310, is intended for certification and regulation to prevent deceptive practices in the marketplace. The certification process assesses operational compliance. Certification is granted to compliant product.	
Annex A provides a list of permitted substances in alphabetical order.	
Notes and examples in this standard	
In this standard, notes and examples are used for giving additional information intended to assist the understanding or use of the document and are not a normative part of the standard.	

1 Scope	Rationale
1.2 This National Standard of Canada ¹ provides additional information to CAN/CGSB-32.310, <i>Organic production systems — General principles and management standards</i> , in the form of permitted substances to be used as annotated in accordance with the scope of the table in which they are listed. Use of a listed substance in a manner inconsistent with the scope of the table in which it appears is not permitted, except as specified in a listed substance annotation. Listed substances <u>shall</u> comply with prohibitions in 1.4 and 1.5 of CAN/CGSB-32.310.	Clarification of text.
1.2 Units of Measure Quantities and dimensions in this standard are given in metric units with yard/pound equivalents, mostly obtained through soft conversion, given in parentheses. The metric units shall be regarded as official in the event of dispute or unforeseen difficulty arising from the conversion.	

2 Normative references	Rationale
2 Normative references The following normative documents contain provisions that, through reference in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below. NOTE The addresses provided below were valid at the date of publication of this standard. An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.	
2.1 Canadian General Standards Board (CGSB) CAN/CGSB-32.310 — <i>Organic production systems – General principles and management standards</i> .	

¹ References throughout this document to “this National Standard of Canada” or “this standard” refer to CAN/CGSB-32.311, *Organic Production Systems – Permitted Substances Lists*.

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2.1.1	Source The above may be obtained from the Canadian General Standards Board, Sales Centre, Ottawa ON Canada K1A 0S5. Telephone: 1-800-665-2472. E-mail: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site: www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html .	
2.2	Canadian Council of Ministers of the Environment (CCME) <i>Guidelines for compost quality.</i>	
2.2.1	Source The above may be obtained from the Canadian Council of Ministers of the Environment, 123 Main Street, Suite 360, Winnipeg, Manitoba R3C 1A3. Telephone: 204-948-2090. Fax: 204-948-2125. E-mail: info@ccme.ca. Web site: www.ccme.ca .	
2.3	Bureau de normalisation du Québec (BNQ) CAN/BNQ-0017-088 — <i>Specifications for compostable plastics.</i>	
2.3.1	Source The above may be obtained from the BNQ Web site at: www.bnq.qc.ca .	
2.4	Demeter Production Standards <i>Demeter Production Standards.</i>	
2.4.1	Source The above may be obtained from the Demeter Production Web site at: https://www.demetercanada.ca/wp-content/uploads/2018/10/DI-production-stds-Demeter-Biodynamic-18-e.pdf . https://demeter.net/wp-content/uploads/2024/10/2025_Int_Dem_bio_Standard_eng.pdf	Updated reference.
2.5	Pest Management Regulatory Agency (PMRA) <i>PMRA list of formulators.</i>	
2.5.1	Source The above may be obtained from the PMRA Web site (https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management.html), at https://open.canada.ca/data/en/dataset/ededff77-a021-48d6-89a5-cdbcd75fb4ff .	
2.6	Ministère du développement durable, de l'environnement et de la lutte contre les changements climatiques (MELCC) <i>Guidelines for the Beneficial Use of Fertilizing Residuals</i>	

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2.6.1	Source The above can be obtained from the MELCC Website, at http://www.environnement.gouv.qc.ca/matieres/mat_res/fertilisantes/critere/guide-mrf.pdf (only available in French).	
2.7	Organisation for Economic Co-operation and Development (OECD) <i>OECD Guidelines for the Testing of Chemicals, Section 3: Environmental fate and behaviour</i>	
2.7.1	Source The above may be obtained from the OECD Web site at https://www.oecd-ilibrary.org/ .	

3 Requirements for adding or amending substances in the lists

3.1	Clause 10 of CAN/CGSB-32.310 outlines the requirements for adding or amending listed substances.	

4 Permitted substances lists for crop production

		Rationale
4.1	Classification	
4.1.1	Crop production substances are classified according to the following uses and applications:	
4.1.1 a	Soil amendments and crop nutrition in Table 4.2 (Column 1) are substances applied to the soil to improve fertility ~~and, tillage and to correct soil problems~~ <u>biodiversity</u> . Fertilizers, plant foods and soil amendments are primarily used for their plant nutrient content and may be applied to the soil or to plant foliage. <u>Soil building practices and nutrient usage shall comply with CAN/CGSB 32.310 5.4.</u>	Text modified to better describe the role of soil amendments.
4.1.1 b	Crop production aids and materials in Table 4.2 (Column 2) may be directly applied to the crop or soil, or used to control pests (including diseases, weeds and insects) ~~when organic management practices alone cannot prevent or control pests as specified in 5.6.2 of CAN/CGSB 32.310.~~ Examples include: adjuvants, insect traps and plastic mulch, vertebrate animal pest management substances, <u>and</u> plant disease and insect pest management substances.	Text modified because some operators refer only to the Permitted Substances Lists only and are unfamiliar with requirements that apply to substance use according to CAN/CGSB-32.310 General Principles and Management Standards. The change reinforces that soil building is the foundation of organic production. The change clarifies that management practices should be the basis of pest control and the first approach. Production aids are permitted only when management practices alone cannot control pests.
4.1.2	Use of a listed substance in a manner inconsistent with the scope of the table in which it appears is not permitted, except as specified in substance annotations.	
4.1.3	Substances listed in Table 4.2 shall comply with prohibitions in 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and gibberellic acid):	
4.1.3 a	if the substance includes the substrates or growth media, the ingredients of the substrates or growth media shall be listed in Table 4.2;	

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4.1.3 b	if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.	

Table 4.2 – Substances for crop production

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Acetic acid	Sources other than petrochemicals can be used. As an adjuvant, a pH regulator and for controlling pests (including weeds) and cleaning seeds.		•	
Adhesives for sticky traps and barriers			•	
Agar	For use in initial mushroom spawn production.	•		
Alfalfa meal and pellets	Shall be organic if commercially available.	•		
Algae and algal products	See Table 4.2 Aquatic plants <u>extracts</u> and aquatic Plant <u>material products</u> .	•	•	
~~Amino acids~~	~~Derived from plants, animals or microorganisms, and extracted, hydrolyzed or isolated by non-chemical means, such as physical separation, or by substances listed in Table 4.2 (Column 1 or Column 2) excluding Formulants used in crop production aids.~~	•	•	The "Amino acids" listing has been replaced with two listings: "Hydrolyzed proteins of plant origin" and "Hydrolyzed proteins of animal origin".
Ammonium carbonate	As an attractant in insect traps.		•	
Animal manure, <u>processed</u> <u>dried</u>	~~Manures treated by mechanical or physical (including heat) methods are permitted. Additional ingredients shall be listed in Table 4.2 (Column 1).~~	•		"Animal manure" and "Animal manure, processed" have been changed to "Animal

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	~~Dried manure may be pelleted or granulated. Manure sources shall conform to requirements specified in 5.5.1 of CAN/CGSB-32.310.~~ a) The operator shall be able to demonstrate that best practices known to eliminate human pathogens have been used in the production process; <u>or</u> b) <u>demonstrate that the product meets criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in Guidelines for Compost Quality; or</u> c) <u>follow the application restrictions in 5.5.2.5 of CAN/CGSB-32.310.</u> See also Table 4.2 ~~Manure, composted and Manure, non-organic. Compost and Digestate, anaerobic for microbially treated manure.~~			manure, unprocessed" and "Animal manure, dried," respectively, for clarity. The "Animal manure, unprocessed" annotation prohibits concentrated nutrient extracts to clarify that these substances, even those derived from unprocessed liquid manure or slurry, are not considered animal manure. The "Animal manure, dried" annotation outlines the requirements for managing the risk of potential human pathogens in dried manure.
Animal manure, <u>unprocessed</u>	~~See clauses 5 and 6 of CAN/CGSB-32.310. See also Table 4.2 Manure, composted and Manure, non-organic.~~ <u>Includes solid manure (manure mixed with bedding), liquid manure and slurry. Manure sources shall comply with the requirements specified in 5.4.2 b) 3) and 5.5.1 of CAN/CGSB-32.310. Usage must comply with 5.5.2.5.</u> <u>Concentrated nutrient extracts, such as those produced by distillation, are not considered animal manure.</u>	•		
Aquatic plants and aquatic ~~plant products~~ <u>extracts</u>	Aquatic plant ~~extracts products~~ may be ~~extracted by~~ <u>produced using</u> the following substances in order of preference:	•	•	This new listing is for aquatic plant extracts only while aquatic plant material falls under the new "Plant material" listing.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	a) ~~substances listed in Table 4.2 Extractants (Column 1 or 2) with the exception of Formulants used in Crop Production Aids;~~ b) ~~potassium hydroxide-c) sodium hydroxide~~ provided the amount of solvent used does not exceed the amount necessary for extraction. The operator shall provide an affidavit from the manufacturer that proves the need to use <u>sodium potassium hydroxide</u>; c) <u>potassium sorbate</u>; and ~~d) sodium benzoate and potassium sorbate may be used as preservatives for water-extracted aquatic plant products. All other preservatives are prohibited unless listed in Table 4.2 (Column 1 or 2) with the exception that Formulants used in crop production aids are prohibited.~~ <u>Aquatic plant extracts shall not contain more than:</u> a) <u>1.5% total nitrogen (dry basis);</u> b) <u>0.5% P2O5 (dry basis); and</u> c) <u>20% K2O (dry basis).</u> <u>Ammonium nitrogen shall not exceed 20% of total nitrogen.</u> <u>Nitrate nitrogen shall not exceed 20% of total nitrogen.</u> <u>See Table 4.2 Plant material for use of unprocessed aquatic plants.</u>			Sodium hydroxide (in b) is no longer permitted as an extractant because it is caustic, not commonly used, and its removal should not impact the sector. The annotation no longer restricts the use of sodium benzoate (in d) to only water-extracted aquatic plant products. Preserving other types of aquatic plant products is just as valid/necessary. The annotation now contains limits on maximum nutrient levels; these levels reflect the estimated nutrient content in unadulterated aquatic plant products. The new testable criteria (e.g., maximum levels of N, P, K) serve as a tool for assessing compliance and preventing undeclared substances/fraudulent products, thereby ensuring organic integrity.
Ascorbic acid (vitamin C)			•	

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Ash	Ash shall be from plant and animal sources. Ash from burning manure or from burning minerals, coloured paper, plastics or other non-biological substances is prohibited. Ash containing materials that cannot be verified or containing prohibited substances shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in <i>Guidelines for the Beneficial Use of Fertilising Residuals</i> . Shall not cause a build-up of heavy metals or micronutrients in soil.	•	•	
Baits for rodent traps	May contain food or substances listed in Table 8.2.		•	
Bentonite	See Table 4.2 Mined minerals, unprocessed and Clay.	•	•	
Biochar	Produced through pyrolysis of forestry by-products which have not been treated or combined with prohibited substances. Recycled biochar from contaminated remediation sites is prohibited.	•		
Biodegradable plant containers	Biodegradable planting containers (for example, <u>biobased</u> pots or cell packs and <u>paper chain pots</u>) may be left to decompose in the field if all ingredients, <u>including adhesives</u> , are listed in Table 4.2 (Column 1). Paper-based Biodegradable plant containers may (including those that contain incidental formulants ingredients included in PMRA lists 4A and 4B. See ~~not listed in Table 4.2~~) may be used definition of “Biodegradable as ~~compost feedstocks~~ ”.		•	This listing was modified to include details about paper chain pots. These paper-based transplanting aids are not necessarily 100% bio-based. They may contain synthetic ingredients and therefore cannot be left to decompose in the soil. The use of chain pots is permitted, albeit implicitly, under this listing but only if they are removed after use.
Biodynamic preparations for compost, soil and plants	As described in ~~Appendix 10 of the~~ <i>Demeter <u>Biodynamic</u> Production Standards</i> .	•	•	Updated reference.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Biological organisms	~~Biological organisms (living, dead or as extracts), such as viruses, bacteria, protozoa, phages, fungi, insects and nematodes. Pharmaceuticals derived from or by biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides. See Table 4.2 Invertebrates; Microorganisms and microbial products.~~	•	•	This listing has been eliminated because it is now redundant. The dead organisms that had been included in this listing will be addressed under the new Microbial extracts listing, while other organisms and beneficial insects are covered by the Invertebrates listing.
Blood meal	Shall be sterilized.	•		
Bone meal	Shall be guaranteed free of Specified Risk Material (SRM).	•		
Borate (boric acid)	Mined sources of sodium tetraborate and octaborate are permitted as wood preservatives. Permitted for structural pest control (example: for ants). Direct contact with organic food or crops is prohibited in the case of products formulated as pesticides.		•	
Boron	~~The following soluble boron products are permitted:~~ ~~a) borate (boric acid);~~ ~~b) sodium tetraborate (borax and anhydrous); and~~ ~~c) sodium octaborate.~~ <u>Borates including hydrated borates of sodium (octaborate, pentaborate, tetraborate, borax), boric acid, and boron-lignosulphonate complexes (except those containing ammonium lignosulphonate) are permitted when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented</u> <u>Ammonium borates, boron-amino acid and boron potassium nitrate mixes (BKNO₃) are not permitted.</u>	•		The listing has been modified to (1) have a consistent format with other micronutrient listings, (2) include sodium pentaborate which is no worse or better than sodium tetraborate or sodium octaborate, and (3) clearly identify which forms of borates are not permitted.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	See Table 4.2 Micronutrients.			
Botanical pesticides	Botanical pesticides shall be used in conjunction with a biorational pest management program. They shall not be the primary method of pest control. The least toxic botanicals shall be used in the least ecologically disruptive way possible. All label restrictions and directions shall be followed, including restrictions concerning crops, livestock, target pests, safety precautions, pre-harvest intervals and worker re-entry.		•	
<u>Brewers' grains and solubles</u> [NEW]	<u>A by-product or by-products from the production of alcohol by fermenting grain.</u> <u>Shall be from non-GE grain.</u> <u>Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen. Nitrate nitrogen shall not exceed 10% of the total nitrogen.</u> <u>Nitrogen compounds, beyond what is needed for yeast nutrition, may not be added during the fermentation process and they may not be added post fermentation.</u>	•		The listings for Distillers' grains and solubles and Brewers' grains replace the more general listing for Stillage and stillage extract. The annotation indicates acceptable sources, the source and the restriction of GE-grains. The maximum nutrient levels reflect the expected nutrient levels if the substance is unadulterated. These limits serve as criteria to prevent the use of undeclared substances/fraudulent products, thereby ensuring organic integrity.
Calcium	Calcium carbonate (calcitic limestone), calcium magnesium carbonate (dolomitic limestone), calcium silicate, and calcium sulphate (gypsum), all from mined sources. Other biological or mineral sources, such as shells from aquatic animals (for example, oyster shell flour), aragonite, eggshell meal and lime from sugar processing.	•		The reference to "chemically treated" has been removed from the annotation regarding "calcium chloride from naturally occurring brines" to avoid confusion and because it was redundant with Clause 4.1.3, which states that, "substances listed in Table 4.2 shall comply with prohibitions in 1.4 and 1.5 of CAN/CGSB-32.310".

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	Calcium chloride derived from naturally occurring brines ~~and not chemically treated~~. <u>May be chelated with substances listed under Table 4.2 Chelates.</u> Prohibited forms include slaked limestone (calcium hydroxide); quicklime (calcium oxide); calcium sulphate produced using sulphuric acid and calcium products that have been used in controlled atmosphere storage. See Table 4.2 Calcium sulphate (gypsum) for additional restrictions on this substance.			The Calcium listing was modified (regarding chelates) to ensure further scrutiny when approving products chelated with other substances listed in Table 4.2. Certain calcium products claim chelation with amino acids. Calcium chelated with hydrolyzed proteins of animal or plant origin (which replace the Amino acids listing) will only be permitted if it meets the maximum nutrient requirements of hydrolyzed proteins.
Calcium lignin sulphonate	See Table 4.2 Lignin and lignin sulphonates (lignosulphonates)	•	•	
Calcium polysulphide	See Table 4.2 Lime sulphur.		•	
Calcium sulphate (gypsum)	Mined sources are allowed; calcium sulphate produced using sulphuric acid is prohibited. To correct calcium and sulphur deficiencies and soil salinity problems.	•		
Cannery wastes	Shall be from organic sources. Non-organic cannery wastes shall be composted. See Table 4.2 Compost feedstocks.	•		
Carbon dioxide (CO ₂)	For soil and greenhouse use, for controlled atmosphere storage, and for storage pest control.		•	
Cardboard	Cardboard shall not be waxed or impregnated with fungicide or prohibited substances.	•	•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	For use as mulch, as composting feedstock or as pest trapping material. See Table 4.2 Compost feedstocks.			
Chelates	~~Chelating agents that are listed in Table 4.2 (Column 2) are permitted. Examples include Acetic acid; Ascorbic acid; Citric acid; Humates; Lignin and lignin sulphonates (lignosulphonates) and Vinegar.~~ <u>The following acids may be used to chelate metallic or metalloid nutrient elements listed in Table 4.2: Acetic (including vinegar), Ascorbic, Citric, Humic, Fulvic, and Lignosulphonic.</u>	•	•	The 2020 COS permitted all substances listed in Table 4.2, Column 2 to be used as chelating agents, including PMRA list 4 formulants such as EDTA. The annotation now identifies the most common chelating agents (acids) used in fertilizers that would be approved for organic use. Amino acids were removed from the list to prevent potential misuse of micronutrient fertilizers chelated with amino acids. Chelation with amino acids results in liquid fertilizers with high levels of nitrogen (6% or more), which provides the opportunity for potential misuse as a source of liquid N (coupled with potential excess application of micronutrients). As the term 'chelate' may be unfamiliar to many, the wording, “acids may be used to chelate metallic nutrient elements” was added to emphasize that chelation is the double bonding of a metal ion with a ligand (chelating agent).
[NEW] Chitosan	<u>Including chitosan hydrochloride and chitosan oligosaccharides (COS).</u>	•	•	The substance was added because (1) it is a derivative of a natural product, (2) it has a low environmental impact, and (3) acts as crop protectant stimulating the plant's natural defenses and inhibiting the growth of fungi.

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Cholecalciferol (vitamin D ₃)	Permitted if used outdoors and inside greenhouses for rodent control when methods described in 5.6.1 of CAN/CGSB-32.310 have failed. Prohibited inside on-farm food processing and food storage facilities.		•	
Citric acid			•	
Clay	Bentonite, perlite and kaolin as soil amendments, as seed pellet additives or for pest control. See Table 4.2 Mined minerals, unprocessed; Bentonite; Kaolin clay.	•	•	
[NEW] Cobalt	<u>Sulphates, carbonates, oxides and chlorides of cobalt are permitted when soil deficiencies are documented by testing soil or plant tissue, or when the needs of soil microorganisms or livestock can be documented.</u> <u>May be chelated with substances listed under Table 4.2 Chelates.</u> <u>Nitrates and amino acid chelates are not permitted.</u> <u>Shall be used with caution to prevent excessive cobalt accumulation.</u> <u>Cobalt build-up in soil shall prohibit future use.</u>	•		Cobalt is a beneficial micronutrient and should be permitted under certain conditions as outlined in the annotation. See also rationale for Micronutrients.
[NEW] Coir (coconut fiber)	<u>Washed, processed and/or buffered (to adjust pH) with substances listed in Table 4.2 (Column 1 or Column 2) excluding Formulants used in crop production aids.</u>		•	A separate listing for coir (coconut fibre) has been created because coir is an important substrate/growth medium for the organic sector and warrants its own listing. Currently, coir is assumed to fall under the "Plant by-products and plants" listing but without specific mention, approval can be challenged since plant by-products that have been treated or produced with prohibited substances are

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
				only permitted as compost feedstocks. The annotation includes details on what coir treatments are permitted. See Coir at https://mailchi.mp/organicfederation/some-modifications
Compost	Compost produced on the farm is restricted to compost produced on a certified organic farm. Compost from off-farm sources includes every other source, for example: municipal, residential or industrial sources, or from any organic or non-organic farm. See Table 4.2 Compost from off-farm sources; Compost produced on the farm; Compost tea; and Compost feedstocks. For information on compost starters, see Table 4.2 Microorganisms and microbial products. For information on vermicompost, see Table 4.2 Worm castings.	•		
Compost feedstocks	Acceptable feedstocks include: a) animal manures conforming to criteria specified in 5.5.1 of CAN/CGSB-32.310; b) animals, animal products and by-products (including fishery); c) plants and plant by-products (including forestry and source-separated yard debris, such as grass clippings and leaves), pomaces and cannery wastes; d) soils and minerals that conform to the requirements of this standard and of CAN/CGSB-32.310; and e) paper yard waste bags which contain coloured ink; <u>and</u> <u>f) anaerobic digestate that conforms to the requirements of this standard.</u>	•		The annotation was expanded to provide more clarity.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>Substances listed in Table 4.2 (Column 1) are permitted in compost feedstocks when they meet the annotations therein.</u> When evidence indicates that compost feedstocks could contain a substance or substances prohibited by 1.4 or 1.5 of CAN/CGSB-32.310 that is known to be potentially persistent in compost, <u>testing before using the compost, compost test results shall be provided indicating no presence of the compost before use is required</u> prohibited substance or a reference to scientific literature <u>which that</u> establishes that the specific potential contaminant(s) will degrade during the composting process. The following composting feedstocks are prohibited: sewage sludge; compost starter and feedstocks fortified with substances not included in this standard; leather by-products; glossy paper; waxed cardboard; paper containing coloured ink other than paper yard waste bags; and animals, animal products and animal by-products not guaranteed free of Specified Risk Material (SRM).			
Compost from off-farm sources	Compost obtained from off-farm sources shall conform to the criteria specified in Table 4.2 Compost feedstocks. If compost is obtained from another farm, feedstock sources shall be documented. Compost obtained from all other sources shall comply to the following: a) shall not exceed the maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>; b) shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>; and	•		

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	c) shall not cause heavy metal buildup in soil.			
Compost produced on the farm	Compost produced on the farm shall conform to the criteria specified in Table 4.2 Compost feedstocks. In addition, if made from animal manures or other likely sources of human pathogens, compost produced on the farm shall: a) reach a temperature of 55 °C (130 °F) for a period of four consecutive days or more. The compost piles shall be mixed or managed to ensure that all of the feedstock heats up to the required temperature for the minimum time; or b) meet limits for acceptable levels (Most Probable Number of total solids per gram [MPN/g total solids]) of human pathogens specified in <i>Guidelines for Compost Quality</i>; or c) be considered as aged or raw manure rather than compost, that is, meeting requirements specified in <u>subclause</u> 5.5.2.5 of CAN/CGSB-32.310.	•		
Compost tea	Compost tea shall be made from composts that conform to criteria specified in Table 4.2 Compost produced on the farm; Compost from off-farm sources; or Worm castings. Additional ingredients shall be listed in Table 4.2 (Column 1). If compost tea is applied directly to the edible parts of plants, the operator shall be able to demonstrate that best practices known to eliminate pathogens during the processing have been used OR that the requirements for raw manure, as specified in <u>subclause</u> 5.5.2.5 of CAN/CGSB-32.310, have been met.	•	•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	See the <i>Compost tea</i> definition in clause 3 of CAN/CGSB-32.310.			
[NEW] <u>Condensed molasses fermentation solubles (Vinasse)</u>	<u>A by-product from the fermentation of cane, beet or agave sugar and/or their respective molasses.</u> <u>Shall be from non-GE feedstock.</u> <u>Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis).</u> <u>Additional Nitrogen compounds may not be added post fermentation.</u>	•		See rationale for Brewers' grains and solubles. .
Copper (plant nutrition)	~~The following copper products may be used to correct documented copper deficiencies: copper sulphate, basic copper sulphate, copper oxide and copper oxysulphate.~~ ~~Copper ammonia base, copper ammonium carbonate, copper nitrate and cuprous chloride are prohibited.~~ <u>Sulphates, carbonates, oxides and oxysulphates of copper may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented.</u> <u>May be chelated with substances listed under Table 4.2 Chelates.</u> <u>Nitrates, chlorides, hydroxides, amino acid chelates and ammonia-copper complexes are not permitted.</u>	•		The annotation has been modified to have a consistent format with other micronutrient annotations, including expanding the requirement to demonstrate soil deficiency. The annotation specifies which chelates are permitted and which forms of copper are not permitted. The oxysulphate form of copper is now included to be consistent with other micronutrient listings.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build-up in soil shall prohibit future use. Visible residue of copper products on harvested crops is prohibited. ~~See Table 4.2 Micronutrients.~~			
Copper (production aid)	Copper sulphate, copper hydroxide, copper octanoate, Bordeaux mix, copper oxychloride and copper oxide. Permitted for use as a wood preservative, or for controlling pests, including diseases. Shall be used with caution to prevent excessive copper accumulation in the soil. Copper build-up in soil shall prohibit future use. No residues of copper products shall be visible on harvested crops.		•	
Diatomaceous earth	Non-calcined forms. May contain substances listed in Table 4.2 (Column 2).		•	
Digestate, anaerobic	Permitted to be used for soil amendment, provided that the following conditions are met: a) the materials added to the digester shall be listed in Table 4.2 (Column 1). ~~If~~ <u>or permitted by Compost</u> feedstocks ~~are obtained from off-farm sources, ;~~ b) <u>nutrients, vitamins and trace minerals other than nitrogen and phosphorus may be supplemented (in amounts needed for optimal metabolic performance of the digestate digester) without restriction;</u>	•		Anaerobic digestate is a by-product of waste treatment for biogas production. Depending on the feedstocks and in order to facilitate optimal digestion, nutrients may be added during the process. These nutrients, vitamins and trace minerals may be used as needed without restriction.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	b) ~~the criteria for the application of raw manure on land specified in 5.5.2 of CAN/CGSB-32.310 shall be met if the digestate feedstocks include manure;~~ c) ~~shall comply with the heavy metal restrictions in Table 4.2 Compost from off-farm sources;~~ <u>not exceed maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>; and</u> d) <u>shall meet the criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i> or the criteria for the application of raw manure on land specified in 5.5.2 of CAN/CGSB-32.310 shall be met if feedstock include manure;</u> <u>When digestate feedstocks could contain a substance or substances prohibited by Clauses 1.4 or 1.5 of CAN/CGSB-32.310 that is potentially persistent, before using the anaerobic digestate, test results shall be provided indicating no presence of the prohibited substance or a reference to scientific literature that establishes that the specific potential contaminant(s) will degrade during the digestion process.</u> <u>It is permitted to use anaerobic digestate as a compost feedstock if it is added to other substances which are then composted. See Table 4.2 Compost feedstocks.</u>			
[NEW] <u>Distillers' grains and solubles</u>	<u>A by-product or by-products from the production of alcohol by fermenting grain.</u> <u>Shall be from non-GE grain.</u>	•		See rationale for Brewers' grains and solubles.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>Shall not contain more than 7% total nitrogen (dry basis). Ammonium nitrogen shall not exceed 15% of the total nitrogen (dry basis). Nitrate nitrogen shall not exceed 10% of the total nitrogen (dry basis).</u> <u>Nitrogen compounds, beyond what is needed for yeast nutrition, may not be added during the fermentation process and they may not be added post fermentation.</u>			
Dormant oils	For use as a dormant spray on woody plants. Shall not be used as a dust suppressant.		•	
Dust suppressants	Vegetable oils, organic molasses or substances listed in Table 4.2 (Column 1 or 2) ~~for example: Lignin and lignin sulphonates (lignosulphonates)~~ are permitted, <u>for example: Lignin and lignin sulphonates (lignosulphonates)</u>, excluding Formulants used in crop production aids. Petroleum products are prohibited.	•	•	Reorganized text for clarity.
Enzymes	~~Derived~~ <u>Originating</u> from plants, animals or microorganisms ~~through the action of microorganisms.~~	•	•	The term "through the action of microorganisms" was removed because it was redundant, confusing, and unnecessarily excluded enzymes extracted from plants.
Extractants	The following may be used as extractants: a) water; b) culinary steam, as described in 8.1.2 b) of CAN/CGSB-32.310; c) fats and oils, such as cocoa butter, vegetable oils, lanolin and animal fats, and alcohols other than isopropyl alcohol; d) supercritical CO₂; and	•	•	

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	e) substances listed in Table 4.2 (Column 1 or 2) except for Formulants used in crop production aids.			
Feather meal		•		
Ferric phosphate (iron ortho-phosphate, iron phosphate)	Permitted as a molluscicide (for slug and snail control). Shall be used in such a manner that runoff into water bodies is prevented. Contact with crops is prohibited.		•	
Fibre row covers	Shall not be incorporated into the soil or left in the field to decompose; shall be removed at the end of the growing season.		•	
Fish products	The following fish products are permitted: fish meal; fish powder; fish farm wastes and hydrolysate, emulsions and solubles. Fish farm wastes shall be composted. Only substances listed in Column 1 or 2 of Table 4.2 can be added to fish products with the exception that the addition of Formulants used in crop production aids is prohibited. Chemical treatment is prohibited, with the exception of the following substances which are in preferential order: a) vinegar; b) citric acid; c) phosphoric acid; or d) sulphuric acid. The amount of acid used shall not exceed the minimum needed to stabilize the product.	•		

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Formulants used in soil amendments	~~Formulants used in soil amendments~~ Shall be derived from biological or mineral sources unless a substance annotation allows the use of a specified formulant. ~~For example, see Table 4.2 Aquatic plants and plant products; Fish products; Humates, humic acid and fulvic acid.~~ <u>Substances listed elsewhere in Table 4.2 (Column 1) and used as formulants in soil amendments are subject to the annotations therein.</u>	•		The annotation clarifies that a formulant is permitted for its functional effect on the substance and not permitted as an active ingredient, thereby discouraging the misuse of formulants as a nutrient source. The new definition for "Derived from biological or mineral sources" will further clarify that formulants cannot be new compounds synthesized from biological or mineral sources, but can only be isolated or extracted from these sources.
Formulants used in crop production aids	Formulants used in crop production aids may only be used with substances listed in Column 2 of this table. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or derived from biological or mineral sources may be used with substances in Table 4.2 (Column 2). Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.		•	
[NEW] Frass	<u>A by-product of insect farming. Shall be from an organic source if commercially available.</u>	•		Frass was added because it is becoming a readily available soil amendment which is similar, but not identical, to animal manure.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Guano	~~Shall be decomposed, dried deposits from wild bats or birds.~~ ~~Domesticated fowl excrement is considered to be Manure, not Guano.~~	•		There are two types of guano in the global marketplace; fresh (a source of nitrogen and phosphorus) and fossilized or mineralized (a source of phosphorus). Some mineralized phosphorus products may actually be fossilized from guano; however, many are indistinguishable from phosphate rock. There are several potential negative consequences to using guano: (1) toxic metals may accumulate in the soil, (2) the guano may contain fungal or viral pathogens, which may pose a health risk to guano harvesters and farmers using guano, (3) harvesting may pose an ecological threat to bats or seabirds. Furthermore, CFIA does not permit guano to be imported into Canada as a fertilizer. Even if the guano is fossilized, these issues may be a concern if the mine is near an active bat or seabird colony. See Guano: organic fertilizer or trigger for war and pandemics? at https://mailchi.mp/organicfederation/guano .
Growth regulators for plants	Plant hormones, such as gibberellic acid, indoleacetic acid and cytokinins, derived from terrestrial or aquatic plants or produced by microorganisms.		•	
Homeopathic preparations			•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Hormones	See Table 4.2 Growth regulators for plants.		•	
Humates, humic acid and fulvic acid	Permitted if mined; produced through microbial activity; extracted by physical processes; or with: a) Table 4.2 Extractants; or b) potassium hydroxide—potassium hydroxide levels used in the extraction process shall not exceed the amount required for extraction. Levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury shall not exceed the limits (category C1) specified in <i>Guidelines for the Beneficial Use of Fertilising Residuals</i> . Shall not cause a build-up of heavy metals or micronutrients in soil.	•		
Hydrated lime (calcium hydroxide)	For plant disease control.		•	
Hydrogen peroxide			•	
[NEW] <u>Hydrolyzed proteins of plant origin</u>	<u>Resulting from enzymatic hydrolysis (in conjunction with physical processes).</u> <u>Shall not contain more than 0.3% hydroxyproline (as a percentage of total amino acids). Shall not contain more than 15% N (dry basis). At least 90% of the total nitrogen shall be organic (protein) nitrogen. Isolated amino acids such as glycine, lysine and methionine are prohibited. Nitrogen compounds may not be added during hydrolysis.</u>	•		"Hydrolyzed proteins of plant origin" and "Hydrolyzed proteins of animal origin" replace "Amino acids". Both annotations contain content restrictions that reflect nutrient levels in unadulterated products. The criteria serve as a tool for assessing compliance and preventing undeclared substances/fraudulent products, thereby ensuring organic integrity.
[NEW] <u>Hydrolyzed</u>	<u>Resulting from enzymatic hydrolysis (in conjunction with physical processes).</u>	•		

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
<u>proteins of animal origin</u>	<u>Shall not be applied to the edible portion of crops. Shall not contain more than 17% N (dry basis). At least 90% of the total nitrogen shall be organic (protein) nitrogen. Isolated amino acids such as glycine, lysine and methionine are prohibited. Nitrogen compounds may not be added during hydrolysis.</u>			Differentiating between plant-origin and animal-origin hydrolyzed proteins will add clarity to further deter fraudulent claims of plant vs animal origin. Limitation on the hydroxyproline content (prevalent in mammalian collagen) will allow for verification of origin of protein. Higher levels indicate animal origin. Limiting nitrogen content will discourage fraudulent claims and allow for verification of acceptable processing (enzyme hydrolyzed) while higher concentrations would be the result of acid hydrolysis and possible addition of ammonium sulphate. The nitrogen concentrations are based on data from tested products. Lastly, restricting the application of animal-origin hydrolyzed proteins to the edible portion of crops will help safeguard against health issues and maintain the vegetarian status of the food.
Inoculants	See Table 4.2 Microorganisms and microbial products.	•		
Invertebrates	Worms, insects (including sterile insects), nematodes, arthropods and other invertebrates. See Table 4.2 Worm castings; Shells from aquatic animals.	•	•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Iron	~~The following sources of iron are permitted to correct documented iron deficiencies: ferric oxide, iron citrate, iron sulphate (ferric or ferrous) or iron tartrate.~~ <u>Sulphates, carbonates, chlorides, oxides, oxysulphates, citrates, tartrates or permitted chelates of iron may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented.</u> <u>May be chelated with substances listed under Table 4.2 Chelates.</u> <u>Iron chloride may be used to prevent loss of phosphorus in soils prone to flooding.</u> <u>Nitrates, amino acid chelates and ammonia-iron complexes are not permitted.</u> <u>See Table 4.2 Micronutrients.</u>	•		The annotation has been modified to have a consistent format with other micronutrients. Iron chloride is permitted for flood-prone land. With climate change and the increasing frequency of extreme weather events causing flooding, allowing its use will prevent the loss of phosphorus, an essential nutrient which is in finite supply.
Kaolin clay	May be calcined. Shall not be processed or fortified with substances unless listed in Table 4.2 (Column 2).		•	
Kelp and kelp products	See Table 4.2 Aquatic plants and aquatic plant products.	•	•	
Leaf mould		•		
Lignin and lignin sulphonates (ligno-sulphonates)	~~Permitted as chelating agent(s), as formulant ingredient(s) such as-~~ <u>chelating agents(s), binding agent(s), and as dust suppressant(s).</u> Ammonium lignosulphonate is prohibited.	•	•	The permitted uses have been reorganized. Binding agent was added as an example to clarify that its use is permitted.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	Other lignin forms such as lignosulphonic acid, calcium lignosulphonate, magnesium lignosulphonate, sodium lignin and sodium lignosulphonate are permitted.			
Lime sulphur (calcium polysulphide)	Permitted on plants as: a) a fungicide; b) an insecticide; and c) an acaricide (mite control).		•	
Limestone	Mined magnesium and calcium carbonates. See Table 4.2 Calcium.	•		
Magnesium	The following sources are permitted: a) mined magnesium rock; b) magnesium chloride derived from natural brines and not chemically treated; c) mined calcium magnesium carbonate (dolomitic limestone) that has not been slaked; d) potassium magnesium sulphate (langbeinite); e) magnesium sulphate (kieserite or Epsom salts) may be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil or plant tissue, or when the need for a preventative application is documented.	•		
Manganese	~~Manganous oxide and manganese sulphate are permitted to correct a documented manganese deficiency.~~ <u>Sulphates, oxides, oxysulphates, carbonates, chlorides, citrates, tartrates or permitted chelates of manganese may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented.</u> <u>May be chelated with substances listed under Table 4.2 Chelates.</u>	•		The annotation has been modified to have a consistent format with other micronutrients and to provide more details.

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>Nitrates, amino acid chelates, and ammonia-manganese complexes are not permitted.</u> See Table 4.2 Micronutrients.			
Manure, composted	See Table 4.2 Compost. See also Table 4.2 Animal manure and Animal manure, processed.	•		The annotations "Manure, non-organic source" and "Manure, composted" have been eliminated from Table 4.2 because they were redundant and already covered by (1) the Compost feedstock annotation in Table 4.2, which lists manure as an acceptable feedstock, and (2) the reference to non-organic manure as permitted by CAN /CGSB 32.310: 5.5.1.1. These annotations were also redundant with "Animal, manure." The requirements of manure are addressed in "Animal Manure, unprocessed" and "Animal manure, dried."
Manure, non-organic manure source	See 5.5 of CAN/CGSB 32.310. See also Table 4.2 Animal manure and Animal manure, processed.	•		
Meat meal	Shall be processed by drying or heat sterilization or composted.	•		
[NEW] <u>Microbial extracts</u>	<u>Extracts of microorganisms (viruses, bacteria, protozoa, phages, and fungi) such as spinosad. Products may contain dead microorganisms and substances in Table 4.2 (Column 1 or 2).</u> <u>If the growth substrate includes substances not listed in Table 4.2 column 1, the growth substances (substrate) shall not be present in the final product, or be present at levels which have no material functional effect. Sewage</u>		•	This substance was added to permit substances extracted from dead microorganisms. These extracts had been included under the Microorganisms and microbial products, which has been modified to include only live, purposefully grown microbial products while excluding microbial extracts and microbial fertilizers.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2 Column 1.</u> <u>Pharmaceuticals derived from biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides.</u> <u>Does not include nutrient extracts such as nitrogen extracted from microorganisms.</u> <u>See Table 4.2 Microorganisms and microbial products and Microbial fertilizers.</u>			
[NEW] <u>Microbial fertilizers</u>	<u>Microbial biomass that is the by-product of food processing. Examples include bacterial biomass and yeast press cake.</u> <u>If the growth substrate includes substances not listed in Table 4.2 (Column 1), the growth substances (substrate) shall not be present in the final product, or be present at levels that have no material functional effect.</u> <u>Sewage sludge is prohibited. Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2 (Column 1).</u> <u>Shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in Guidelines for the Beneficial Use of Fertilizing Residuals. Shall not cause a build-up of heavy metals or micronutrients in the soil.</u> <u>Does not include substances extracted from microorganisms or produced by fermentation.</u> <u>See Table 4.2 Microbial extracts and Microorganisms and microbial</u>	•		This substance was added to separate microbial fertilizers from the microorganisms and microbial products in general since microbial fertilizers have a much different use and origin than their crop aid counterparts. The source of the fertilizers has been restricted to by-products of food production wastewater treatment; this excludes microbial fertilizers that were grown by using synthetic fertilizers and/or other growth substances to increase the nutrient content of the final product (i.e., the microbial fertilizer). The annotation limits the level of growth substances to what is needed to grow and support the microbial biomass. These growth substances and

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>products.</u>			their presence in the microbial fertilizer are restricted to only ineffectual levels.
Microorganisms and microbial products	<u>Living ~~Microorganisms~~, such as viruses, bacteria, protozoa, phages, and fungi, are permitted living, dead or as extracts.</u> Microbial products may contain substances in Table 4.2 (Column 1 or 2). Examples include the following: rhizobium bacteria; mycorrhizal fungi; azolla; yeast; Bacillus thuringiensis; virus and virus sprays (e.g., granulosis); and spinosad. <u>If the growth substrate includes substances not listed in Table 4.2, the growth substances (substrate) shall not be present in the final product, or be at levels which have no material functional effect. Sewage sludge is prohibited.</u> <u>Carriers or substances added to or expected to be present in the final product shall be listed in Table 4.2.</u> ~~Microbial fertilizers or microbial soil amendments derived from substances that cannot be verified or are derived from materials not listed in Table 4.2 (Column 1 or 2), may be used with the exception of municipal sewage sludge, which is prohibited.~~ ~~When used, microbial fertilizers shall not exceed the limits (category C1) for acceptable levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury, as specified in Guidelines for the Beneficial Use of Fertilising Residuals. Shall not cause a build-up of heavy metals or micronutrients in the soil.~~	•	•	This listing has been modified to only include products from live microorganisms while excluding products/extracts from dead microorganisms and microbial fertilizers.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	Ionizing radiation is permitted for use on a peat moss carrier before the addition of microbial inoculants. Radiation is otherwise prohibited. Pharmaceuticals made from biological sources, such as natamycin, penicillin and streptomycin, are prohibited even if registered as pesticides. <u>See Table 4.2 Microbial extracts and Microbial fertilizers.</u>			
Micronutrients	~~Plant micronutrients (trace elements) are Iron, Manganese, Zinc, Copper, Molybdenum, Boron, Chlorine and Silicon.~~ ~~Micronutrient fertilizers may only be used when soil and plant deficiencies are documented by visual symptoms or by testing of soil or plant tissue, or when the need for a preventative application can be documented.~~ ~~Chelation with substances listed under Table 4.2 Chelates is permitted.~~ ~~EDTA, DTPA, EDDHA, nitrate and ammonium forms of micronutrients are prohibited.~~ ~~See specific annotations for Boron; Silicon; Copper; Iron; Manganese; Molybdenum and Zinc in Table 4.2.~~	•		This listing has been replaced by individual micronutrient listings to avoid confusion and to provide specific details about different micronutrients. The Micronutrients listing was general in nature and permitted any micronutrients until COS 2020 when a definitive list of plant essential nutrients was embedded in the annotation. As an unintended result, beneficial micronutrients, which had been permitted under the general Micronutrients listing before 2020, were no longer permitted unless they were listed specifically in Table 4.2.
Milk and milk by-products		•	•	
Mined minerals, unprocessed	Mined minerals include basalt, pumice, sand, feldspar, mica, granite dust and unprocessed rock dust. Minerals extracted from seawater are permitted. To be allowed as a mined mineral, the product shall not have undergone any change in its	•		The annotation has been modified to clarify that sodium nitrate is prohibited (and not just sodium nitrate mixed with petroleum products). See details re: Chilean nitrate (which is not permitted) at

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	molecular structure through heating, processing, ion exchange or combining with other substances. ~~Sodium nitrate and rock dust that have been mixed with petroleum products, such as those from stone engraving, are prohibited.~~ ~~Sodium nitrate Rock dust that have been mixed~~ mixed with petroleum products, such as those from stone engraving, <u>is prohibited.</u> See annotations for specific minerals in Table 4.2 (Column 1).			https://mailchi.mp/organicfederation/review-rejectedpetition.s
Molasses	Shall be organic.	•		
Molybdenum	~~To correct documented molybdenum deficiencies.~~ <u>Sodium molybdate and molybdenum trioxide may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented.</u> <u>May be chelated with substances listed under Table 4.2 Chelates.</u> <u>Ammonium molybdate and amino acid chelates/complexes are not permitted.</u> ~~See Table 4.2 Micronutrients.~~	•		The listing has been modified to have a consistent format with other micronutrient listings including expanding the requirement to demonstrate soil deficiency. It now identifies the specific sources and forms of the micronutrient that are not permitted.
Mulches	Biological materials from organic sources are permitted (e.g., straw, leaves, grass clippings, hay, wool or untreated burlap). If organic materials are not commercially available, non-organic, non-genetically engineered sources may be used provided that prohibited substances have not been used on these materials for at least 60 days before harvest.	•	•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	Prohibited mulch material includes, but is not limited to, sawdust, wood chips, bark and shavings that is treated or processed with Formulants used in crop production aids or with substances, such as herbicides, preservatives and glues, not listed in Table 4.2 (Column 1 or 2). Newspaper and paper mulch are permitted; glossy paper and coloured ink are prohibited. Plastic mulches: Non-biodegradable and semi-biodegradable materials shall not be incorporated into the soil or left in the field to decompose. Use of polyvinyl chloride as plastic mulch or row cover is prohibited. Biodegradable mulches: 100% of biodegradable mulch films shall be derived from bio-based sources. Formulants or ingredients shall be listed in Table 4.2 (Column 1 or 2). Biodegradable polymers and Carbon Black from GE or petroleum sources are not permitted.			
Mushroom compost	See Table 4.2 Compost.	•		
[NEW] Ozonated water	<u>Water saturated with ozone gas.</u> <u>For control of microbial pathogens in crops as a foliar application.</u> <u>Neither the ozonated water nor the gas is permitted for the control of weeds or soil fumigation.</u>		•	Ozonated water was added because it has been shown to be effective for the control of powdery mildew and has a low environmental risk. It degrades to oxygen with no residues or negative impact to the environment.
Nitrogen gas	For controlled atmosphere storage.		•	
Non-ionizing radiation	May be used to manage pest load		•	The definition of irradiation in CAN/CGSB-32.310 (Clause 3) is being updated to clearly distinguish between ionizing and

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
				non-ionizing radiation by specifying the wavelength threshold where ionizing radiation begins. Ionizing radiation, which alters DNA or chemical structure, remains prohibited. At the same time, this standard explicitly recognizes that non-ionizing technologies, such as ultraviolet (UV) treatments, can be used for pest and pathogen management on crops and food-contact surfaces. This improved clarity will help address ambiguities and ensure precise understanding of the use of these radiation technologies permitted within organic production.
Oilseed meals	Shall be organic if commercially available.	•		
Oxygen	For controlled atmosphere storage.		•	
Peat moss		•		
Peracetic (peroxyacetic) acid	Formulations of peracetic acid may include unreacted residual reagents and catalysts, such as hydrogen peroxide, acetic acid and sulphuric acid. Permitted for: a) pest control; and b) disinfecting and cleaning seeds and plant stock. See Table 7.3.		•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Pheromones and other semiochemicals	All sources are permitted. For pest control.		•	
Phosphate rock	May be fortified or processed with substances listed in Table 4.2 (Column 1) <u>with the exception that treatment with acid prior to application is not permitted.</u> Cadmium shall not exceed 90 mg/kg P ₂ O ₅ .	•		The use of soluble nutrients is contrary to soil building as the foundation of nutrient management. The listing has been modified to eliminate treatment with acid which causes a chemical reaction that renders the macronutrient soluble. See “Phosphorus on organic farms: from struvite to peecycling” https://mailchi.mp/organicfederation/phosphorestruvite-11037816
Plant extracts, oils and preparations	Permitted extractants include fats and oils (such as cocoa butter, lanolin and animal fats); alcohols; water; or substances listed on Table 4.2 (Column 2) other than Formulants used in crop production aids. Extraction with other solvents is prohibited except with, in order of preference: a) potassium hydroxide; or b) sodium hydroxide; provided the amount of solvent used does not exceed the amount necessary for extraction. The operator shall provide an affidavit from the manufacturer that proves the need to use sodium hydroxide. For control of pests (e.g., diseases, weeds and insects). ~~Clove oil is permitted for sprout inhibition in potatoes.~~ <u>Plant oil, such as clove or mint oil is permitted for sprout inhibition in potatoes. See Table 8.3 Botanical oils.</u>		•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Plant material by-products and plants	~~Includes plant preparations of aquatic~~ Aquatic or terrestrial plants or parts of plants, such as plant biomass including cover crops, green manures, crop wastes, hay, straw, leaves, peat, forestry by-products, hulls and straw. ~~Parts of plants used as soil amendments and foliar feeds are grain screenings.~~ <u>Does not include plant-based food products or by-products of food processing, fermentation or chemical treatment, such as corn steep liquor or concentrated nutrient extracts. However, certain products may be permitted under separate listings in Table 4.2; see Oilseed meal, Plant extracts, oils and preparations, Molasses, Pomaces, Cannery waste, Lignin and lignin sulphonates, etc.</u> Wastes from crops that have been treated or produced with prohibited substances are permitted as compost feedstocks-<u>only (subject to Compost feedstock restrictions).</u> ~~For processing of plant by products, see Table 4.2 Extractants.~~ Prohibited ~~substances~~ plant materials include sawdust, wood chips, bark and shavings that are treated or processed with Formulants used in crop production aids or with substances, such as herbicides, preservatives and glues, not listed in Table 4.2 (Column 1 or 2).	•		The 2020 "Plant by-products and plants" listing in Table 4.2 is ambiguous and unintentionally may have permitted the use of various processed plant by-products. The listing is intended to refer to simple crop/plant materials NOT processed products. The word "by-products" was removed from the substance name and the annotation revised to provide more clarity. No change was made to the restriction that crop wastes need to be composted if treated or produced with prohibited substances.
Plant protectants	Mineral and biological substances including, but not limited to: calcium carbonate (from chalk, limestone, etc.); diatomaceous earth; kaolin clay; pine oil; pine resin; and yucca. White wash (solution of hydrated limestone) is permitted for use on trees to protect against sunburn and southwest disease.		•	

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	Permitted to protect plants from harsh environmental conditions (such as frost and sunburn), infection, the build-up of dirt on leaf surfaces, or injury by an invertebrate pest or disease.			
Plastic for row covers and solarization	Non-biodegradable and semi-biodegradable materials shall not be incorporated into the soil or left in the field to decompose. Use of polyvinyl chloride as plastic mulch or row cover is prohibited.		•	
[NEW] <u>Polyoxin D zinc salt</u>			•	The substance was added because it is a crop protectant (anti-fungal agent) which has a low environmental impact.
Pomaces	Feedstocks shall be from organically grown fruits or vegetables. Non-organic pomaces shall be composted. See Table 4.2 Compost feedstocks.	•		
Potassium	The following potassium sources are permitted: a) mined potassium magnesium sulphate (langbeinite) and mined potassium magnesium chlorides (sylvinite and kainite); b) potassium rock powder—includes basalt, biotite, mica, feldspar, granite, glauconite and greensand; c) potassium chloride—muriate of potash or rock potash. The use of potassium chloride shall not cause salt build-up in soil through repeated application; d) potassium sulphate—shall be produced by evaporating brines from seabed deposits or combining mined minerals using ion exchange. Potassium sulphate made using sulphuric acid as a reactant is prohibited.	•		
Potassium bicarbonate	For pest and disease control for crops grown in greenhouses and other structures, and for other crops.		•	

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Pyrethrum	May be combined with Formulants used in crop production aids. See Table 4.2 Botanical pesticides for restrictions.		•	
Quicklime (calcium oxide)	Shall not be used as a fertilizer or as a soil amendment.		•	
Repellents	Shall be derived from biological sources, such as sterilized blood meal, rotten eggs, hair or predator scents. May contain substances listed in Table 4.2 Column 2.		•	
Salt	Sodium chloride, calcium chloride or potassium chloride; shall be mined or derived from sources of natural brine. The effluent from ion exchange water softener regeneration may be used. For pest control.		•	
Seaweed and seaweed products	See Table 4.2 Aquatic plants and aquatic plant products.	•	•	
[NEW] Seed lubricant	<u>Talc and graphite are permitted and other substances listed in Table 4.2 (columns 1 and 2).</u> :		•	Graphite and/or talc-based seed lubricants are dry lubricants that are needed in the operation of seeders and are currently approved via the 'Mined minerals, unprocessed' listing. Creating a specific listing clarifies the fact that these seed lubricants are permitted. Although some graphite used in seed lubricants could be derived from recycling of graphite in electrodes, the contamination risk is inconsequential.
Seed treatments	Includes microbial products, kelp, yucca, gypsum, clays and botanicals.		•	The listing was modified to permit sodium chloride as a disinfectant for seed

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	May contain substances listed in Table 4.2 (Column 1 or 2) or Table 7.3. See Table 4.2 Peracetic Acid; Treated Seeds and refer to subclause 5.3.2 of CAN/CGSB-32.310. <u>Sodium hypochlorite 2.5 % solution may be used to disinfect Solanaceae seeds.</u>			threatened by the Tomato Rough Brown Fruit Virus, which can affect all members of the Solanaceae family.
[NEW] <u>Selenium</u>	<u>Sodium selenate and sodium selenite may be used when: (1) soil and plant deficiencies are documented by visual symptoms, (2) testing of soil or plant tissue indicates deficiencies, or (3) when the need for a preventative application to maintain plant, animal or human health can be documented.</u>	•		The Micronutrients listing prior to 2020 permitted both selenium and cobalt. COS 2020 added a definitive list of plant essential nutrients eliminating the use of both of these beneficial micronutrients. The list of micronutrients has been replaced by individual listings.
Shell from aquatic animals	Includes chitin.	•	•	
<u>Silicic acids, including potassium and sodium salts of silicic acid</u> <u>Silicon, silica and silicates</u>	<u>Includes potassium and sodium silicates (and associated hydrates) and silicic acids such as monosilicic acid. May be pH adjusted with sodium or potassium hydroxide, or with acids listed in Table 4.2. Formulations shall not contain more than 0.1% P₂O₅ (dry basis) and not more than 0.1% N (dry basis).</u> <u>For unprocessed silicon minerals, such as Wollastonite, see Table 4.2 Mined minerals, unprocessed.</u> ~~Silicon products from mined sources such as diatomaceous earth, calcium silicate from wollastonite, or silicon dioxide (quartz). Sodium and potassium silicates are permitted only for Crop protection (Table 4.2 Column 2).~~ ~~See Table 4.2 Diatomaceous earth.~~	[cut dot]	•	This new listing for synthetic silicates (permitted only as crop production aids (column 2)) has been created to separate synthetic sodium and potassium silicates from the permitted mined sources (column 1) of the Silicon, silica and silicates. Silicic acid formulations are permitted. Silicic acid is understood to have a crop protection effect in response to stresses such as drought and fungal disease. Allowing its use will provide another pest management tool for operators.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
				The annotation also restricts levels of potassium and nitrogen to discourage overuse of pH adjusters. These limits serve as testable criteria as a tool for assessment of compliance and the prevention of unpermitted fortification thereby ensuring organic integrity. The creation of this synthetic silica listing led to the elimination of the Silicon, silica and silicates listing. These natural forms of silicon remain permitted as they are included in the “Mined minerals, unprocessed” listing.
Soaps	Soaps (including insecticidal soaps) shall consist of fatty acids derived from animal or vegetable oils.		•	
Soaps, ammonium	As a large animal repellent. Direct contact with soil or edible portion of crop is prohibited.		•	
Sodium bicarbonate	For pest and disease control for crops grown in greenhouses and other structures, and for other crops.		•	
Soil	From organic sources. Shall comply with restrictions specified in subclause 5.1.2 of CAN/CGSB-32.310. See definition of Soil in Clause 3 of CAN/CGSB-32.310. For soils used in containers, see Transplant media, potting soil and potting media.	•		
Sphagnum moss	May contain wetting agents listed in Table 4.2 Surfactants.	•		

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Stillage and stillage extract	Ammonium stillage is prohibited.	•		Replaced by more precise substances such as Distillers' grains and solubles and Brewers' grains and solubles and Condensed molasses fermentation solubles.
Struvite (magnesium ammonium phosphate)	Allowed if made from biological sources, including plant and plant by-products or livestock manures. Prohibited if made from sewage sludge. All sources of magnesium are permitted in the manufacturing process. Levels (mg/kg) of arsenic, cadmium, chromium, lead and mercury shall not exceed the limits (category C1) specified in <i>Guidelines for the Beneficial Use of Fertilising Residuals</i>. Shall not cause a build up of heavy metals or micronutrients in soil. <u>Obtained through precipitation from one or more of the following:</u> a) liquid animal manure as described in CAN/CGSB-32.311 Table 4.2 (Column 1) Animal Manure, unprocessed and in subclause 5.5.1 of CAN/CGSB-32.310; b) anaerobic digestate as described in Table 4.2 (Column 1); c) liquid waste from the processing of foods, beverages, pet foods or animal feeds; d) wastes from the processing of ethanol or biodiesel from plant-based agricultural feedstocks; e) municipal wastewater that has undergone advanced treatment processes/systems capable of reducing impurities to levels below those attainable through conventional secondary or biological treatment.	•		The change permits the use of struvite that has been recovered from more sources including municipal wastewater. As of March 2025, there are no sources of struvite in Canada that have been precipitated from liquid animal manure (the only type of struvite permitted in 2020). The only source of struvite is from the municipal waste stream source. The hope is that struvite from multiple sources will eventually become available. Permitting struvite from municipal wastewater provides a source of phosphorus - which is greatly needed for alkaline P-deficient soils (alkalinity inhibits plant uptake of phosphate from many natural sources). The definition of sewage sludge (in Clause 3 of Can/CGSB-32.310) has been modified to permit struvite extracted from wastewater. It is reasonable to distinguish sewage sludge (biosolids), which are prohibited, from the wastewater that has undergone advanced treatment (this is what the commercially available struvite is extracted from).

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>The type of wastewater stream and exact location(s) of the wastewater facilities shall be documented.</u> <u>May contain incidental precipitated phosphate salts.</u> <u>Struvite products from non-organic source animal manure (a) and municipal wastewater (e) shall contain:</u> <u>a) a phosphorus content (expressed as P₂O₅) between 25% and 30% (dry matter basis)</u> <u>b) a maximum organic carbon content of 1.5% (dry matter basis)</u> <u>c) a nitrogen content between 4% and 6% (dry matter basis)</u> <u>d) a magnesium content (expressed as Mg) between 8% and 11% (dry matter basis)</u> <u>Derivatives from struvite are prohibited.</u> <u>Shall not exceed the maximum acceptable levels of arsenic, cadmium, chromium, lead and mercury (mg/kg) and foreign matter outlined for unrestricted use compost (Category A), as specified in <i>Guidelines for Compost Quality</i>.</u> <u>Shall not cause a build-up of heavy metals or micronutrients in soil.</u> <u>Shall meet criteria for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>.</u> <u>Struvite from municipal wastewater (e):</u>			Struvite recovered from municipal wastewater is now approved for organic use in the EU. This decision was made after extensive study by the Expert Group for Technical Advice on Organic Production and the EU general fertilizer commission, which found this form of struvite to be safe for humans, animals and the environment (subject to purity restrictions). The proposed listing in the Canadian Permitted Substance Lists exceeds the purity standards laid down in EU rules. See here https://mailchi.mp/organicfederation/phosphorestruvite-11037816 for an article on struvite and here https://mailchi.mp/organicfederation/phosphorestruvite-11037816 for an article on Phosphorus on organic farms: from struvite to peecycling.

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Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	<u>a) shall not exceed total aluminium 0.1% (dry matter basis);</u> <u>b) shall not exceed total iron 1% (dry matter basis); and</u> <u>c) shall have no more than 6 mg/kg of any substance classified as a PAH (polycyclic aromatic hydrocarbon) as defined in the <i>Toxic Substances List</i> (schedule 1) of the <i>Canadian Environmental Protection Act (1999)</i>.</u> <u>For the evaluation of aluminium, iron and PAHs, struvite shall be measured using vacuum drying at 40°C until a constant weight to avoid the loss of crystal-bound water.</u>			
Sugars	Organic sugars (e.g., sucrose, glucose, fructose) are permitted.	•	•	
Sulphur smoke bombs	Use of sulphur smoke bombs shall be permitted in conjunction with other methods used for rodent control when a full pest control program is maintained but temporarily overwhelmed.		•	
Sulphur, elemental	Both mined and reclaimed sources of elemental sulphur are permitted.	•	•	
Summer oils	On foliage, as suffocating or stylet oils.		•	
Surfactants	Includes plant-derived saponins, such as <i>Yucca schidigera</i> and <i>Quillaja saponaria</i> , or substances listed in Table 4.2 Formulants used in soil amendments; Formulants used in crop production aids; Soaps.	•	•	
Transplant media, potting soil and potting media	Shall be composed entirely of permitted substances listed in Table 4.2 (Column 1 or 2). Soil from the field may be used provided that prohibited substances have not been used on the soil for at least 36 months.	•		
Treated seed	See Table 4.2 Peracetic acid; Seed treatments and refer to CAN/CGSB-32.310, 5.3.2.		•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Tree seals	Plant or milk-based paints are permitted. May only be combined with substances listed in Table 4.2 (Column 1 or 2). See Table 4.2 Plant Protectants. For planting stock: commercial grafting materials are permitted, provided that plants are maintained in accordance with requirements of CAN/CGSB-32.310 for at least 12 months prior to harvest of organic products.		•	
Vermicasts	See Table 4.2 Worm castings.	•		
Vermiculite		•		
Vinegar (acetic acid)	See Table 4.2 Acetic acid.		•	
Vitamins	Biological and mineral sources of all vitamins are permitted. Non-biological and non-mineral sources of vitamins B ₁ , C (ascorbic acid) and E are permitted.	•	•	
Water		•	•	
Water, recycled	Recycled water shall only contain substances listed in Tables 4.2 (Column 1 or 2), 7.3 and 7.4. Recycled wash water from all organic operations, including dairy operations, may be spread on crop lands. Requirements for land application, as specified in 5.5.2.5 of CAN/CGSB-32.310, shall be met. In all other uses, recycled water shall meet applicable irrigation water regulatory requirements.	•	•	
Wetting agents	See Table 4.2 Surfactants.	•	•	
Wood ash	See Table 4.2 Ash.	•	•	

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
Worm castings	Worm castings (also called vermicompost, worm compost, vermicasts, worm humus or worm manure) are the end product of the breakdown of organic matter and compounds by some earthworm species. Feedstocks for earthworms shall meet the criteria in Table 4.2 Compost feedstocks. The operator shall be able to demonstrate that: a) worm castings produced either on the farm or obtained from off-farm sources meet the limits for acceptable levels (MPN/g total solids) of human pathogens as specified in <i>Guidelines for Compost Quality</i>; or b) best practices known to eliminate human pathogens during vermicomposting have been used. See Table 4.2 Microorganisms and microbial products for information on compost starters.	•		
Yeast	See Table 4.2 Microorganisms and microbial products.	•		
Zinc	<u>Sulphates, oxides, oxysulphates, carbonates, chlorides, citrates, lignosulphonates or permitted chelates of zinc may be used when soil and plant deficiencies are documented by visual symptoms or by testing soil or plant tissue, or when the need for a preventative application can be documented.</u> <u>May be chelated with substances listed under Table 4.2 Chelates.</u> <u>Nitrates, hydroxides, amino acid chelates, ammonia-manganese complexes and polyphosphates are not permitted.</u>	•		The listing has been modified to have a consistent format with other micronutrient listings including expanding the requirement to demonstrate soil deficiency. It now identifies the specific sources and forms of the micronutrient that are not permitted.

Table 4.2 – Substances for crop production. Column 1: Soil amendments and crop nutrition, Column 2: Crop production aids and materials.

Substance name(s)	Origin and usage	1	2	Rationale
	See Table 4.2 Micronutrients.			

5 Permitted substances lists for livestock production

5.1	Classification	Rationale
5.1.1	Livestock production substances are classified according to the following uses and applications:	
a	Feed, feed additives and feed supplements;	
b	Health care products and production aids — Health care products include medications, remedies, parasiticides and other substances used to maintain or restore the well-being of an animal. Production aids include all other substances used on animals and their living areas, such as bedding, teat seals and teat dips.	
5.1.2	Substances listed in Tables 5.2 and 5.3 shall comply with prohibitions in 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and lactic acid):	
a	if the substance includes the substrate or growth media, the substrate or growth media ingredients shall be listed in Table 5.2 or 5.3;	

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b	if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.	
NOTE	In Canada, livestock feed must meet the compositional and labelling standards of the <i>Feeds Regulations</i> , 1983. Ingredients used in livestock feed must be approved and listed in Schedule IV or V of the <i>Feeds Regulations</i> , 1983. Some ingredients and products require registration (such as enzymes and milk replacers).	

Table 5.2 – Feed, feed additives and feed supplements

Table 5.2 – Feed, feed additives and feed supplements

Substance name(s)	Origin and usage	Rationale
Amino acids	~~Organic sources, such as fishmeal, insect meal, brewer's yeast, potato protein, corn gluten and distillers' grains, shall be the first preference.~~ ~~When the supplementation with these organic sources does not meet amino acid requirements to produce a balanced feed as per 6.4.1 and 6.4.2 of CAN/CGSB-32.310, then:~~ ~~a) amino acids derived from biological sources by biofermentation and extracted, or isolated, by hydrolysis or by physical or other non-chemical means may be used;~~ ~~b) when such forms of lysine and methionine are not commercially available for use in monogastrics feeding,~~ <u>As an exception to subclause 5.1.2 (CAN/CGSB-32.311) and Clause 1.4 a) of CAN/CGSB-32.310, isolated amino acids may be used when organic protein feeds and non-organic feed additives that are listed in Table 5.2 cannot meet amino acid requirements to produce a balanced feed as per subclauses 6.4.1 and 6.4.2 of CAN/CGSB-32.310.</u> . ~~This annotation will be reviewed at the next revision of the standard. See Table 5.2 Fishmeal.~~	Isolated amino acids will be permitted in organic livestock feeds in the quantities required for a balanced diet. Isolated amino acids are necessary components of livestock diets to keep the animals in good health. Having low amounts of amino acids would create a problem with animal welfare. All isolated amino acids are used by exception since they are usually produced by GE bacteria via fermentation. Methionine production usually does not involve GE bacteria, but is produced by chemical synthesis. The 2020 COS required a review of the amino acid annotation and the review team considered adding limits for each amino acid in terms of kgs per tonne of feed over the animal's lifetime. The team concluded that isolated amino acids are unlikely to be overused as they are expensive and the animals require a specific amount in their diet (not higher or lower). Furthermore, in 2024, the US NOP changed its approach and will no longer limit methionine because of the potential negative health impacts of such limits on poultry, and because no organic alternatives are available or emerging.

Table 5.2 – Feed, feed additives and feed supplements

Substance name(s)	Origin and usage	Rationale
Antioxidants	Derived from materials produced by living organisms (such as, but not limited to, plants, animals and microorganisms) using substances listed in Table 6.3 Extraction solvents and precipitation aids. Example: tocopherols derived from plants.	
Colouring agents	From biological sources.	
Diatomaceous earth	As a preventative livestock health care practice for control of internal parasites, and as an anti-caking agent. Shall be food grade (non-calcined). As free choice, or up to 2% of total diet, or as an anti-caking agent in feed ration.	
Energy feeds and forage concentrates (grains) and roughages (hay, silage, fodder, straw)	Shall be obtained from organic sources. May include silage preservation products. See Table 5.2 Hay or silage preservation products.	See Palm oil https://mailchi.mp/organicfederation/tcmtg-diverseschanges
Enzymes	Derived from plants, animals or microorganisms. Examples include, but are not limited to, bromelain, bovine liver catalase, ficin, animal lipase, malt, pancreatin, pepsin, trypsin, proteases and carbohydrases. Animal-derived enzymes shall be free of Specified Risk Material (SRM). This annotation will be reviewed at the next revision of the standard. See Table 5.2 Phytase.	
Fishmeal	<u>Shall be organic if commercially available.</u> All preservatives and other ingredients shall be listed in Table 5.2.	Although organic fish meal is not currently readily available, the change was made in the expectation that it may be more available in the near future.
Flavours	Shall be organic.	

Table 5.2 – Feed, feed additives and feed supplements

Substance name(s)	Origin and usage	Rationale
Food waste	Organic food for human consumption or by-products from organic food production (excluding abattoir waste).	
Hay or silage preservation products	Preference should be given to bacterial or enzymatic additives derived from bacteria, fungi and plants and food by-products (such as molasses and whey). The following acids may be used: lactic, propionic and formic.	
[NEW] <u>Mammalian or avian slaughter by-products</u>	<u>From organic sources and guaranteed free of Specified Risk Materials (SRM). Shall be used only to feed insects.</u>	The CFIA has not yet established a clear enforcement on safety issues related to insects as feed or food, however this will be implemented soon. If the insect feed might contain SRM, the onus is on the producer to show the final insect product is safe for feed for food. A careful consideration of the entire process of rearing insects should identify any potential contaminants that may be inherent in the insects, the growth substrate or introduced via production and processing steps.
[NEW] <u>Manure or other animal waste</u>	<u>Sourced from organic livestock operations. Shall be used only as a component of feed formulas for insects.</u>	
Microorganisms and yeasts	If organic sources of yeast are not commercially available, non-organic yeast sources, including yeast autolysate, shall be used.	
Milk replacer	Shall be organic if commercially available. Permitted for emergency use. Without antibiotics and animal fats or by-products.	
Minerals, trace minerals, elements	Unprocessed rock dusts; ground animal or plant material (other than blood or bone meal); and seawater are preferred sources. Chelated and sulphated forms are permitted. If none of the aforementioned sources are commercially available, other versions are permitted except for forms containing or produced with EDTA or EDDHA.	

Table 5.2 – Feed, feed additives and feed supplements

Substance name(s)	Origin and usage	Rationale
Molasses	Shall be organic.	
Phytase	Permitted when feed supplementation with phytase is recommended to reduce the phosphorus level in manure and thereby reduce the potential environmental consequence. As an exception, GE-derived sources of phytase are allowed even though they are not compliant to 5.1.2 of CAN/CGSB-32.311 or 1.4 a) of CAN/CGSB-32.310. This substance and annotation will be reviewed at the next revision of the standard.	
Pre-mixes	Concentrated mixture of minerals and vitamins. From organic sources if commercially available. All ingredients in pre-mixes shall be essential for animal nutrition, and listed in Table 5.2. Non-GE fillers, for example rice hulls, may be non-organic.	
Probiotics	Probiotics may be administered orally, as dietary supplements, via pharmaceutical preparations in the form of capsules, tablets, alginate gels, or dry powder.	
Protein feeds	Shall be from organic sources.	

Table 5.2 – Feed, feed additives and feed supplements

Substance name(s)	Origin and usage	Rationale
Seaweed meal	<u>Shall be organic if commercially available (to be reviewed in 2030).</u>	There are some certified organic sources, but there are many other seaweed producers/harvesters who are not certifying their product as organic (for livestock feed) simply because it is not required by Table 5.2. Seaweed is more often certified organic when it is going to be used as a crop input. It is logical to move towards requiring certified organic seaweed for livestock feed because the capacity for such a product exists and there is no substantial hurdle to certify these products. To mitigate any negative impacts of this change on producers and suppliers, a commercial availability clause is included, with the requirement to review if the commercial availability clause will still be necessary by 2030.
Vitamins	Permitted for enrichment or fortification. Vitamin formulants that comply with Canadian regulations are accepted, <u>including those containing non-organic agricultural carriers</u> . Vitamins not compliant to 5.1.2 of CAN/CGSB-32.311 are permitted.	Carriers are needed because vitamins are added in very tiny quantities that must be distributed evenly in the feed, and some carriers are not organically acceptable as they are nanoparticles. The intent of the vitamin listing is to permit any source of vitamin because of their necessity in animal diets, the small amounts added, and the methods of producing the vitamins.

Table 5.3 – Health care products and production aids

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Acetylsalicylic acid	Aspirin.	
Acids	Ascorbic, acetic, propionic, citric, formic and lactic acids and vinegar. Permitted for all uses such as treatment of water and bedding.	
Activated charcoal	Shall be of plant origin.	
Alcohol, ethyl (ethanol)	Permitted as a disinfectant and sanitizer.	
Alcohol, isopropyl	Permitted as a disinfectant.	
Antibiotics	See 6.6 of CAN/CGSB-32.310, for conditions pertaining to antibiotic use in livestock. See Table 5.3 Antibiotics, oxytetracycline.	
Antibiotics, oxytetracycline	For emergency use for bees. The equipment shall be destroyed in accordance with 7.1.15.7 of CAN/CGSB-32.310; treated bees do not need to be destroyed if they are taken out of organic production.	
Anti-inflammatories	Non-steroid anti-inflammatories such as ketoprofen. Preference shall be given to alternative products, such as those listed in Table 5.3, Botanical compounds; and Homeopathy and biotherapies. To reduce inflammation. See 6.6.4 c) 2) of CAN/CGSB-32.310.	
Biologics		
Botanical compounds	Botanical preparations, such as atropine, butorphanol and other medicines from herbaceous plants shall be used according to label specifications. Substances containing petroleum-derived formulants, such as propylene glycol, shall not be fed to livestock.	

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Calcium borogluconate	For milk fever. No withdrawal period required.	
Chlorhexidine	For surgical procedures conducted by a veterinarian. To be used as a post-milking teat dip when alternative germicidal agents and physical barriers have lost their effectiveness. See Table 5.3 Teat dips and udder wash.	
Colostrum whey	Probiotic.	
Colostrum	Shall be organic if commercially available.	
Copper sulphate	As an essential nutrient (source of copper and sulphur) and for topical use (foot baths).	
Diatomaceous earth	For use in control of external parasites and as a preventative practice for control of internal parasites. For internal use, diatomaceous earth shall be food grade (non-calcined).	
Electrolytes	Including, but not limited to: CMPK (Calcium, Magnesium, Phosphorus, Potassium), calcium propionate and calcium sulphate. Shall not contain antibiotics. Orally or by injection.	

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Formic acid	For apicultural use, to control parasitic mites. The use of this substance ~~may be used after the last honey harvest of the season and shall be discontinued 30 days before the addition of honey supers~~ <u>shall be discontinued 14 days before harvesting the hive products.</u>	Many beekeepers treat hives with formic acid several times during the beekeeping season in order to control varroa mites, and thereby keep the colony alive. Health Canada states that "Maximum residue limits (MRLs) are not required for formic acid." Non-synthetic formic acid can be found in nature; it causes the sting from ants and stinging nettles, and can even be found at low concentrations in wild honey.
Formulants (inerts, excipients)	Shall be used in conjunction with substances listed in Table 5.3. Formulants are not subject to 1.4 or 1.5 of CAN/CGSB-32.310 or 5.1.2 of this standard.	
Glucose		
Glycerol (glycerine, glycerin)	Shall be from organic sources if commercially available. Shall be from vegetable oil or animal fat. Shall be produced using fermentation or by hydrolysis.	
Homeopathy and biotherapies		
Honey	Shall be organic.	
Hydrated lime (calcium hydroxide)	Shall not be used to deodorize animal wastes.	

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Hydrogen peroxide	Pharmaceutical grade hydrogen peroxide is permitted for external use (disinfectant). Food-grade hydrogen peroxide is permitted for internal use (for example, added to livestock drinking water).	
Iodine	If used as a topical disinfectant: permitted iodine sources include potassium iodide and elemental iodine. If used as a cleaning agent: non-elemental iodine shall be used; iodine shall not exceed 5% solution by volume (example: iodophors). Use shall be followed by a hot-water rinse.	
Iron products	May be supplied by ferric phosphate, ferric pyrophosphate, ferrous lactate, ferrous sulphate, iron carbonate, iron gluconate, iron oxide, iron phosphate, iron sulphate or reduced iron.	
Lanolin	For external use only, such as udder balm (ointment).	
Local anesthetics	Such as lidocaine. Use of pharmaceutical local anesthetics shall be followed by withdrawal periods of 90 days for livestock intended for slaughter, and seven days for dairy animals. Preference shall be given to alternatives, such as clove oil, listed in Table 5.3 Botanical compounds; Homeopathy and biotherapies.	
Magnesium sulphate	Mined sources. A source of magnesium and sulphur.	
Mineral oil	For external use.	

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Minerals, trace minerals, elements	Non-synthetic chelated or sulphated minerals. Examples include oyster shell, calcium chloride and magnesium oxide. Synthetic nutrient minerals may be used if non-synthetic sources are not commercially available. Minerals from any source are permitted for medical use.	
Microorganisms and yeasts	If organic sources of yeast are not commercially available, non-organic yeast sources derived from living yeast, including yeast autolysate, shall be used.	
Oxalic acid	For mite control in honeybee colonies.	
Oxytocin	For post-parturition therapeutic use. Meat from treated animals will not lose its organic status. See 6.6.10 d) of CAN/CGSB-32.310, for criteria pertaining to the mandatory withdrawal period.	
Paraffin	Shall be food-grade. For use in hives.	
Parasiticides and anti-microbials	Shall respect requirements set out in 6.6 of CAN/CGSB-32.310 with regard to the use of internal parasiticides.	
Physical teat seals	All sources are permitted. Shall be free from antibiotics. For post-lactation use. Shall be completely removed prior to nursing or milking. Shall be prescribed and administered under veterinary supervision.	
Plant oils	To control external parasites.	
Prebiotics	From organic sources if commercially available.	

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Probiotics	Probiotics may be administered orally, as dietary supplements, via pharmaceutical preparations in the form of capsules, tablets, alginate gels, or dry powder.	
Propylene glycol	May only be used as an ingredient in foot baths.	
Sedatives	Such as xylazine.	
Selenium products	Derived from sodium selenate or sodium selenite. May be used to address documented deficiencies in the stock, soils or feed supplies. See Table 5.3 Minerals, trace minerals, elements.	
Sodium hydroxide	For use in dehorning paste. See 6.4 of CAN/CGSB 32.310.	
Sulphur	For control of external parasites.	
Teat dips and udder wash	Substances, such as alcohol, iodine, hydrogen peroxide, chlorine dioxide and ozone, can be used as disinfectants for a pre- or post-teat dip or udder wash if they are registered for this use by Canada's <i>Food and Drug Regulations</i> . Chlorhexidine can be used as a post-milking teat dip if alternative germicidal agents and physical barriers have lost their effectiveness. See Table 5.3 Chlorhexidine.	
Thymol	See Table 5.3 Botanical compounds for thymol derived from botanical sources. Thymol that is not derived from botanical sources may only be used in foot baths.	
Vaccines	Vaccines may be used in prevention of diseases. If vaccines compliant to 5.1.2 of this standard are not commercially available, or are ineffective, vaccines not compliant to 5.1.2 are permitted.	

Table 5.3 – Health care products and production aids

Substance name(s)	Origin and usage	Rationale
Vitamins	Vitamin formulants that comply with Canadian regulations are accepted. Vitamins not compliant to 5.1.2 of this standard are permitted. Orally, topically or by injection.	

6 Permitted substances lists for preparation

		Rationale
6.1	Classification	
6.1.1	Processing substances are classified according to the following uses and applications:	
a	Food additives (see definition in clause 3 of CAN/CGSB-32.310);	
b	Other ingredients not considered to be food additives;	
c	Processing aids (see definition in clause 3 of CAN/CGSB-32.310).	
6.2	Restrictions	
6.2.1	Substances listed in Tables 6.3, 6.4 and 6.5 shall comply with prohibitions in Clauses 1.4 and 1.5 of CAN/CGSB-32.310. The following additional requirements apply to substances produced on substrates or growth media (for example, microorganisms and lactic acid):	
a	if the substance includes the substrates or growth media, the substrates or growth media ingredients shall be listed in Table 6.3, 6.4 or 6.5;	
b	if the substance does not include the substrates or growth media, the substance shall be produced on non-genetically engineered substrates or growth media, if commercially available.	
6.2.2	Organic commercial availability requirements specified in the substance listing annotations of Tables 6.3, 6.4 or 6.5 apply to substances used in products composed of 95% or more organic content.	
6.2.3	Other commercial availability requirements specified in the substance listing annotations of Tables 6.3, 6.4 or 6.5 apply to substances used in organic products composed of 70% or more organic content.	

Table 6.3 – Ingredients classified as food additives

Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Acids	Including the following sources: a) alginic; b) citric — from fruit and vegetable products or produced by microbial fermentation of carbohydrate substances; and c) lactic.	
<u>Alginic acid</u>		
<u>Antifoaming agents</u>	<u>See Table 6.5 Antifoaming agents</u>	
Activated charcoal	Shall be of plant origin. Prohibited for use in the production of maple syrup.	
Agar	See Table 6.3 Extraction solvents and precipitation aids.	
Alginates	The following alginates are permitted: a) alginic acid; b) potassium alginate; and c) sodium alginate.	
Ammonium bicarbonate	As a leavening agent.	
Ammonium carbonate	As a leavening agent.	
Argon		

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Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Ascorbic acid (vitamin C)		
Calcium carbonate	Prohibited for use as a colouring agent.	
Calcium chloride	Permitted for: a) milk products; b) fat products; c) soybean products; d) fruits and vegetables: and <u>e) beer brewing to adjust calcium level.</u>	Adding beer to an existing annotation was done with minimal hesitation because when this listing was created it focused exclusively on food production and did not consider alcohol production.
Calcium citrate		
Calcium phosphates (mono-, di-, and tri-basic forms)		
Calcium sulphate (gypsum)	Mined sources; calcium sulphate produced using sulphuric acid is prohibited.	
Carbon dioxide (CO ₂)	Carbonation of wine or mead is prohibited.	
Carrageenan (Irish moss)	Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. By exception, isopropyl alcohol may be used to derive carrageenan.	

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Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Carriers	Carriers of non-agricultural origin may be used if listed on Tables 6.3, 6.4 or 6.5. Non-organic carriers of agricultural origin (such as wheat starch) may be used if ingredients or processing aids containing organic carriers are not commercially available.	
<u>Citric acid</u>	<u>From fruit and vegetable products or produced by microbial fermentation of carbohydrate substances.</u>	
Colouring agents	From biological sources such as spices, annatto, juices made from plant sources, etc. derived using approved methods (see Table 12 B (1) & (2), Origin and mode of production of CAN/CGSB-32.310), and substances in Table 6.3 Extraction solvents and precipitation aids. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).	Corrected reference.
[NEW] <u>Dibasic ammonium phosphate (diammonium phosphate, DAP)</u>	<u>As a yeast and bacterial food for vinegar and alcohol production restricted to 0.3 g/L (0.04 oz/gal). Not to be added to a final vinegar or alcohol product.</u>	The original listing was triggered specifically by the wine sector but has been revised to accommodate the broadest range of alcohol and vinegar fermentations possible.

Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Enzymes	The following sources of enzymes are permitted: a) any preparations of enzymes normally used in food processing derived from edible, non-toxic plants, non-pathogenic fungi or non-pathogenic bacteria; b) derived from animals—shall be organic if commercially available: rennet; catalase from bovine liver; animal lipase; pancreatin; pepsin; and trypsin. Animal-derived enzymes shall be free of Specified Risk Material (SRM); and c) egg white lysozyme.	
Extraction solvents and precipitation aids	The following may be used to derive (extract) substances listed in Tables 5.2, 6.3, 6.4 and 6.5: a) water; b) culinary steam, as described in 8.1.2 b) of CAN/CGSB-32.310; c) fats, oils and alcohols other than isopropyl alcohol; d) supercritical CO₂; and e) substances listed in Tables 6.3, 6.4 or 6.5 of this standard. Precipitation aids derived from biological sources (such as plant proteins, albumin, casein, and gelatin) may also be used. In addition, non-biological precipitation aids, such as bentonite, silicon dioxide, etc., may be used if listed in Tables 6.3, 6.4 or 6.5. If listed in Tables 6.3, 6.4 or 6.5, precipitation aids shall meet any annotation restrictions therein.	

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Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Gelatine	Shall be organic if commercially available. Gelatine may be sourced from: a) plants; or b) animals. If derived from cattle, gelatine shall be guaranteed free of Specified Risk Material (SRM).	
Glucono delta lactone	Production by the oxidation of D-glucose with bromine water is prohibited.	
Glycerides (mono- and diglycerides)	From organic sources if commercially available. For use in drum drying of products.	
Glycerol (glycerine, glycerin)	Shall be from organic sources if commercially available. Shall be from vegetable oil or animal fat. Shall be produced using fermentation or by hydrolysis.	
Gums	The following gums are permitted: arabic gum, carob bean gum (locust bean gum), gellan gum, guar gum, karaya gum, tragacanth gum, and xanthan gum. Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. By exception, isopropyl alcohol may also be used to derive gums.	
Kelp and kelp products	For use as a thickener and dietary supplement.	
<u>Lactic acid</u>		

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Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Lecithin	Shall be organic if commercially available. The bleached form is permitted if processed using food-grade hydrogen peroxide.	
Magnesium carbonate	As an anti-caking agent in non-standardized dry mixes (e.g., seasonings) used in meat products with 70-95% organic content.	
Magnesium chloride	Derived from seawater.	
Magnesium stearate	For use as an anti-caking or releasing agent in products whose contents are $\geq 70\%$ and $< 95\%$ organic ingredients.	
Magnesium sulphate		
Malic acid		
Meat curing agents	Extracts, juice, or cultured powder of celery or chard are permitted. Shall be organic if commercially available.	
Ozone		
Pectin	High-methoxyl and low-methoxyl pectin sources are permitted.	
Potassium acid tartrate ($\text{KC}_4\text{H}_5\text{O}_6$)	From grapes/wine-making.	
Potassium carbonates (mono- and bi-)		
Potassium chloride	From mined sources such as sylvite, carnalite, and potash. <u>Refer to Potassium chloride in Table 6.4 regarding potassium chloride in vinegar and alcohol production.</u>	This listing, along with the DAP listing, replaces the Yeast foods listing in Table 6.4.

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Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Potassium citrate		
Potassium <u>sulphite (bi-, meta-. forms)</u> ~~metabisulphite~~	See Table 6.3 Sulphur dioxide, anhydrous (SO ₂).	Potassium bisulphite has some different functions than potassium metabisulphite in winemaking but mainly both stop the development of undesirable characteristics in the wine. It made sense to add this listing based on that logic but it is also good to know that potassium bisulphite is permitted in the EU organic standards for winemaking.
Potassium phosphate (mono-, di-, and tribasic forms)	For use in products whose contents are ≥70% and <95% organic ingredients.	
Potassium tartrate (K ₂ C ₄ H ₄ O ₆ . INS 336)		
Silicon dioxide (silica)	No restrictions on sources or uses except for maple (see subclause 7.2.12.6 of CAN/CGSB-32.310).	
Sodium acid pyrophosphate	For use as a leavening agent.	
Sodium bicarbonate (baking soda)		
Sodium carbonate (soda ash)	If biological or mined sources are not commercially available, synthetic forms are permitted.	
Sodium chloride		

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Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Sodium citrate		
Sodium hydroxide (lye or caustic soda)		
Sodium phosphates	For use in dairy products.	
Sulphur dioxide, anhydrous (SO ₂)	Sulphites from SO₂-bottled gas; as liquid SO₂; or liberated from ignition of asbestos-free sulphur wicks are permitted. Sulphurous acid (aqueous sulphur dioxide), and Potassium <u>bisulphite</u> and <u>potassium</u> metabisulphite are also permitted. For use as a preservative in alcoholic beverages; minimal use of SO₂ is recommended. Maximum allowable levels of SO₂ in parts per million (ppm) are: a) in alcoholic beverages containing less than 5% residual sugar, 100 ppm and 30 ppm for total and free sulphites, respectively; b) in alcoholic beverages containing 5%-10% residual sugar, 150 ppm and 35 ppm for total and free sulphites, respectively; and c) in alcoholic beverages containing more than 10% residual sugar, 250 ppm and 45 ppm for total and free sulphites, respectively.	Potassium bisulphite has some different functions than potassium metabisulphite in winemaking but mainly both stop the development of undesirable characteristics in the wine. It made sense to add this listing based on that logic but it is also good to know that potassium bisulphite is permitted in the EU organic standards for winemaking.
Sulphurous acid	See Table 6.3 Sulphur dioxide, anhydrous (SO ₂).	
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	From lees. For beverages.	

Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Tocopherols and mixed natural concentrates	Derived from vegetable oil when rosemary extract is not a suitable alternative.	
Vegetable oils	Shall be organic if commercially available. Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Maple syrup production—vegetable oils shall be organic and without allergenic potential.	
Waxes, produce	Organic beeswax and organic carnauba wax may be used to wax produce. See 9.2.1 d) of CAN/CGSB-32.310 if organic wax is commercially unavailable. For other wax uses, see Table 6.5 Waxes.	
Yeast	If organic sources of yeast are not commercially available, these alternative sources of yeast may be used: a) autolysate; b) bakers' (may contain lecithin, as listed in Table 6.3); c) brewers'; d) nutritional; and e) torula. Growth on petrochemical substrate and sulphite waste liquor is prohibited. Yeast may be smoked or smoke-flavoured. When smoked, the smoke shall come from concentrated, condensed smoke from wood without additional ingredients (unless listed in Tables 6.3, 6.4 or 6.5).	

Table 6.3 – Ingredients classified as food additives		
Substance name(s)	Origin and usage	Rationale
Yeast foods	<i>[Delete the current "yeast foods" listing]</i> Yeast foods: For use in alcoholic beverages: a) potassium chloride—permitted for ale, beer, light beer, malt liquor, porter and stout; and b) dibasic ammonium phosphate (diammonium phosphate, DAP), restricted to 0.3 g/L (0.04 oz/gal)—permitted for cider, mead and wine. <i>[Instead add two separate listings for Potassium chloride and Dibasic ammonium phosphate in both 6.3 & 6.4 as follows]</i> <u>Potassium chloride:</u> as yeast and bacterial food for vinegar and alcohol production. <u>Dibasic ammonium phosphate (diammonium phosphate, DAP):</u> as a yeast and bacterial food for vinegar and alcohol production restricted to 0.3 g/L (0.04 oz/gal). Not to be added to a final vinegar or alcohol product.	The original listing was triggered specifically by the wine sector but has been revised to accommodate the broadest range of alcohol and vinegar fermentations possible. Two separate listings for Potassium chloride and Dibasic have been added.

Table 6.4 – Ingredients not classified as food additives

Table 6.4 – Ingredients not classified as food additives		
Substance name(s)	Origin and usage	Rationale
<u>Algal oil</u>	<u>See Table 6.4 Long-chain polyunsaturated fatty acids (LCPUFAs).</u>	
<u>Amino acids</u> [NEW]	<u>May be used if legally permitted for infant formula and formulated liquid diets to achieve the levels of proteins legally required.</u>	<i>Note – this substance is erroneously not listed in the CGSB draft submitted to public comment.</i>
Carriers	Carriers of non-agricultural origin may be used if listed on Tables 6.3, 6.4 or 6.5. Non-organic carriers of agricultural origin (such as wheat starch) may be used if ingredients or processing aids containing organic carriers are not commercially available.	
Collagen casings	Collagen shall be derived from animal sources. If derived from cattle, collagen shall be guaranteed free of Specified Risk Material (SRM). Other ingredients (such as, but not limited to: cellulose, calcium coatings, glycerin, etc.) added to collagen casings during their manufacture that remain in the collagen casing when it is used shall respect the requirement provided in 1.4 a) of CAN/CGSB-32.310. Permitted for poultry sausage.	
Cultures	See Table 6.4 Microorganisms.	

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Table 6.4 – Ingredients not classified as food additives		
Substance name(s)	Origin and usage	Rationale
Fatty Acids	a) Omega-3 b) Omega-6. <u>Shall be organic if commercially available. Permitted for infant formulas to achieve the levels of fatty acids legally permitted.</u>	
Flavours	Derived from biological sources using approved methods (see Table ~~11~~ 12 B (1) & (2) Origin and mode of production of CAN/CGSB-32.310), and substances (see Table 6.3 Extraction solvents and precipitation aids). <u>Includes alternative substances derived from biological sources that impart flavour including but not limited to acids and bases permitted by Table 12 B (3) in CAN/CGSB 32.310.</u> May contain permitted carriers (see Table 6.3 and 6.4 Carriers).	Reference correction
<u>Long-chain polyunsaturated fatty acids (LCPUFAs)</u>	<u>Docosahexaenoic acid (DHA)—from algal sources; arachidonic acid (ARA)—from fungal sources.</u> <u>Shall be organic if commercially available. Permitted for infant formulas to achieve the levels of fatty acids legally permitted.</u>	
Microorganisms	Microbial preparations may contain substrates <u>made</u> ~~derived~~ from agricultural <u>substances</u> or <u>derived from</u> biological substances such as milk, lactose, soy, agar, etc. May also contain permitted carriers (see Table 6.3 & 6.4 Carriers). Includes starter and dairy cultures and other preparations of microorganisms normally used in product processing.	
Nitrogen	Shall be food-grade quality.	
Oxygen		

Table 6.4 – Ingredients not classified as food additives		
Substance name(s)	Origin and usage	Rationale
Potassium chloride	<u>From mined sources such as sylvite, carnalite, and potash.</u> <u>May be used for all types of food production, including as food for yeast and bacteria in vinegar and alcohol production.</u>	Potassium chloride was added to Table 6.4. The original listing was triggered specifically by the wine sector but has been revised to accommodate the broadest range of alcohol and vinegar fermentations possible.
Potassium iodide	Shall be used when legally required or permitted.	
Salt	Substances listed in Tables 6.3 or 6.4 may be added to mined or sea salt. See Table 6.3 Sodium chloride; Potassium chloride. See definition of Salt in clause 3 of CAN/CGSB-32.310.	
Smoke flavour	See Table 6.3 Yeast.	
Starch	From rice and waxy maize—Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids, where applicable. Starch shall not be modified by chemicals. Starch may be modified using physical or enzymatic methods. Cornstarch—<u>If organic cornstarch is not commercially available, non-organic may be used and</u> may contain substances that are plant-derived or listed in Tables 6.3, 6.4 or 6.5.	

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Table 6.4 – Ingredients not classified as food additives		
Substance name(s)	Origin and usage	Rationale
Vitamins and mineral nutrients	Shall be used if legally required (e.g., fluid milk, white flour, infant formula, meal replacement, etc.). The following non-dairy substitute products may be fortified on a voluntary basis, if legally permitted: plant-based beverages, products that resemble cheese, and butter substitutes. Ferrous sulphate—Shall be used if legally required and may be used, on a voluntary basis, if legally permitted.	
Yeast	If organic sources of yeast are not commercially available, these alternative sources of yeast may be used: a) autolysate; b) bakers' (may contain lecithin, as listed in Table 6.3); c) brewers'; d) nutritional; and e) torula. Growth on petrochemical substrate and sulphite waste liquor is prohibited. Yeast may be smoked or smoke flavoured. When smoked, the smoke shall come from concentrated, condensed smoke from wood without additional ingredients (unless listed in Tables 6.3, 6.4 or 6.5).	

Table 6.5 – Processing aids

Table 6.5 – Processing aids

Substance name(s)	Origin and usage	Rationale
<i>Acer pennsylvanicum</i>	As an anti-foaming agent in maple syrup production.	
<u>Alginic acid</u>		The entire 'Acid' listing from Table 6.3 was added to Table 6.5. Given these acids are acceptable as ingredients, they are more than acceptable as processing aids. Lactic acid can be used as a carcass wash under the standard as a cleaner, however carcass washes are classified as processing aids by CFIA.
<u>Antifoaming agents</u>	<u>Shall be composed of organic ingredients. May contain permitted substances (Tables 6.3 and 6.5).</u>	
Activated charcoal	Shall be of plant origin. Prohibited for use in the production of maple syrup.	
Alcohol, ethyl (ethanol)	Shall be organic if commercially available.	
Argon		
Ascorbic acid (vitamin C)	For use as an anti-browning agent prior to the extraction or concentration of fruit or vegetable juice.	
Bentonite		
Calcium carbonate		

Table 6.5 – Processing aids

Substance name(s)	Origin and usage	Rationale
Calcium hydroxide (lime)		
Calcium sulphate (gypsum)	Sulphates produced using sulphuric acid are prohibited. May be used: a) as a carrier for cakes and biscuits; b) for soybean products; and c) for bakers' yeast.	
Carbon dioxide (CO ₂)		
Carrageenan (Irish moss)	Derived using substances listed in Table 6.3 <i>Extraction solvents and precipitation aids</i> .	
Casein	Shall be from organic sources if commercially available. Non-organic casein shall be derived from the milk of animals not treated with rBGH (recombinant bovine growth hormone).	
Clay dust	As a filtering agent in maple syrup production.	
Cellulose	As a filtering aid (non-chlorine bleached) and for use in inedible regenerative sausage casings. The TCF (Totally Chlorine Free) method of bleaching is permitted.	
<u>Chlorine compounds</u>	<u>See Table 7.3 Chlorine compounds.</u>	

Table 6.5 – Processing aids

Substance name(s)	Origin and usage	Rationale
<u>Citric acid</u>	From fruit and vegetable products or produced by microbial fermentation of <u>carbohydrate substances</u> .	
Diatomaceous earth	As a food filtering aid or as a clarifying agent.	
Enzymes	The following sources of enzymes are permitted: a) any preparations of enzymes normally used in food processing ~~made derived~~ from edible, non-toxic plants, non-pathogenic fungi or non-pathogenic bacteria; b) <u>originating from</u> ~~animal-derived~~—shall be organic if commercially available: rennet; catalase from bovine liver; animal lipase; pancreatin; pepsin; and trypsin. Animal-derived enzymes shall be free of Specified Risk Material (SRM); c) egg white lysozyme.	
Gelatine	Shall be from organic sources if commercially available. Permitted sources are: a) plants; and b) animals. Animal gelatine may be used in preparations of canned meat or as a gelling agent for gummed candy. If ~~derived~~ <u>originating</u> from cattle, gelatine shall be guaranteed free of Specified Risk Material (SRM).	
Hydrogen peroxide	Food-grade. For use as a bleaching agent for proteins and starches.	
Isinglass	As a fining agent (fish-based).	
Kaolin	As a clarifying agent.	
<u>Lactic acid</u>		

Table 6.5 – Processing aids

Substance name(s)	Origin and usage	Rationale
Lecithin	Shall be organic if commercially available. Bleached form is permitted if processed using food-grade hydrogen peroxide.	
Nitrogen	Shall be food-grade quality.	
Oxygen		
Ozone		
[NEW] <u>Peracetic acid</u>		Adding peracetic acid (which is also in Table 7.3) to Table 6.5 makes it easier for meat processors given that carcass washes are classified as processing aids by CFIA.
Perlite	For use as a filtering aid.	
Potassium carbonate		
Potassium hydroxide (caustic potash)	For pH adjustment. Prohibited for use in lye peeling of fruits and vegetables.	
Silicon dioxide (silica)	No restrictions on sources or uses except for maple (see 7.2.12.6 of CAN/CGSB-32.310)	
Sodium bicarbonate (baking soda)		
Sodium hydroxide (lye or caustic soda)	Prohibited for use in lye peeling of fruits and vegetables.	
Talc	As a filtering agent.	

Table 6.5 – Processing aids

Substance name(s)	Origin and usage	Rationale
Tannic acid	Shall be from an organic source if commercially available. Shall be derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Permitted as a filtration aid for wines.	
Tartaric acid (C ₄ H ₆ O ₆ INS 334)	From lees. For beverages.	
Vegetable oils	From organic sources if commercially available. Derived using substances listed in Table 6.3 Extraction solvents and precipitation aids. Maple syrup production—vegetable oils shall be organic and without allergenic potential.	
Waxes	If organic waxes, such as beeswax or carnauba, are not commercially available, waxes derived from non-organic biological sources may be used. Edible wax cheese coatings that require a knife to cut or peel the wax away shall not contain paraffin, microcrystalline wax, non-listed preservatives, colours, bactericides or fungicides. Non-edible, fully removable (i.e., no knife is needed to cut or peel the wax away from the cheese), non-organic cheese wax may be used and shall be considered packaging per 8.1.6 of CAN/CGSB-32.310. For waxes applied to produce – see Table 6.3 Waxes, produce.	

7 Permitted substances lists for cleaners, disinfectants and sanitizers

7.1	Classification	Rationale
7.1.1	The cleaners, disinfectants and sanitizers listed below are used to remove dirt, filth and foreign matter from organic products and organic product contact surfaces. These substances are also used to control microorganisms that may contaminate products. The use of these substances may require a removal event, as defined in clause 3 of CAN/CGSB-32.310.	
7.1.2	They are classified as follows:	
a)	food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event;	
b)	cleaners, disinfectants and sanitizers permitted on organic product contact surfaces, for which a removal event is mandatory prior to an organic production load or run.	
7.1.3	All non-organic ingredients listed on Safety Data Sheets (SDS) and active ingredients listed on the label of formulated cleaners, sanitizers and disinfectants shall be listed in Tables 7.3 or 7.4. Other non-organic ingredients used without a removal event shall be limited to substances listed in Table 7.3; water; compounds used to treat drinking water; and product stabilisers, such as HEDP (1-hydroxyethane 1,1-diphosphonic acid) or dipicolinic acid, whose function is to prevent the chemical degradation of substances listed in Table 7.3. Table 7.4 compliant products may contain non-active ingredients, including, but not limited to, dyes, fragrances, and chemical agents used to prevent physical separation of foams or emulsions.	
7.2	a) <u>Substances listed in Tables 7.3 and 7.4 are not subject to 1.4 or 1.5 of CAN/CGSB-32.310.</u> b) Clause 7 does not apply to maple syrup production. The operator shall meet the specific requirements for the different stages of production as described in 7.2 of CAN/CGSB 32.310.	The addition of this exception for cleaning substances is necessary as it states in the last sentence of 1.1 Scope of 32.311 "Listed substances comply with prohibitions in 1.4 and 1.5 of CAN/CGSB-32.310." That would include cleaning substances - but that never was the intention of the standard.

Table 7.3 – Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event

Table 7.3 – Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event

Substance name(s)	Origin and usage	Rationale
Acetic acid	May be used on organic product contact surfaces. May be used on organic products if produced by microbial fermentation of natural carbohydrate sources (sugars, wood, etc.). Example: apple cider vinegar. May be filtered or unfiltered.	
Alcohol, ethyl (ethanol)	May be used on organic product contact surfaces.	
Alcohol, isopropyl	May be used on organic product contact surfaces.	
Alcohol, organic sources		
Ascorbic acid (vitamin C)		
Carbon dioxide (CO ₂)		

Table 7.3 – Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event

Substance name(s)	Origin and usage	Rationale
Chlorine compounds	The following chlorine compounds are permitted: a) calcium hypochlorite; b) chlorine dioxide; c) hypochlorous acid generated via electrolyzed water; d) sodium hypochlorite. ~~Shall not exceed maximum levels for safe drinking water.~~ Chlorine compounds may be used: a) for wash water in direct contact with crops or food; b) in flush water from cleaning irrigation systems, equipment, storage or transport units—application to crops or fields is permitted. <u>Shall not exceed the maximum level of chlorine in potable water, as per the Guidelines for Canadian Drinking Water Quality published by Health Canada, as well as any applicable provincial requirements.</u>	Provides clarity.
Citric acid		
Glycerol (glycerine, glycerin)	~~Shall be from organic sources if commercially available.~~ ~~Shall be from vegetable oil or animal fat.~~ ~~Shall be produced using fermentation or by hydrolysis.~~ <u>May be used on organic product contact surfaces, including hands.</u> <u>May be used on organic products if sourced from vegetable oil or animal fat; and produced using fermentation or by hydrolysis.</u>	Removing the source restrictions for glycerol in cleaning products (including hand cleaners and sanitizers) makes it possible for operators to use personal care products and other cleaning products containing glycerol without having to research for a restricted source, as is required for glycerol used as a food additive (Table 6.3).

Table 7.3 – Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event

Substance name(s)	Origin and usage	Rationale
Hydrogen peroxide		
Lactic acid		
Magnesium sulphate		
Microorganisms	Living or dead biological organisms, such as viruses, phages, bacteria, protozoa, fungi, etc.	
<u>Non-ionizing radiation</u>	<u>May be used to manage pest loads on product and product contact surfaces, including facilities and equipment, including empty hives. Non-ionizing radiation is defined in Clause 3 of CAN/CGSB-32.310 in the Terms and Definitions.</u>	See rationale for “Non-ionizing radiation” in Table 4.2.
Ozone		
Peracetic (peroxyacetic) acid	On food and plants: peracetic acid may be used in wash or rinse water. Peracetic acid may also be used on food contact surfaces.	
Potassium bicarbonate	On organic product contact surfaces.	
Sodium bicarbonate (baking soda)		
Sodium carbonate (soda ash)	Biological or mined sources. See Table 7.4 Sodium carbonate (soda ash), synthetic.	
Sodium citrate		
Sodium hydroxide (lye or caustic soda)		

Table 7.3 – Food-grade cleaners, disinfectants and sanitizers permitted without a mandatory removal event

Substance name(s)	Origin and usage	Rationale
<u>Surfactants, biodegradable</u>	<u>Surfactants either stand-alone or when formulated with substances listed on Table 7.3 shall be readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions. Permitted for egg washing.</u>	
Vinegar		

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory		Rationale
Substance name(s)	Origin and usage	
Chlorine compounds	The following chlorine compounds are permitted <u>up to maximum label rates</u> : a) calcium hypochlorite; b) chlorine dioxide; c) hypochlorous acid generated via electrolyzed water; d) sodium hypochlorite.	
Detergents	Detergent <u>products</u> shall <u>be</u> : <u>1) readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions; or,</u> <u>2) composed of OECD biodegradable surfactants, and substances listed in Tables 7.3 or 7.4; (if surfactants are added, the surfactants will meet the OECD definition of biodegradable); or,</u> <u>3) readily eliminated during wastewater treatment such that harm to the environment is minimized.</u>	This revision eliminates the need to assess OECD compliance of a detergent product if it is composed solely of compliant surfactants and substances listed in Table 7.3 or 7.4.
Essential oils	Derived from plant sources using substances in Table 6.3 Extraction solvents and precipitation aids. May contain permitted carriers (see Table 6.3 and 6.4 Carriers).	
Iodine	Shall be non-elemental. Shall not exceed 5% solution by volume (example: iodophors).	
Lime	All forms of lime, including calcium carbonate, calcium hydroxide and calcium oxide.	

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory		Rationale
Substance name(s)	Origin and usage	
[NEW] <u>Methanesulphonic acid (MSA)</u>		Adding MSA to Table 7.4 reduces the need for operators to evoke 8.2.3 when a stronger acid is needed than those currently listed in Table 7.4. MSA is a mineral acid, like nitric or sulphuric acid, but not as strong. It is common in the environment and part of the biogeochemical sulphur cycle. MSA is added to cleaning formulations including a variety of biodegradable detergents to help dissolve minerals.
Octanoic acid (caprylic acid)		
Peroxyoctanoic acid (POOA)		
Phosphoric acid	On dairy equipment.	
Potassium carbonate	Documentation shall demonstrate that effluent discharge was neutralized to minimize negative environmental impact.	
Potassium hydroxide (caustic potash)		

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory

Table 7.4 – Cleaners, disinfectants and sanitizers permitted on organic product contact surfaces for which a removal event is mandatory		Rationale
Substance name(s)	Origin and usage	
Potassium permanganate	Not to exceed 1% solution by volume.	
Saponin	Derived from plants such as <i>Yucca schidigera</i> and <i>Quillaja saponaria</i> .	
Soap-based algicide (demossers)		
Soaps	Soaps shall consist of fatty acids derived from animal or vegetable oils.	
Sodium borate		
Sodium carbonate (soda ash), synthetic		
Sodium percarbonate		
Sodium silicate	In detergents.	
Surfactants	Surfactants, either stand-alone or when formulated with <u>substances permitted by Tables 7.3 and/or 7.4 to create cleaning products including detergents, soaps, degreasers, and disinfectants</u> , ~~detergents~~ shall be readily, ultimately or inherently biodegradable as per the Organisation for Economic Co-operation and Development (OECD) definitions, or readily eliminated during wastewater treatment such that harm to the environment is minimized.	Clarifying edit. No change in intention.
Wetting agents	Substances listed in Table 4.2 or 7.3, including saponins and microbial wetting agents.	

8 Facility management substances

		Rationale
8.1	Classification	
8.1.1	Facility management substances are classified according to the following uses and applications:	
a	Substances listed in Table 8.1 are pesticides (See <i>Pesticides</i> definition in clause 3 of CAN/CGSB-32.310) that may be used in and around facilities, as annotated and as specified in 8.3.2 of CAN/CGSB-32.310. These substances may also be used in traps, lures and as repellents, unless indicated otherwise within substance annotations.	
b	Substances listed in Table 8.2 may be used in facilities as annotated, to accomplish a physiological effect post-harvest.	
c	<u>Facility pest management substances and post-harvest substances are not subject to 1.4 and 1.5 of CAN/CGSB-32.310.</u>	The addition of this exception for facility pest management substances is necessary as it states in the last sentence of 1.1 Scope of 32.311 "Listed substances comply with prohibitions in 1.4 and 1.5 of CAN/CGSB-32.310," which was never the intention with the context of pest control substances.

Table 8.2 – Facility pest management substances

		Rationale
Substance name(s)	Origin and usage	
Ammonium carbonate	As an attractant in insect traps.	
Baits for rodent control ~~bait stations~~	<u>Non-poisonous baits are allowed for use with rodent control devices in locations where there is no potential for contamination of organic products, crops, or fields with prohibited substances.</u>	This annotation was fleshed out to help operators comply with the standards as the lack of an annotation was creating some confusion. There is no change in intention or requirements.
Boric acid	May be used for structural pest control (example: for ants). Direct contact with organic products is prohibited.	
Carbon dioxide (CO ₂)	For controlled atmosphere storage and for storage pest control.	
Cholecalciferol (vitamin D ₃)	Prohibited inside organic food processing and food storage facilities.	
Diatomaceous earth	Direct contact with organic products is permitted.	
Formulants	May only be used with substances listed in Table 8.1. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or derived from biological or mineral sources may be used with substances in Table 8.1. Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.	
Neem oil		

Table 8.2 – Facility pest management substances

Pheromones and other semiochemicals	For pest control. Use in pheromone traps or passive dispensers.	
Pyrethrins	Without piperonyl butoxide. Direct contact with organic products is prohibited.	
Repellents	Shall be derived from a biological source, such as sterilized blood meal, rotten eggs, hair or predator scents. May contain other biological compounds and PMRA 4a- or 4b-listed formulants.	
Soaps, ammonium	As a large animal repellent. Direct contact with organic products is prohibited.	

Table 8.3 – Post-harvest substances

		Rationale
Substance name(s)	Origin and usage	
Carbon dioxide (CO ₂)	For controlled atmosphere storage.	
~~Clove oil~~ <u>Botanical oils</u>	~~As a sprout inhibitor.~~ <u>Oils from the Lamiaceae (mint family), Apiaceae/Umbelliferae (celery family) and Myrtaceae (clove family) may be used as post-harvest sprout inhibitors.</u>	When clove oil was added to the table, the only information available on using botanical oils as sprout inhibitors focused on the efficacy of clove oil as a natural sprout inhibitor on potatoes. Up to that time, most sprout inhibitors were chemical products like chlorpropham (CIPC) - products completely unacceptable to organic standards. Time to celebrate how science has advanced: now there is evidence that other botanical oils can be effective sprout inhibitors. Furthermore, there is no reason to restrict the use exclusively to potatoes.

Table 8.3 – Post-harvest substances

		Other organic crops, such as onions, shallots, garlic and yams, may benefit from this improved listing.
Ethylene	For post-harvest ripening of tropical fruit and degreening of citrus and to control sprouting of potatoes post-harvest in holding bins.	
Formulants	Formulants may only be used with substances listed in Table 8.2. Only formulants classified as List 4A or 4B by the Pest Management Regulatory Agency (PMRA) or are non-synthetic may be used with substances in Table 8.2. Formulants classified as List 3 by PMRA may be used with passive pheromone dispensers. Formulants classified as List 4A, 4B or 3 by PMRA are not subject to 1.4 or 1.5 of CAN/CGSB-32.310. Formulants classified as List 1 or 2 by PMRA are prohibited.	
Nitrogen	For controlled atmosphere storage.	
Oxygen		