



Monthly Newsletter

# Darpan

Insights from Aditi

Inside the Issue



## ORGANIC FARMING ON SOLVING CLIMATE CHANGE

Mixed organic farms practice highly efficient recycling of manures from livestock and of crop residues by composting. Leguminous crops deliver additional nitrogen in enough quantities.

## MEDICINAL PLANT IN FOCUS GYMNEMA SYLVESTRE (MADHUNASHINI)

Madhunashini (*Gymnema sylvestre*) is an important medicinal climber acclaimed for its anti-diabetic properties.

## IMMUNITY BOOSTER - CUCUMBER

Cucumber is inexpensive, packed with water and helps to detoxify your body overall body. It is an excellent coolant.

## TRADITIONAL RECIPES -KOLLU PUDI

Horse Gram Chutney Powder " a flavorful powder that's a perfect accompaniment for almost all South Indian breakfast be it with Idli / Dosa / Paniyaram / rotti etc

## MESSAGE FROM THE MANAGING DIRECTOR

Greetings! We hope, you, your family and team are safe and keeping good health. We at Aditi are pleased to inform that all our staff has been vaccinated to ensure we make our workplace safe while ensuring safety of customers we interact with. In this edition we explore the role of organic farming in its impact on climate, interview with Dr. G. K. Vasantha Kumar, Forder Director- Department of Horticulture on the future of agriculture, medicinal plant in focus Madhunashini (*Gymnema sylvestre*) among others. We hope you enjoy reading this issue as much as we have enjoyed putting it together for you

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-Narayana Upadhyaya





# INSIGHT: ORGANIC FARMING- ON SOLVING CLIMATE CHANGE

The increasing prevalence of ecologically sustainable products in consumer markets are generally assumed to curtail anthropogenic impacts on the environment. One of the most sustainable approaches to food production is Organic agriculture. A one percent increase in its acreage could reduce emissions by 0.049%. It revolves around recycling techniques and low external input with high harvest strategies. The main principle is based on enhancing soil fertility and diversity at all levels and makes soils less susceptible to erosion. These practices generally have positive impacts on the environment per unit of area, but not necessarily per product unit. Our food system has substantial impact on climate change and organic agriculture helps to mitigate the burning issues at a social and environmental front as well.

In the Rodale Farming Systems trial in the mid-Atlantic region of the continental USA, the manure-based organic system sequestered 1,218 kg carbon per ha and year, the legume-based stockless organic system sequestered 857 kg, and the conventional system sequestered 217 kg



18 organic and 10 conventional farms in Bavaria, Germany, were compared to calculate the organic farms' annual sequestration at 402 kg carbon, while the conventional farms had losses of 202 kg. It was estimated that compost application and cover crops in the rotation were particularly adept at increasing soil organic matter.



Agriculture can help mitigate climate change by either reducing GHG emissions or by sequestering CO<sub>2</sub> from the atmosphere in the soil. The application of improved agricultural techniques (e.g., organic agriculture, conservation tillage, agroforestry with native tree species) reduces or stops soil erosion and converts carbon losses into gains. Consequently, considerable amounts of CO<sub>2</sub> are removed from the atmosphere. Organic agriculture already provides effective methods to reach both of these goals. If agricultural practices remain unchanged, the loss of organic carbon in typical arable soils will continue and eventually reach a new steady state at a low level.

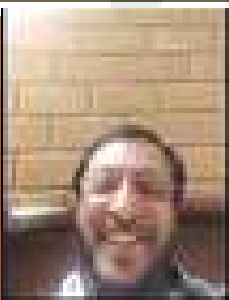
**Click here to read more>>> <https://aditicert.net/http-aditicert-net-wp-content-uploads-2021-07-organic-farming-on-solving-climate-change-210629kn-2-pdf/>**

## SPOTLIGHT

IN CONVERSATION WITH DR. G. K. VASANTHA KUMAR- FORMER DIRECTOR- DEPARTMENT OF HORTICULTURE



<https://www.youtube.com/watch?v=6RbnCmZWmEQ&t=108s>



In conversation with Dr. G. K. Vasantha Kumar- Former Director- Department of Horticulture

Dr. Kumar shares insights on the future of agriculture and the out of box thinking that needs to be adopted to sustain it.



## MEDICINAL PLANT IN FOCUS: *GYMNEMA SYLVESTRE* (MADHUNASHINI)

Madhunashini (*Gymnema sylvestre*) is an important medicinal climber acclaimed for its anti-diabetic properties. Its preparations have profound actions on the modulating taste, particularly suppressing sweet taste sensations. For this reason, *Gymnema sylvestre* is known in Hindi as gurmar or “sugar destroyer”. It is widely found growing in the tropics of Africa, Asia and Malaysia. In India, this plant is found growing in abundance in the forests of Karnataka, Tamil Nadu and Bihar. Due to its raising demand in South East Asian countries, the plant is becoming endangered particularly in Tamil Nadu.

### Package of practices:

#### Soil and Climate:

The species grows on a variety of soil in different localities. Red sandy loam or medium deep black soil is ideal for this crop. The plant is sensitive to water logging and hence its cultivation on such soil should be avoided. Madhunashini prefers tropical and sub-tropical type of climate and also grow even in dry areas. The areas with high or medium well distributed rainfall are suitable for its cultivation.

#### Propagation material:

Terminal and axillary cuttings with three to four nodes from one year old plants are the best planting material. Seed germination is poor hence; plants are preferably raised vegetatively through cuttings. Cuttings can be obtained throughout the year in moist humid conditions of South India. In North and Central India, cuttings are preferably planted in February and March.

#### Nursery technique:

Raising propagules: Styrofoam trays or polybags are filled with soil, sand and FYM (farmyard manure) in 1:2:1 ratio and terminal or axillary cuttings are planted in them. Vermi-compost may be used in place of FYM.

February to March is the best season for planting the cuttings in nursery, especially in North Indian conditions. The cuttings are placed under humid conditions in shade houses or mist chambers for development of roots. Rooting is initiated within a month of planting. Seed setting is poor in this species and the seeds show a maximum germination percentage of 50 to 55% when sown in soil mixed with vermin-compost.

#### Propagule rate and pre-treatment:

About 6700 rooted cuttings are required for plantation in 1 hectare of land. At 80% survival, about 8400 cuttings would be required. The stem cuttings are dipped in cow urine mixed with tender coconut water for thirty minutes before planting in the nursery to promote rooting.

**Land preparation and fertilizer application:** The field is ploughed to turn the soil and make it weed free. About 10 tonnes of FYM is mixed with the soil as a basal application at the time of land preparation.

**Transplanting and optimum spacing:** The period between June and August is best for transplanting the rooted plants in the field. An optimum spacing of 1 m × 1.5 m is recommended for a crop stand of about 6700 plants per hectare

**Intercropping system:** When the plants are young, green gram can be grown as an intercrop. Alternatively, the crop can be raised beneath the tree species that serve as host or staking for this twiner.


**Disease and pest control:** An aphid (*Aphis* sp.) is observed to attack the apical tender parts of the plant during rainy season. However, if the damage is not severe, no control measures are required. Use of chemical pesticides should be avoided since leaves are to be regularly plucked for harvest.

**Crop maturity and harvesting:** Leaves that are about 30 to 40 days old can be plucked for use and harvesting can be done every three months. However, better yield is obtained after one year of growth.

**Post-harvest management:** Leaves are dried in shade and the dried leaves are packed in polythene bags. The moisture content of the dry leaves should be less than 8% to prevent deterioration.

**Yield:** An average of 5 to 6 kg dried leaves per plant can be obtained from at 3 to 4 years old plant yielding about 10,000 to 15,000 kgs of dried leaves per hectare. The crop can be cultivated for 10 to 15 years under good management.

**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 plants based on good agricultural and field collection practices. Aditi now offers VCSMPP certification for medicinal plants. Please mail us at [aditi@aditicert.net](mailto:aditi@aditicert.net) for more information.



## TRADITIONAL USE OF GYMNEMA SYLVESTRE (MADHUNASHINI)

*Madhunashini* is an ancient and traditional remedy to increase the functioning of the brain by ameliorating high blood sugar levels. The potent antioxidants present in the active constituents improve the memory capacity, focus, concentration, calmness, alertness of an individual

### Chemical constituents:

The produce contains 7 to 9.6% of gymnemic acid as active principle. Besides, alanine, aminobutyric acid, isoleucine, valine, adenine, choline, gymnamine (alkaloid) and many other ingredients are isolated from leaves.

- Gymnema has pronounced effects on blood sugar, at least among diabetics.
- Gymnema extracts even play a role in the treatment of Type 1 diabetics, who typically need daily injections of insulin to control the disease. Taking a specific combination of gymnema extract, hydroxycitric acid and niacin-bound chromium by mouth for 8 weeks might reduce body weight in people who are overweight or obese.
- Gymnema taken orally lowers blood glucose levels and improves blood fat and cholesterol profiles.
- This climber is extensively used in almost all the Indian system of medicine as a remedy for rheumatism, cough, ulcer and pain in eyes. It is also useful in inflammations, dyspepsia, constipation, jaundice etc., Roots have been reported as remedy for snakebite.

- The anti-diabetic property of the plant is attributed to the presence of mixture of triterpenes and saponins in the leaves.
- These have been designated as gymnemic acids A, B, C and D, which have the gymnemagenin and gymnestrogenins.



## CUCUMBER- IMMUNITY BOOSTER



Cucumber is inexpensive, packed with water and helps to detoxify your body overall body. It is an excellent coolant.

This cool and crisp energizing green will stave off problems of constipation; enhance your immunity and tame inflammation while also calming sunburn.

Along with cleansing your body, the presence of silicon and sulphur in cucumber is excellent to support hair growth and volume. The best way to consume cucumber is adding it in salads or drinking cucumber juice

# TRADITIONAL RECIPES - KOLLU PUDI



## Ingredients:

### Instruction for cooking :

- Heat 1 tsp of oil in a pan and roast horse gram, curry leaves, garlic cloves, red chilli, asafoetida all together on a low flame for minimum 5 minutes.
- Keep stirring.
- Transfer it in a plate and let it cool down. Now add all these roasted ingredients with salt in your food processor and coarsely grind it. Store it in a dry, air tight container

- Horse gram/Kollu – 1 cup
- Red chilli – 5
- Asafoetida/ hing – ¼ tsp
- Garlic cloves – 3
- Curry leaves – 1 sprig
- Salt – 1 tsp
- Sesame Oil/cooking oil – 1 tsp

## GLIMPSE OF INSPECTION ACTIVITY

Photographs taken during INSPECTION of Organic Farms / Handler



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