

IMPACT OF ORGANIC FARMING ON SUSTAINABLE AGRICULTURE-A REVIEW**Dr.R.GOPALAKRISHNAN**

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Abstract

Organic farming combines all agricultural systems that maintain ecologically, socially and economically wise agricultural production. Therefore, high-yielding varieties are used with infusions of irrigation water, fertilizers, or pesticides. This combination of high-yielding production technologies helped the country develop food surpluses and contributed to concerns about soil health, pollution, pesticide toxicity and sustainability of agricultural production. Certified organic products and their value-added products, including all types of foods including Basmati rice, legumes, honey, tea, spices, coffee, oil seeds, fruits, grains and herbal medicine, are manufactured in India. Non-edible organic products include cotton, clothing, cosmetics, functional foods, personal care products, and similar products. The production of these organic plants and products is being reviewed for sustainable agriculture in North India. Organic farming provides plants with major and micronutrients and also improves the physical, chemical and biological properties of soil.

Keywords: Organic Farming, Sustainable Agriculture, Modern Agriculture**Introduction**

Organic farming is developing rapidly, with at least 170 countries producing organic foods commercially today. India has 43.1 million hectares of organic farmland, including conversion areas, and 2 million producers. The world's organic producers are in Asia (36%), followed by Africa (29%) and Europe (17%). The Indian organic movement has its roots in Howard's work. Who formulated and devised most of the views later accepted by those who became active in the movement? Organic farming is a production system that avoids or largely eliminates the use of synthetic fertilizers, pesticides, growth regulators and feed additives. The goals of ecological, social and economic sustainability are the foundation of organic farming. Its main functions include protection of long-term soil fertility by maintaining organic matter levels,

promotion of soil biological activity, careful mechanical intervention, use of legumes and nitrogen self-sufficiency through biological nitrogen fixation. It includes effective recycling of organic matter, including self-sufficiency, crop residues and animal waste, and control of weeds and diseases and pests that depend primarily on crop rotation, natural enemies, cultivars, organic fertilizers and resistant cultivation. Great emphasis is placed on maintaining soil fertility by recycling all waste, primarily through compost, to minimize the gap between NPK addition and removal from the soil. I'm here. Today, increasing population pressure is forcing many countries to use chemical fertilizers and chemical fertilizers to increase agricultural productivity and meet ever-increasing food demands. However, the long-term excessive use of chemicals has led to health hazards for humans and soil, as well as environmental pollution. Farmers in developed countries are therefore encouraged to convert existing farms to organic farms. The main factors influencing consumer demand for organic food are health consciousness and public appetite for higher priced products.

Concept of Organic Farming

Organic farming is a safe and sustainable agricultural system that produces healthy crops without harming the environment. Avoid the use of artificial fertilizers and pesticides on the land and instead rely on developing healthy and fertile soils and growing a mixture of crops. This keeps the farm biologically balanced, allowing various beneficial insects and other wildlife to act as natural enemies of crop pests, and the soil to become flooded with microorganisms and earthworms to maintain its vitality. Avoiding artificial chemicals means that organic farmers minimize health and environmental problems. Of the many goals of organic farming, two are widely recognized: (i) obtaining toxin-free agricultural products for the safety of long-term human health and (ii) balancing negative soil nutrients. Achieving a closed nutrient cycle for recovery. Because organic foods are toxin-free, organic foods are enjoying ever-increasing demand in both developed and developing countries, with a compound annual growth rate of 20% to 25%. Organic farming relies on "organic fuel nutrients" and contributes to the closed nutrient cycle, an important element of sustainable agriculture.

Need of Organic Farming

The commercialization of agriculture has had a very negative impact on the environment. The use of pesticides has resulted in a huge accumulation of chemicals in our environment. Soil, water, air, animals, and even our own bodies. Residues of pesticides and other chemicals in our foods, as well as poor overall quality of foods, are expanding the market for a variety of illnesses, primarily a variety of cancers and weakened body immunity.

Organic farming plays an active role here. Organic farming can address each of these issues. Besides, the obvious immediate and positive effects organic farming has on the environment and quality of food, it also greatly helped a farmer to become self-sufficient in his requirements for agro inputs and reduce his costs.

Methods of Organic Farming

Soil management

Soil is the foundation of life on earth. Certain soil management practices are required to protect and protect soil resources. Natural microorganisms, such as mycorrhiza, coexist with plant roots and absorb nutrients from soils that are inaccessible to plant roots. The act of growing different types of crops in a particular area each season is called crop rotation. When the same crop is cultivated in a particular area each season, certain nutrients are extracted from the soil. However, growing different crops from season to season can help maintain a nutrient balance in the soil. Therefore, crop rotation contributes to the maintenance of soil quality. Legumes are also used to increase soil fertility because they fix nitrogen in the atmosphere with the help of rhizobia. Adding fertilizer also improves the quality of the soil because it contains nutrients such as nitrogen.

Weed management:

Weeds are unwanted plants that compete with crops. Organic farming promotes weed control in a variety of ways. Weed growth is blocked by a plastic sheet, the process of which is called mulching. Mowing and pruning removes the growth of the top weeds. Grazing is another way to help control weed growth. Organic crop rotation also promotes weed control.

New Revolution in Agriculture

Crop diversity:

In ancient times, it was customary to grow only one type of crop. However, today's trend is multicultural, the practice of growing multiple plants in the same place. Improves soil quality by supporting beneficial soil microbes.

Concept of Sustainable Agriculture

The concept of sustainable agriculture is described in the Bruntland Report (1987), which discusses sustainable development as "development that meets the needs of the present generation without

compromising the ability of future generations to meet their needs." It became more attractive after it was published.

Sustainable agriculture is agriculture that produces abundant food without depleting the earth's resources or polluting the environment. Sustainable agriculture can be defined as crop and animal production control practices that ensure long-term ecological productivity without degrading its natural resource base or compromising human health. Sustainable agricultural management practices include soil organic matter conservation, namely conservation tillage and residue management, and selection of crops that are ecologically compatible with the local climate regime. Agricultural Biodiversity Improvement Prevents soil erosion, enhances biogeochemical cycle and protects environmental health through organic farming, integrated pest management, and minimization of the use of synthetic fertilizers and pesticides

Gupta et al. (2021) Recognized a total of 30 Sustainable Agriculture Approaches (SAP) in India. Organic farming is one such important SAP for tackling India's current agricultural problems. Organic farming uses organic fertilizers and pest control, compost, and environmentally friendly approaches such as intercropping, mulching, and crop rotation. This system limits the use of fertilizers, growth regulators, pesticides, herbicides, and other chemical additives. It also discourages and limits the use of ionizing radiation, sewage sludge, genetically modified organisms, and antibiotics. The main goal of organic farming is to increase nutrient levels and soil productivity and protect the environment. All of these factors will ultimately positively regulate our socio-economic situation. The main principles of organic farming defined by the International Federation of Organic Farming Movements (IFOAM) are the principles of health, care, ecology and fairness.

Organic Farming and Sustainable Agriculture

Since the advent of organic farming in recent years, there have been concerns about the production potential of the system. However, the results of long-term experiments published around the world over the last decade have alleviated all fears. Under irrigated conditions, organic farming yields 5-12% less than traditional farming, while under rainwater irrigation and water stress conditions, organic system yields are 7-15% higher. A six-year experiment (Rupela, 2006) comparing two models of chemical input alone and organic management using chemicals + organic matter among four ICRISAT crop management systems found that the organic systems were integrated. It was found to be equivalent and higher than chemical fertilizers. Second year. A study of 154 growing season data (Halwell, 2006) for various crops grown in rainwater irrigation and irrigated areas in the United States shows that organic corn yields are 94% of

traditional yields, compared to organic corn yields. Turned out to be 97. The yield of organic soybeans was 94%. There was no difference in yield of organic tomatoes. More importantly, in the poorer countries of the world, where most of the world's hungry people live, the revenue gap is completely closed. Research results published by UAS, Dharwad, and Karnataka within the Organic Farming Network Project (ICAR) reported that organic farming under rainfed farming achieved much higher productivity than traditional ones (UAS). Dharwad, 2011).

Impacts of Organic Farming on Sustainable Agriculture

This is the impact of organic farming on the food supply, reducing production by at least a third despite using about \$38 billion worth of pesticides. Over the past 50 years, pesticide use has increased tenfold, but crop losses from pest damage have doubled. The negative effects of indiscriminate use of pesticides to control pests are clearly visible in plant ecosystems. Efforts by scientists for organic production have increased as a result of growing concerns over health and environmental issues related to pesticides.

The focus of crop production is now gradually shifting to food quality and environmental safety. Organic production uses organic plant extracts, microorganisms or minerals, and cultural pest control techniques such as crop rotation, intercropping, soil, fallow and other plants to control pests and diseases, thereby improving biodiversity and Approved organic pesticides can be used as needed that can promote organic matter, but also soil and surrounding matter to provide shelter and food for natural predators of crop pests and diseases. Content.

1.Capacity building

Trainings and demonstrations should be organized for knowledge and skill up gradation. Trainings should be imparted to farmers on organic farming with various topics like soil fertility management, principles and practices of organic farming, organic input production technologies, use of natural resources and ITK, documentation in organic farming and certification, post harvest techniques.

2. Supply of inputs in time and quantity

The availability of organic fertilizers and pesticides is also a problem for farmers. Providing this information first will encourage farmers to start organic farming. Inputs: organic fertilizers (Azora, azospirillum, phosphobacteria), biopesticide (Pseudomonas and Trichoderma), green manure (Sanhemp, Daincha, Carotropolis) can be made available to farmers.

3. Spread of Awareness:

Exhibitions, mass media programs and fact-finding visits were organized to raise awareness on a larger scale. Through these exhibitions, you can raise awareness of organic products and market channels and increase interest in organic farming. Similarly, mass media such as television, radio, and newspapers can be used to extend your reach. Publications in the form of folders, brochures and handbooks are available for purchase on ecological production practices and information tailored to farmers' needs.

4. Increasing self-reliance

Most organic inputs are produced locally, reducing reliance on external inputs. Training on the most commonly used inputs, such as farm fertilizers, vermicompost, panchagavya, and neem-based insect repellents, can reduce cultivation costs. This can attract small, limited farmers to organic farming. This practice not only reduces input costs, but also achieves higher prices for organically grown produce.

5. Linking producers and consumers

To raise consumer awareness, farmers can hold exhibitions in direct contact with consumers. This makes it easier for farmers to know their needs and connect directly with them. Farmers and forest dwellers are the primary users and managers of the Earth's natural resources. Land management, including domesticated wild biodiversity, relies on agricultural activities to build self-renewing food systems. Sustainable farm management and corresponding agricultural and environmental policies have great responsibilities in relation to agriculture and nature maintenance.

- Meeting food needs while preserving natural heritage is a common challenge for all countries on the planet. Organic farming can tackle this challenge head-on in the following ways:
- Promote market-based incentives to reward farmers for responsible efforts and maintain economic viability.

- Replace environmentally harmful agricultural practices with approaches that can reverse the dramatic trend of biodiversity loss.
- Encourage community involvement in land conservation.

Organic farming demonstrates the ability to "create" biodiversity and produce raw materials at all levels. However, it is logical to think of wild organic farming as a natural habitat disruption solely due to human intervention. In any case, it is an important step in solving many of the threats that traditional agriculture poses to biodiversity. Organic farming, if any, should simply be seen as the most appropriate starting point for building additional conservation needs. Large-scale expansion will be a cost-effective policy option for biodiversity.

Conclusion

Organic farming is an economic system that promotes environmentally, socially and economically sound food and textile products. As awareness of the negative effects of chemicals on health, soil and the environment grows, inorganic farming is shifting to organic farming. India, which has different agricultural climatic conditions, has great potential for organic farming, and many products are organically produced in India. High organic product prices and lack of proper marketing capabilities in the domestic market are major obstacles to organic farming in India.

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