

ORGANIC FARMING - REQUIREMENTS AND CHALLENGES

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Introduction

Organic farming is a method of crop and livestock production that involves much more than choosing not to use pesticides, fertilizers, genetically modified organisms, antibiotics and growth hormones. Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop enterprises that are sustainable and harmonious with the environment. The general principles of organic production, from the Canadian Organic Standards (2006), include the following: protect the environment, minimize soil degradation and erosion, decrease pollution, optimize biological productivity and promote a sound state of health maintain long-term soil fertility by optimizing conditions for biological activity within the soil maintain biological diversity within the system recycle materials and resources to the greatest extent possible within the enterprise provide attentive care that promotes the health and meets the needs of livestock prepare organic products, emphasizing careful processing, and handling methods in order to maintain the organic integrity and vital qualities of the products at all stages of production rely on renewable resources in locally organized agricultural systems

Organic farming promotes the use of crop rotations and cover crops, and encourages balanced host/predator relationships. Organic residues and nutrients produced on the farm are recycled back to the soil. Cover crops and composted manure are used to maintain soil organic matter and fertility. Preventative insect and disease control methods are practiced, including crop rotation, improved genetics and resistant varieties. Integrated pest and weed management, and soil conservation systems are valuable tools on an organic farm.

Organically approved pesticides include "natural" or other pest management products included in the Permitted Substances List (PSL) of the organic standards.

Organic farming - Requirements

The requirements are studied under following heads:-

1. Protecting soil quality using organic material and encouraging biological activity -

the soil has its own inherent qualities which is received from the parent material of the particular soil eg, rocks and minerals which needs to be protected for the sustainable agriculture by the use of various organic materials. use of organic materials in soil helps the soil in many ways.

- Improves soil structure
- Improve water holding capacity
- Hold nutrients for more time and reduces leaching loss
- Reduces soil acidity
- Enhances soil organic matter

2. Indirect supply of crop nutrients using soil microorganisms - providing crop nutrients indirectly using relatively insoluble nutrient sources which are made available to the plants by the action of soil microbes. This promotes the natural biological cycles within the soil which helps in plant growth.

3. Nitrogen fixation in soil using legumes- Nitrogen self sufficiency through the use of legumes and biological nitrogen fixation as well as effective recycling of organic materials including crop residues and livestock materials.

4. Weed, disease and pest, control using various methods- there are following few ways to control weeds and pest using organic approach.

- Crop rotation - crop rotation refers to the breaking of the existing cropping pattern within an area for a certain time (2-4) years with a new crop which results in weed control and very low infestation of pests.

1. Breaks life cycle of pests by providing unfavorable conditions
 2. Lack of host plant after resting period of diseases
- Existing resistant varieties- the naturally existing resistant varieties of old time to drought and frost which ultimately makes plant strong to fight against diseases
 - Natural predators - some of the natural predators of vegetable cropping systems are spiders, mites, beetals etc. This promotes the natural cycle of various biotic agents on the farm.
- 5. Rearing of livestock** - Livestock rearing is a way to provide an integrated approach in organic farming and ultimately the better management and utilization of wastes in an integrated manner.
- Nitrogen cycling- the cattle feed on grass and green fodder with good nitrogen content and the same amount of nitrogen is present in cow dung which is again used in the field and again the plants are grown and the cycle goes on
 - Source of organic fertilizers for various preparations
 - Extra source of income for farmers
 - Promotes sustainable agriculture
- 6. Care for larger environment and conservation of natural resources, habitats and wildlife**-carefull attention should be there on the impact of farming system on the wider environment and the conservation of natural habitats and wildlife. Keeps a balance in food chain

Organic Farming - Challenges

According to a research paper published in the research journal of agricultural sciences on 31 Jan 2020 a study was conducted in way district of Kerala on the challenges faced by the farmers who are engaged in organic farming. The study found a number of challenges that were common with most of the farmers from seed to market are given below along the few other challenges frequently faced by the farmers in organic farming.

1. **Lack of knowledge** - lack of strong action taken by the government to promote organic agriculture
 - Low access to modern media and technical support.

Solutions - free vocational training to the farmers

- Farmer to farmer interaction
- Connecting more and more farmers with digital media and kisan apps.

2. Marketing problems

- Low access to markets for marginal farmers
- No smooth marketing channels available
- Low shelf life of various fruits and vegetable crops hence farmer has very less time to reach the market.
- Poor infrastructure and cold storage units
- Farmers do not have proper transport trucks
- Marginal farmers has to travell hundreds of kilometers to sell the produce
- Distress sale - it is the situation when when the farmers are offered a less amount by the market dealers according to the quality of product and he has to sell it to the market dealers in a low price to avoid more interest on the loans he has taken before.
- Lack of market knowledge - many farmers do not even know that where they could find a better market for their product.

Solutions

- Developing a bridge between the farmer and market
- Encouraging the young entrepreneurs in marketing of organic products
- Government should induce private investments in organic farming to facilitate the farmers
- Enhancing the number of regulated markets
- Government should encourage the cooperative marketing societies
- Subsidized transport

3. Microbial biomass

- Total population of active microbes in soil at the time of sampling
- Influenced by soil properties
- Measured by amount of c:n ratio

- Responds quickly to soil management

Solutions

- Use of organic waste decomposer
- Jeevamrut to enhance microbial population within soil.

4. Lack of suitable seeds and varieties

- Organic farming needs the seed from an organic farm
- It is difficult for farmer to get the seed from an organic source due to less number of farmers engaged in organic farming in villages

5. High labour requirement

- Due to various manual operations like weeding, mulching and other intercultural operations more labour is required.
- Weed management requires a lot of man power
- Labour is also required for the various on farm preparations of organic materials eg- jeevamrut, panchgavya, ghanjivamrit etc

6. Expensive organic produce discourages consumer 's interest and affects sale

- According to a study of ASSOCHAM that in india there will be an increase in expenditure of rs 1200-1500 per month if a person switches to organic food consumption
- Farmers says that the reason for high cost of organic product is high labour requirement and comparatively low yield

7. Lack of extension service on organic farming

- Lack of available data and less success stories on organic farming due to less work done in this field
- But the situation is improving in many states like uttarakhand and himachal pradesh
- Includes lack of package of practices

8. Yield

- Initial yield is low in some areas depends on how heavily the soil is treated with synthetic chemicals before shifting to organic agriculture
- Transition period is relatively longer in these areas like punjab and haryana
- Yield problems are not so serious in some areas like himachal and uttrakhand where there has been a limited use of chemicals before.

9. Complicated certification

- The certification cost is the big problem for small and marginal farmers
- This can be better understood by a report on PMKVY (pradhan mantri krishi vikas yojna)-2018
- Under this there was an initiative by government of india for free certification
- The report shows that all states except odisha, tripura and karnataka was unable to utilize even 50percent of their funds under scheme
- The states will have to take the responsibility and contribute towards organic india.

Conclusion

As the demand in foreign countries for organic products is increasing with a faster rate, india can become among the top countries exporting the organic goods, but for that the demand needs to be increased in india as well to convince the farmers on an initial level on the other hand both secondary and tertiary sectors has to be developed in organic agriculture to strengthen the value of organic products. The basic structure of the market has to be improved to facilitate the farmers.organic farming has a potential to bring prosperity in indian farming scenario however the above requirements and challenges has to be addressed and the improvement in organic agriculture must go on.