



# Organic Farming for Sustainable Agriculture

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Organic farming meets not only the food requirement in an environment friendly way but also maintains our environment. Modern agriculture involving use of pesticides and fertilizers have caused negative impact on environment by affecting soil fertility, water hardness, resistance development in insects, genetic variation in plants, increased toxic residue in food chain and animal feed, thus, increasing serious health concerns and degradation of soil health and quality. Organic farming is a method of agriculture that relies on use of natural resources and processes to produce crops and livestock. It avoids the use

### Principles of Organic Farming

**Organic farming is based on the following principles:**

of synthetic pesticides and fertilizers, genetically modified organisms (GMOs), irradiation, and sewage sludge for cultivation of crops. Instead, organic farming focuses on building soil fertility through crop rotation, composting, green manure, natural fertilizers and manure. It provides macro and micronutrients to the plants and also improves soil physical, chemical and biological properties of soil. Organic farming aims to promote ecological balance and conserve biodiversity while producing healthy and high quality food.

**Health:** Organic farming aims to produce food that is healthy and nutritious for consumers as well as for soil, plants, animals, and ecosystem.

**Ecology:** Organic farming aims to promote ecological balance and conserve biodiversity by minimizing the impact of farming on environment.

**Fairness:** Organic farming aims to provide fair and equitable treatment to all stakeholders including farmers, workers and consumers.

### Practices of Organic Farming

Organic farming involves various practices that focus on building soil fertility, controlling pests and diseases, and promoting biodiversity. Some of the key practices include:

**Crop rotation:** It involves planting of different crops in a particular sequence to ensure that soil is not depleted of essential nutrients. Organic farmers use crop rotation to maintain soil fertility and reduce soil erosion.

**Composting:** It involves mixing of organic matter such as crop residues, animal manure or food scraps and allowing them to decompose over time. Farmers use composting to create a natural fertilizer that is rich in nutrients and beneficial microorganisms.

**Crop residue:** Crop residues have several potential uses such as food, shelter, feed, fuel and soil amendment. Crop residue can be as major source of nutrients for the subsequent crop, enhances soil and water conservation, improve the soil fertility and amplify the soil productivity.

### Benefits of Organic Farming

Organic farming offers a range of benefits for farmers, consumers, and the environment such as:

- Improve soil health and fertility, reduce erosion, and promote soil biodiversity
- Improve water holding capacity
- Improve availability of essential macro and micro- nutrients
- Maintain environmental sustainability by promoting ecological balance and biodiversity and conserve natural resources
- Reduced environmental pollution including greenhouse gas emissions, water pollution, and soil erosion

**Care:** Organic farming aims to promote the welfare and well-being of all living beings involved in the farming process, including plants, animals and people.

**Green manuring:** Green manuring is practice of ploughing and adding un-decomposed green plant tissues into the soil for improving physical properties through organic matter and soil fertility by supplying additional nitrogen. Commonly used green manure crops are sun hemp, dhaincha, cowpea, cluster bean, senji, berseem etc.

**Natural fertilizers:** Natural fertilizers such as animal manure, bone meal, and blood meal to improve soil fertility and plant growth for organic farming practices.

**Integrated Pest Management (IPM):** Organic farming uses natural methods such as crop rotation, planting pest-resistant varieties, introducing beneficial insects and other biological methods to control pests and diseases.

**Conservation tillage:** Organic farming uses conservation tillage that involves leaving the soil undisturbed as much as possible and minimizing tillage with the aim to reduce soil erosion and maintain soil structure.

- Healthier food having higher levels of nutrients and free of synthetic agrochemicals
- Promotes animal welfare by providing natural habitats and feed, and avoiding the use of growth hormones and antibiotics
- Provide economic opportunities for small farmers and promote rural development
- Better economic viability by producing high-quality products that command premium prices in market.

### Challenges of Organic Farming

Organic farming also faces a range of challenges that can make it difficult for farmers to adopt and maintain organic practices. Some of the key challenges include:

**Higher labor costs:** Organic farming requires more labour-intensive practices, such as crop rotation, composting, and IPM, which can increase labor costs.

**Lower yields:** Initially, organic farming result in lower yields than conventional farming and make it less profitable for farmers.

**Certification costs:** Organic farmers have to pay for certification that can be a significant expense for small-scale farmers.

**Limited availability:** Organic products may not be available in all areas, and can be more expensive than conventional products.

### Conclusion

Conventional farming helped to increase the food production, but over the period come with a host of problems including human health, pollution, degradation of soil and water, and impact on eco- system. Organic agriculture is potentially capable to serve the twin role of countries' food security and the environment

protection. Even though the organic agricultural area in the country is increasing, there is still need for further improvement, especially in the areas of research, extension and awareness among personnel directly or indirectly involved in the organic farming.