



# ECOLOGICAL FARMING- RETURN TO TRADITION

Harini. S<sup>1</sup>; A. Jenifer<sup>1</sup>; K. Jevasri<sup>1</sup>; N. Indianraj<sup>2</sup>

<sup>1</sup>UG Scholar

<sup>2</sup>Assistant Professor

Department of Agronomy, Roever Agricultural College, Perambalur, Tamil Nadu

Corresponding Author Mailid: [harinisakthive1943@gmail.com](mailto:harinisakthive1943@gmail.com)

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**Abstract:** *This article deals the importance and necessity of ecological farming. Agriculture is the backbone of India. We are all depend on the agriculture for food hence to get higher yield, we use lot of chemicals like harmful pesticides, fertilizers in cultivation of crops. These chemicals make the fertility loss of soil and also cause health issues to the consumers. The best solution to avoid these hazards, we should follow the ecological farming .Ecological farming is the system of production that excludes the synthetic inputs and includes agronomic, biological and mechanical methods like crop rotation, animal manures, organic waste, animal waste etc. which promotes the eco-friendly production.*

**Keywords:** *Organic inputs, ecological production and soil health.*

## Introduction

Ecological farming is the most conscious efforts inspired people to create the best relationship between the earth and men. Ecological farming is very much native to India. The only natural way to protect ourselves from the deadly chemicals is ecological farming. Necessity for ecological farming in India is increasing. The main principle of ecological farming is to protect the ecology and health (Meena *et al.*2013). Nowadays the agriculture in India has turned into traditional practices to create healthy bond between human and ecology. According to FiBL survey 2021, India holds a unique position among 187 countries practices organic agriculture India is home to 30% of total organic producers in the world having 2.30 million hectare. As per FAO's definition, organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health includes biodiversity, biological cycle, soil biological activity and this is accomplished by using on farm agronomic, biological and mechanical methods in exclusion of all synthetic off farm inputs.



## **Why ecological farming**

The entire farming practices are based on intimate understanding of nature's way of replenishment. The long term use of synthetic inputs in farming practices, turns the fertile land to desert land. It helps to maintain environmental level and reduce the pollution level. Thus, it leads to the development of both agriculture and environment ecological farming products also plays a major role in economic sector. It has great export value in India. Thus it increases the income level of an individual. Ecological farming can be viable alternative production methods for farmers but there are many challenges, one key to success is being open to alternative organic approaches to solve the production problems. It determines the cause of the problem and assess strategies to avoid or reduce the long term problem rather than a short term fix for it.

## **Methodologies:**

Ecological farming uses a variety of methods to improve the soil fertility. More biological waste are disposal from both rural and urban areas. Instead of using synthetic inputs we can reuse those biological waste as manures in farming. It focuses on producing crops with a high nutritional level. The motive of ecological farming is to safeguard the health of living organisms including humans and those in the habitat. Some important methodologies are

- Organic manures
- Cultural practices
- Farming practices.

### **1. Organic manures:**

To produce a sustainable crop production organic manure plays a major role. It includes green manure, compost, panchgavya, dashagavya, farmyard manure, oil cakes etc.

#### **1.1. Green manure:**

Green manure corps like daincha, kolunchi are in field. They are uprooted and turned incorporate into the soil. Thus the green manure corps acts as a nutrients to the soil and improves the fertility of the soil.

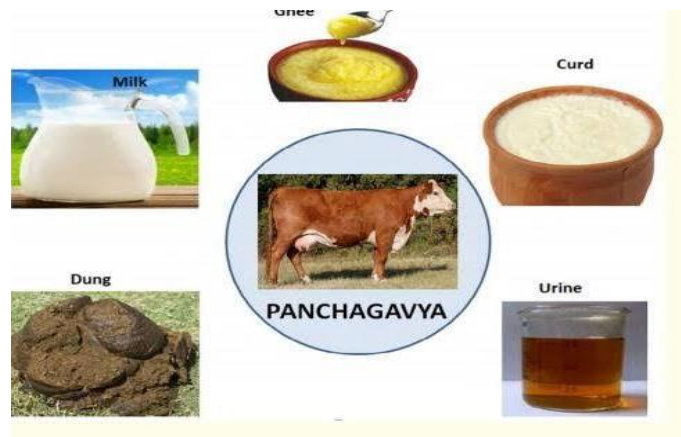


### 1.2. Vermicompost:

The one of the natural fertilizers used in ecological farming is vermicompost. The organic waste matter like paddy straw, sugarcane baggase, rotten vegetables, fruits etc., are decomposed by using earthworms. The earthworms make the soil enriched with nutrients that enhance the soil quality and improves the yield of the crop.

### 1.3. Panchagavya:

Panchagavya is an organic product that has the potential to play to role in growth promoting and provides immunity to the crop. It consists of nine products cowdung, cow urine, milk, curd, jaggery, ghee, banana, tender coconut and water. They are suitably mixed and used they have a splended effect. Panchagavya is not only used as a manure but also in seed treatment and seed storage.



### 1.4. Dasagavya:

Dasagavya is an organic product consists of ten products. It is made up of panchagavya plus plant extracts. The plants used are Azadiracta indica, Calotropis dp, Jatropha curcas, Pongamia pinnata, Datura metal and Adathoda basically. It has the potential to promote growth and provides immunity to the crops.



## 2. Cultural practices:

The ecofriendly, cultural practices provide lowest input and gives the healthy yield. Such practices include mulching, pest control and weed control.

### 2.1. Mulching:

Mulching is the process or practices of covering the soil (ground level) make more favourable conditions for plant growth, development and efficient crop production. Mulch is the term meaning “covering of the soil”. The natural mulches includes leaf, straw, dead leaves and compost have been used. It also helps in water conservation and weed control.





## 2.2. Pest management:

Deep summer ploughing is the effective method to control pest. Most of the pests lay eggs in soil or pupate in soil. By deep ploughing the eggs and pupa of pest come out from the soil and die due to summer heat.

*Biological control of the pest by using the natural enemies such as Lady Bird beetle, predatory gall midges, hover fly larvae against aphids and psyllids. These natural enemies control the pest population in the field. Some plants contain toxic components to the insects. The toxic components are extracted and apply on infested crops to control pest. Example: Neem, chilli, pepper, garlic extract etc.,. These botanical pesticides are most effective against grasshopper, plant hopper, aphids, jassids, diamondback moth, Mexican bean beetle, leaf minors especially in rice leaf hopper and cotton jassids.*

## 2.3. Weed management:

Deep summer ploughing is the effective method to control weeds. By deep ploughing, weed seeds present under the soil are exposed to the ground level. There by weed growth is controlled. Mulching with the organic waste materials also control the weed growth. The principle of mulching is to inhibit the light to weeds and suppress their growth. This provides the physical pressure to the weeds.

Crop rotation is also effective in weed control.

Non synthetic weed control agent like corn gluten meal(pre emergence herbicide) is also used in weed management. **Ex:** In paddy field, *Cyperus sp.* is the weed that is controlled by using pigs. Pigs are allowed in field after puddling, the pigs easily identify the bulbs of *Cyperus sp.* weed and eat it. This is one of the traditional practices to control weeds in paddy field.

## 3. Farming practices:

Different traditional farming practices may also help in weed control and pest management. Some practices are crop rotation, intercropping and using cover crops which are explained below.

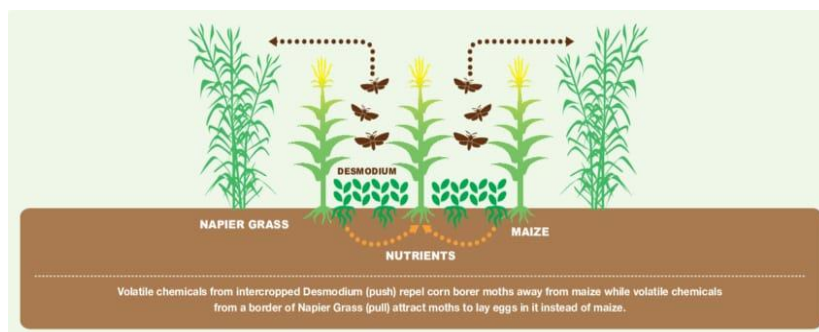


### 3.1. Crop rotation:

Crop rotation is a farming techniques where farmers do not cultivate the same crop on same field every year instead they grow different crops in the rotation to maintain soil's health. Crop rotation is a very beneficial farming techniques that replenishes the soil naturally as different plants contribute different number to the soil. This techniques helps control of pest, weeds, insects etc by disrupting their habitat.

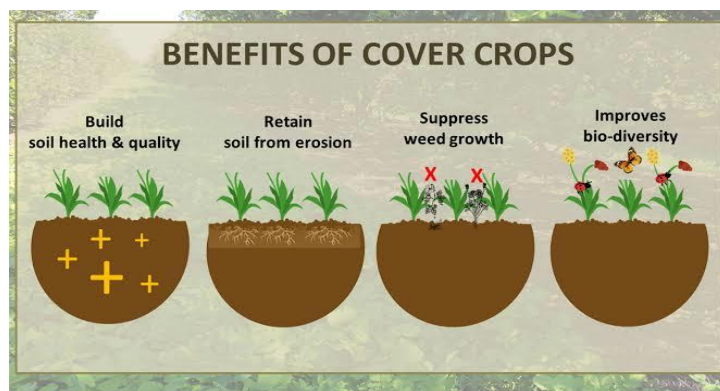
### 3.2. Intercropping:

Intercropping is the practice of growing two or more crops in a field. The most common goal of intercropping is to produce greater yield. Most importantly it control the pest by using push pull mechanism. It is an intercropping strategy for controlling agricultural pests by using repellent 'push' plant and trap 'pull' plants. **Ex:**Cereal crop like maize/sorghum Intercropped with Desmodium (push) and napier grass (pull) this prevent from stem borers.



### 3.3. Cover crops:

In agriculture cover crops are plants that are planted to cover the soil rather than the purpose of being harvested. Cover crops manage soil erosion, soil fertility, soil quality, water, weeds, pests, disease, biodiversity and wildlife is an agro ecosystem – an ecological system managed and shaped by humans. Cover crops contribute to soil quality improvement principally through their decomposition by soil microbes. The products of decomposition, while generally adding to the soil organic matter reservoir, benefit the soil in two specific ways, i.e., through soil physical conditioning and through fertility building.(Edwards L and Burney J.2005).



### Conclusion:

Ecological farming works in harmony with nature rather than against it. This involves using techniques to achieve good crop yield without farming the natural environment and people. Ecological farming has the bright prospect in the near future with advantages of soil and biodiversity preservation, environment conservation and healthy citizens. At this point we must switch over to some other farming process like organic farming to help the environment to heal naturally (Meena *et al.*2005). Today, it should be our priority to promote ecological farming to decrease the use of synthetic fertilizer and pesticides etc. Moreover the ecological farming is one of the best alternatives to strengthen soil quality without using any kind of harmful chemicals.

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