

Monthly Newsletter

Darpan

Insights from Aditi

Inside the Issue



SUSTAINABLE CROP PRODUCTION SYSTEM TO ENHANCE ECOSYSTEM SERVICES

Agriculture is an altered and managed ecosystem, and to be ecologically sustainable

MEDICINAL PLANT IN FOCUS TERMINALIA CHEBULA (ALALEKAAYI)

Terminalia chebula is found throughout South and Southeast Asia including in India.

IMMUNITY BOOSTER - YOGURT & BUTTERMILK

Loaded with goodness of healthy bacteria like Lactobacillus & Bifidobacterium, yogurt and other fermented food helps in brain development and is great to relieve anxiety.

TRADITIONAL RECIPES -CHANA DAL FARA

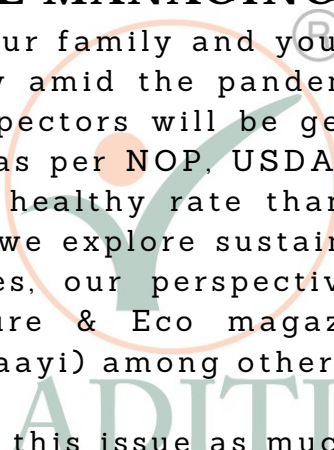
Chana Dal Fara is a very healthy and nutritious as the chana dal is rich in protein and the cooking technique used is either steaming or boiling

MESSAGE FROM THE MANAGING DIRECTOR

Greetings! We trust you, your family and your teams are taking all measures to remain safe and healthy amid the pandemic. We at Aditi are pleased to inform that few of our inspectors will be getting trained on inspections by Mayacert, Guatemala tram as per NOP, USDA standards in Sri Lanka shortly. We continue to grow at a healthy rate thanks to the belief our customers have in us. In this edition we explore sustainable crop production system to enhance ecosystem services, our perspective on organic alcohol in India which was covered in Pure & Eco magazine, medicinal plant in focus Terminalia chebula (Alalekaayi) among others.

We hope you enjoy reading this issue as much as we have enjoyed putting it together for you!

-Narayana Upadhyaya





INSIGHT: SUSTAINABLE CROP PRODUCTION SYSTEM TO ENHANCE ECOSYSTEM SERVICES

Global food demand is steadily growing, due to increasing world population (currently 1.1 percent per year and decreasing towards zero), and changes of food habits due to urbanization and per capita economic growth. With current dominant production systems it is proving difficult to increase agricultural production sustainably to meet demand, and this in a sustainable way. Additional challenges are posed in some regions with a limited agricultural potential, due to climatic conditions



Agriculture is an altered and managed ecosystem, and to be ecologically sustainable, it must deliver specific ecosystem services to society in addition to food and other biological products.

Major agro-ecosystem services

- **Climate change mitigation:** The role of agriculture in mitigating climate change consists of reducing its own emissions and enhancing the absorption or “sinks” of greenhouse gases (GHG). It is important to further unlock the agricultural sector’s potential to mitigate, adapt and make a positive contribution through GHG emission reduction, production efficiency measures including improvements in energy efficiency, biomass and renewable energy production, carbon sequestration and protection of carbon in soils based on innovation.
- **Watershed protection:** Agriculture accounts for more than half of all water use in the world and can contribute to pollution of water resources, thus influences both the quantity and quality of water available for other human uses. Changing agricultural practices could contribute to water quantity available by improving from agricultural production.
- **Biodiversity conservation:** Biodiversity is an environmental good and its conservation has assumed great importance in the effort to improve environmental management and ecosystem health. Agricultural producers can contribute to biodiversity conservation.



Achieving high yields and permanent recycling is the cornerstone of sustainability. With good agronomic management techniques, achieving high yields is fundamental, to render all possible ecological services to society

Click here to read more>>> <https://aditicert.net/sustainable-crop-production-system-to-enhance-ecosystem-services/>

IN THE MEDIA

NOW BREWING ORGANIC ALCOHOL IN INDIA

<https://www.purecoindia.in/now-brewing-organic-alcohol-in-india/>

"Organic beverages will surely be sought after by those who are health conscious - those who want ensure their drink is free from harmful chemicals. We have had enquires for certification from makers of organic drinks from jackfruit and cashew fruit." - Narayana Upadhyaya



MEDICINAL PLANT IN FOCUS: *TERMINALIA CHEBULA* (ALALEKAAYI)

Terminalia chebula belongs to the family 'Combretaceae' is an important medicinal tree species used for a number of purposes in the Indian sub continent. *T. chebula* is a medium to large-sized tree distributed throughout the tropical and sub-tropical Asia, including China and Tibet.

In India, it is found in the Sub Himalayan region from Ravi eastwards to West Bengal and Assam, ascending up to the altitude of 1,500 m in the Himalayas. This tree is wild in forests of Northern India, central provinces and Bengal, common in Madras, Mysore and in the southern part of the Bombay presidency.

Package of practices:

Soil and Climate:

In the natural habitat of the species, temperature ranges between 36 °C and 45 °C and rainfall ranges from 1200 mm to 3000 mm per annum. It is capable of growing on different types of soils, but attains best development on loose well-drained soils, such as sandy loam as well as clayey loam. It grows in open areas in the forest, forming top to middle canopy.

Propagation material:

Seed is the most appropriate material for this plant's propagation. Fruit is collected in summer in May to June. Fruits are collected when they turn yellow. The seeds can be collected as soon as they fall on the ground and are dried under shade. The seeds can be stored in gunny bags for one year, but fresh seeds germinate quicker.

Nursery technique

Raising propagules: The seedlings are raised from seeds in a nursery in July with the onset of monsoon season. Seeds may be sown in prepared beds or polybags. Germination is slow, but may be improved by pre-treating the seeds. The soil in beds and polybags should have sufficient proportion of organic manure, at least in the ratio of 2:1.

Generally, large-sized polybags, at least 35 cm × 22 cm, are used, since the root growth is comparatively faster and the seedlings are required to be kept in the nursery for at least one year. The nursery should be partially shaded against the sun.

Propagule rate and pre-treatment: About 5 kg seeds are required for raising stock for planting in one hectare of land. The de-pulped seeds should be either treated by fermentation process for a period of 15 to 20 days or the seeds may be clipped at their broad end and then soaked in water for a period of two days before sowing in the nursery beds.

Land preparation and fertilizer application: The land is tilled and levelled properly to make it porous and friable. Pits of size 60 cm × 60 cm × 60 cm are dug at a spacing of 6 m × 6 m. The soil of each pit is mixed with 15 kg FYM (farmyard manure) and vermi-compost and refilled before transplanting of seedlings.

Transplanting and optimum spacing:

Transplantation of one year old seedlings is done in the next monsoon. A spacing of 6 m × 6 m enables a crop stand of 280 to 300 plants per hectare.

Intercropping system: Since this is a long-term crop, intercropping with short duration crops is preferable, particularly with climbers like Gudmar, Malkangni, Guduchi, Ratti and so on as in *Terminalia arjuna*. Shade-loving crops like Curcuma, Zingiber and *Alpinia galanga* may also be intercropped.

Disease and pest control: The plants are able to survive attacks of seasonal insects and pests.

Crop maturity and harvesting: Flowering and fruiting generally commence after 8 to 10 years of planting in the summer season. The tree starts yielding fruits at this time. The trees live for more than 50 years and continue to yield fruits every year.

Post-harvest management: The collected fruits are well dried in shade for a few days, with moisture content not more than 10% and stored in well ventilated containers/baskets in damp-proof, cool rooms.

Yield: Approximately 40 to 50 kg of dry fruits are obtained per tree per year after it attains six years of age. This gives an average yield of about 12.6 quintals/hectare.

Certification- The National Medicinal Plant Board (NMPB), in collaboration with the Quality Council of India (QCI), India's apex quality facilitation body, has developed a voluntary certification scheme for medicinal plant Produce (VCSMP) based on good agricultural and field collection practices.



TRADITIONAL USE OF TRIPHAL

The species is widely used in combination with *T. belerica* and *Emblica officinalis* in Triphala, an important combination of three fruits and is extensively used in Indian subcontinent as an Ayurvedic medicine.

Chemical constituents:

The main constituents are anthraquinone glycoside, chebulinic acid, tannic acid (20 to 40%) and vitamin C in fruits. Arachidic, behenic, linoleic, palmitic and stearic acids are also found in the fruits.

- Triphala is believed to remove toxins and other undesirable accumulations from body, improve digestion and assimilation and acts as antioxidant.
- It is also beneficial in chronic lung diseases and conditions with raised cholesterol levels.
- *T. chebula* is routinely used as traditional medicine by tribes of Tamil Nadu to cure several ailments such as fever, cough, diarrhea, gastroenteritis, skin diseases, candidiasis, urinary tract infection and wound infections.
- Unripe fruits are useful medicine for diarrhea, dysentery and leprosy.
- Ripe fruits of *T. chebula* are purgative and used in medicines such as laxative, stomachic and tonic.
- Dry fruits possess a potential broad spectrum of antihelminthic, antimicrobial activity against both Gram positive and Gram-negative bacteria.
- It possesses antiviral activity against Herpes Simplex Virus type-1 (HSV-1), Human Immune Deficiency Virus-1 (HIV-1) and Cytomegalovirus.

- Aqueous extract of *T. chebula* fruits exhibits antifungal activity against a number of dermatophytes and yeasts.
- The oil extracted from the seeds is useful as a hair tonic. Seventy percent methanol extract and phenolic compound of *T. chebula* fruits decrease cancer cell viability, cell proliferation and induced cell death in a dose dependent manner
- It is an important ingredient of 'triphala', an Ayurvedic formulation used in the treatment of constipation, colic pain and kidney dysfunctions, eye diseases, and sore throat.

YOGURT & BUTTERMILK- IMMUNITY BOOSTER



Loaded with the goodness of healthy bacteria like *Lactobacillus* and *Bifidobacterium*, yogurt and other fermented food helps in brain development and is great to relieve anxiety.

It also offers gut-friendly micro organisms that aid in the process of digestion during summers. Eating yoghurt helps in reducing chronic inflammation which is responsible for anxiety, stress, and depression. You can consume curd in the form of smoothies, buttermilk, sweet lassis and raita.

Drinking buttermilk helps to cool down your body and improve metabolism. It is also loaded with vitamins, and minerals which help to restore your body & with natural energy if you are feeling drained by the heat.



Ingredients:

For Filling:

- 1 cup chana dal soaked (overnight or 4-5 hours)
- 7 - 8 garlic chopped
- 2 green chillies
- 1/2 cup coriander leaves
- 1/2 tsp cumin seed
- A pinch asafoetida to taste salt

For Dough:

- 1 1/2 cups wheat flour
- 1 tsp salt
- water for kneading

For Fried Fara:

- .2 tsps ghee
- .1 tsp mustard seed
- .1/2 tsp red chilli powder
- .5 - 6 curry leaves
- to taste salt



Instruction for cooking :

- In a mixer jar add dal, coriander leaves, asafoetida, salt, garlic, cumin seeds.
- Blend everything well together to make a smooth paste using little water. Don't add more water as we require a thick paste.
- Keep aside and prepare the dough
- Knead a soft dough by using wheat flour, salt and water.
- Divide the dough into equal proportion and roll each portion into thin pooris.
- Place 1 tsp of the filling and fold it to make a semi-circle and seal the edges.
- Repeat the same process for the rest of the dough and filling.
- Now there are two methods either steam them or add them to the boiling water.
- For boiling water method: Boil water in a deep pan and add 1 tsp oil and add the faras to it. Cook them till they become soft and float on the water surface.
- To check it's cooked or not insert a knife, if it comes out clean it is done. Remove, cool and cut into pieces.
- For steaming method: Place the faras on a steamer plate or use your idli cooker to cook it.
- In a pan add ghee, mustard seeds, curry leaves once the mustard seeds start to crackle, add the cut pieces of fara.
- Sprinkle some red chilli powder and salt. Fry it till the edges become crispy or as per your liking.
- Serve immediately with green coriander chutney or with hot tea.

GLIMPSE OF INSPECTION ACTIVITY

Photographs taken during INSPECTION of Organic Farms / Handler



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