

## Future Aspects of Organic Farming in Agriculture

Deepak Singh<sup>1</sup>, Vipin Kumar<sup>2</sup>, K. N. Singh\*<sup>2</sup> and Deepali Suryawanshi<sup>2</sup>

### Introduction:

Organic farming has been a notion for a long time and has been used since then. By using organic fertilizers like compost manure, green manure, ecologically based pest treatments, biological fertilizers produced from animal and plant wastes and nitrogen-fixing cover crops organic farming creates healthy soils, healthy food, healthy plants and healthy surroundings. Organic farming is a holistic production management system that promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity.

### Status of organic farming in India

Organic farming is an incipient stage in India. About 2.78 million hectare of farmland was under organic farming as of March 2020, according to the union Ministry of Agriculture and Farmers' welfare. Some major organic products grown in India are oilseeds, millets, cereals, spices, coffee, tea etc. These products are highly produced and exported by India. North eastern states like Sikkim, Tripura, Meghalaya, and Uttarakhand are the major states to cultivate organic products in India.

Sikkim is the only Indian state to have become fully organic so far. Other top three states - Madhya Pradesh, Rajasthan and Maharashtra estimate for about the area under organic cultivation. The growth of organic farming in India was quite dawdling with only 41000 hectares of organic land comprising merely 0.03% of the total cultivated area. Now The Government of India has implemented a number of schemes and programs such as the Paramparagat Krishi Vikas Yojana, Organic Value Chain Development in Northeastern region Scheme, Rashtriya Krishi Vikas Yojana, National Project on Organic Farming and National Mission for Sustainable Agriculture. India ranked 8<sup>th</sup> with respect to the land of organic agriculture and 88<sup>th</sup> in the ratio of organic crops to agricultural land as per Agricultural and Processed Food Products Export Development Authority and report of Research Institute of Organic Agriculture.

### Principles of organic farming

Organic farming systems are based on four strongly interrelated principles which are established by Federation of Organic Agriculture Movements in September, 2005-

*Deepak Singh<sup>1</sup>, Vipin Kumar<sup>2</sup>, K. N. Singh<sup>2</sup> and Deepali Suryawanshi<sup>2</sup>*

*<sup>1</sup>Faculty of Agriculture, Guru Kashi University Talwandi Sabo, Bathinda (Punjab)*

*<sup>2</sup>School of Agriculture, ITM University, Gwalior, 474001, M.P.*

- ✓ Principle of health
- ✓ Principles of ecology
- ✓ Principles of fairness
- ✓ Principles of care

### 1. Principles of health

- Organic agriculture aims to preserve and strengthen the health of soil, plants, animals, peoples and the planet as a whole and invisible.
- Integrative nature of health
- Organic farming to sustain and enhance the health of ecosystem and organisms.
- Organic farming to produce high quality, nutritious foods.

### 2. Principle of ecology

- Organic farming should be based on-
  - ✓ Living ecological system and cycles.
  - ✓ Work with ecological system.
  - ✓ Match with them
  - ✓ Help to sustain ecology.
- Nourishment and health are achieved through the ecology.
- Inputs of organic farming should be reduced.

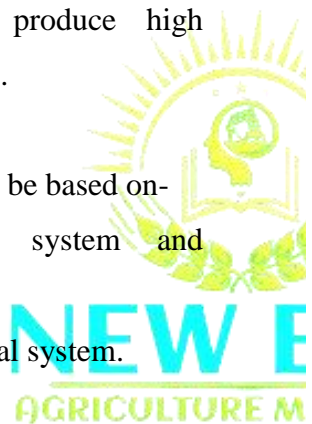
### 3. Principle of fairness

- Organic farming should be based on relationships that guarantee justice with regard to the common environment and equal opportunities in life
- Fairness is characterized by equity, respect and justice

- Produce a sufficient supply of good quality food and other products

### 4. Principle of care

- Organic farming should be managed with care to protect health and well being of current and future generations and the environment
- Should enhance efficiency and increase productivity, but this should not be at the risk.
- Precautions and responsibilities are the key of concerns



**Potato**



**Cauliflower**

**Figure-1: Cultivation of potato and cauliflower by organic methods**

## Methods of organic farming

Organic method is done to release nutrients to the crops for increased sustainable agriculture production in an eco-friendly and pollution free environment and for healthy food. The principal methods of organic farming contain crop rotation, green manure, FYM, compost, crop diversity and biological pest control.

### 1. Crop rotation

It means the changing of species on the same field season by season. It will cycle through cash crops (such as vegetables), cover crops (grasses and cereals) and green manures (often legumes). It is required in organic production because it is such a useful tool in preventing soil disease and control many soil borne nematode pests, and for building healthy soils. Some major advantages of crop rotation are-

- Improved soil fertility and structure
- Help to controlling of disease and insect-pest
- Increases soil organic matter
- Control soil erosion
- Helps in increasing of crop yield

### 2. Green manure

All green decomposed material used as manure is called green manure. Green manure builds up soil structure and improves tilth. It increases the water holding capacity of light soils and promotes formation of crumbs in

heavy soils leading to aeration and drainage. It can be obtained by growing green manure crops (such as dhaincha, sunhemp) or by collecting green leaf from plants grown in water land.

### 3. Compost

Compost is a way of returning safe, easily mineralized, organic matter or humus to the soil. It is especially important in organic farming, where the use of synthetic fertilizers is not permitted. Compost improved soil structure, provided a wide range of nutrients for plants.

### 4. Crop diversity

Crop diversity is the variance in genetic and phenotypic characteristics of plants used in agriculture. Crop diversity is fundamental to agricultural growth. Crop diversity enables farmers and plant breeders to develop higher yielding, more productive varieties that have the improved quality characteristics required by farmers and desired by consumers.

### 5. Biological pest control

It is a natural method of controlling pests, weed and plants diseases using other organisms. It counts on predation, parasitism, herbivore or other natural mechanisms. Examples of biological pest control include the destruction of the citrophilus mealy bug in California by two parasitic species of chalcid wasps imported from Australia.

## Benefits of organic farming

1. This practice is profitable to farmers because it requires less water, expensive chemical fertilizers are not used and no expenditure on expensive pesticides and weedicides.
2. Less ground, water and air pollution because there is no leaching of nitrates, no water contamination and no chemical droplets in air.
3. It produces nutritional, poison free and tasty food as it contains sufficient amount of vitamins and minerals along with other nutrients, and these foods are free from contamination with health harming chemicals.
4. It increases soil nourishment by increasing soil organic matter, improving fertility of saline and increasing beneficial organisms in the soil.
5. Organic farming increases carbon sequestration by changing atmospheric carbon dioxide into soil carbon which helps in reducing global warming.
6. Promotes environment friendly practices which reduce energy requirements for production system, help in mitigating climate change, protect biodiversity and maintain Reduce, Reuse, Recycle process.

7. Provide employment to labour in rural area which is important to labour and rural economy.

## Conclusion

From the above study we concluded that when compared to traditional food, the practice of organic farming offers a high nutritional value. Additionally, organic farming has the ability to address the problem of food security. Because it renews the soil, improves the foundation of natural resources, and maintains biological production at levels consistent with the carrying capacity of the controlled agro-ecosystem, organic agriculture is a viable alternative. It is the best and most practical replacement for conventional farming