

Organic farming

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Organic farming is a technique which involves the cultivation of plants in natural ways. This process involves the use of biological materials, avoiding synthetic substances to maintain soil fertility and ecological balance and thereby minimizing the pollution and wastage.

It is an integrated farming system that strives for sustainability, the enhancement of soil fertility and biological diversity while, with rare exceptions, prohibiting synthetic pesticides, antibiotics, synthetic fertilizers, genetically modified organisms, and growth hormones. **Components of organic farming**

- ✓ Fertilizers management
- ✓ Weed control
- ✓ Insect pest and disease management

Fertilizer Management

World population is increasing day by day so food and fibre need also increases with population and will increase in passage of time. To fulfil the requirements of population should need high yield that is possible by increasing cultivated area or yield. To get higher yield fertilizers are applied to provide nutrients to the crop plants. But by the use of fertilizers land, water and air is polluted that cause serious disease in human beings and animals. So, in order to avoid these problems organic farming plays important role in organic farming. We can use only natural ways to increase yield or to fulfil the demand of population.

MANURES

Manures are simply defined as the organic materials that are derived from animals, humans and plant residues which contain different nutrients in complex organic forms. Manures can be grouped in two major categories as –

- ✓ Bulky organic manure
- ✓ Concentrated organic manure

Bulky organic manures

Bulky organic manure contains small percentage of nutrients and they are applied in larger quantities.

Some of the well-known bulky organic manures are-

- Farm yard manure
- Sheep and goat manure
- poultry manure
- Green manure
- Crop residues

Farm yard manure

- FYM refers to the decomposed mixture of dung and urine of farm animals.
- The quantity of nutrients in manures varies with type of animal, feed composition, quality and quantity of bedding material, length of storage and storage conditions.
- The farm yard manure contains 150 kg of N, 35 kg of P, and 140 kg of K.

Sheep and Goat manure

Droppings of sheep and goat contains higher nutrients than farm yard manure and compost.

An average the manure contains 3% of N, 1% P, 2% k.

Poultry manure

- It ferments very quickly, 50% of its N is lost in 30 days
- It contains 3.03% N, 2.63% P, 1.4% K.

Green manures

Many crops are grown and at vegetative stage mix up in the soil just to improve the organic matter of the soil. At vegetative stage these crops are easily decomposed in soil and worked like inorganic fertilizers due to having low C:N ratio.

Crop Residues

Crop residues can be an important source of nutrients to subsequent crops. It is well documented that different quantities of N, P, K and minor nutrients are removed from and returned to the soil depending on the crop species concerned

The quantity and quality of crop residues will clearly influence the build up of soil organic matter.

Concentrated organic manure

They have higher nutrient content than bulky organic manures. They have

- Oil cakes
- Bio-fertilizers
- Compost

Oil Cakes

After oil is extracted from oilseeds the remaining solid portion is dried as oil cake which is used as manure.

Compost

Mass of rotten organic matter made from waste is called compost.

- Farm compost
- Town compost

Bio fertilizers

It is defined as preparations containing living cells of efficient strains of microorganisms that helps crop plants uptake of nutrients by their interaction with rhizosphere when applied through seed and soil. Most common bio fertilizers are-

- Nitrogen fixing
- Phosphorous solubilizing
- Phosphorous mobilizing
- Plant growth promoter

Weed management

Weed can decrease the yield of crop upto 60% so weeds are killed by herbicides that cause pollution and resistance in crop plant in organic farming system weeds are killed by –

- Allopathy
- Rotation
- Organic mulch
- Integrated weed control

Allopathy

Crops having allelochemicals can be used as growth promoter and also for weed control through

- Use of mulch of these crops
- Use these crops in rotation
- Use these crops in intercropping
- Use crop's extract as foliar spray

Crop rotation

Use of legumes crops that provide nutrients by biological nitrogen fixation. Use of allopathic crops that suppress the growth of weeds. Continues monoculture is unacceptable due to the likely increased pressure from weeds, pests and diseases as well as difficulties of maintaining soil fertility.

Organic mulch

Organic residues, grassdipping, leaves, hay, straw, animal manure etc. organic mulches are temporary decay overtime.

They add organic matter in the soil. Increase water retention capacity

Provides nutrients

Supress weeds.

Integrated weed control

1. Indirect methods- Indirect methods include

- Preventive methods
- Cultural methods
- manual methods

2. Direct methods- Direct methods include- mechanical methods and biological control

Insect, Pest and Disease Management

It includes -

- Agronomic practices
- Mechanical control
- Biological control
- Genetic control

- Natural plant products(allelochemicals)

Benefits of organic farming

- It promotes biodiversity.
- It reduces farm pollution.
- Reduces toxic substances in the environment.
- safer water
- Better tasting food
- Better soil
- Preservation of culture and agriculture
- Reduce production cost because farmers do not use expensive chemicals.

Ill sides of organic farming

- Expensive products
- More labour
- Lack of awareness
- Financial problem
- No smooth marketing channels.
- Poor infrastructure and cold units.
- lack of marketing knowledge