

Potato Production under Organic Farming and IFS

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SUMMARY

During the last two decades, 'Organic Agriculture' has emerged as a dynamic 'Alternate Farming System'. This has been necessitated as a consequence of resource degradation in our efforts to achieve high yields in various crops to meet the increasing demand of food by the burgeoning population. Simultaneously, there is also a growing global awareness on food health and environment. Like other food stuffs, the consumers are also concerned about the potato, they eat. Both the international and domestic communities are becoming more and more conscious on issues like residues of poisonous agrochemicals in potatoes and their associated health and environmental hazards. In view of such growing awareness, there has been a paradigm shift and interest to adopt organic potato production systems, which are ecologically and economically viable and socially just. India with its varied climate and variety of soils has an enormous potential for organic production of potato. The wide product base, high volume of production round the year, strategic geographic location, high international demand, abundant sunlight and availability of labour at comparatively low cost make India an apt location for organic potato production. The primarily goal of organic potato production is to optimize the health and productivity of interdependent communities of soil, plants, animals and people. This article for organic production of potatoes provides an outline of management practices that have an impact on improving plant health.

INTRODUCTION

Potato is one of the important crop that is consumed all over the world both as a food as well as vegetable that's why it is called the king of vegetables and poor men's food. The post green revolution leads to tremendous increase in the production of the food crops while on the other hand it destroyed soil health and results to the environmental pollution. In India the nutrient requirement of the potato crop is mainly fulfilled by the chemical fertilizers but the dependence on these chemical fertilizers leads to many problems such as depletion of soil organic matter, soil erosion, contamination of food and water, nutritional imbalance, adverse effects on bio-diversity and on the health of humans and animals. As the universe is going on the way of sustainable agriculture and minimizing the adverse impact of chemicals on the environment.

Keeping in view the above effects of chemical fertilizers on soil and environment we should find out the alternative that not only improves the productivity and quality of the potato but should also be ecofriendly to the environment. Thus, the best alternative is the organic farming. Nowadays the trend of organic farming is increasing because people became more health conscious and they want to consume vegetables which are free from chemical residues. The organic manures not only supply the nutrient but also improve the physical environment for the better growth of the plant and tubers. Organic farming also improves the soil fertility, productivity, micro-organism population, soil physio-chemical environment etc. But production of potato by organic farming is not up to satisfactory level. The organic sources alone are poor sources of nutrients; they contain the nutrient in very low amount so they are required in high quantity to fulfill the need of crop.

So, we need for other technology which can maintain soil fertility and crop production. Therefore, it is the need of the hour to follow integrated nutrient management. By this way we can reduce our dependence on the chemical fertilizers and also obtain the healthy food with the use of organic manures and in the meantime it will also improve the fertility status of the soil. Application of the plant essential nutrients through organic and chemical fertilizers will enhance the agro-ecosystem health including bio-diversity, biological cycles and soil biological activities as well as maintain the nutrient status in the soil solution. FYM (Farm Yard Manure), bio fertilizers (Azotobacter and Phosphobacteria) are recognized as the cheapest source of plant nutrients that can be used as a supplement to chemical fertilizers for the better production of Potato in the developing nations like India.

Application of organic manures in combination with the chemical fertilizers will improve the physical, chemical and biological status of the soil. The use of organic manures along with the low amounts of chemical

fertilizers will enhance the soil enzyme activities, microbial population as well as organic carbon in soil. Thus, the integrated use of organic and inorganic source of nutrients will have the positive effects on yield of potato and soil health. It will also help to meet the future demand of the people.

Challenges of organic potato:

- Providing adequate nutrients
- Preventing potato blight
- Weed control

The operative principal objectives of organic potato production:

- Produce potato of high nutritional quality in sufficient quantity.
- Work with natural systems rather than seeking to dominate them.
- Make maximal but sustainable use of local resources.
- Encourage and enhance the biological cycle within farming system involving micro-organism, soil flora and fauna, plants and animals.
- Ensures the basic biological functions of soil-water-nutrients-human continuum.
- Maintain and increase the long term fertility of soils.
- Use as far as possible, renewable resources in locally organized agricultural systems.
- Work, as much as possible, within a closed system with regard to organic matter and nutrient elements.
- Avoid all forms of pollution that may result from agricultural techniques.
- Maintain the genetic diversity of potato and its surroundings.
- To allow potato producers adequate returns and satisfaction from their work, including a safe working environment.
- To consider the wider social and ecological impact of potato cultivation.

CONCLUSION

The organic potato farming uses organic fertilizers, reduces soil erosion, decreases nitrate leaching into groundwater and surface water, and recycles animal wastes back into the farm. Basically the yield of potato may be lower as compare to inorganic farming but the quality will be better. The cost of cultivation in organic farming is low and price of organic product is high. The organic farming is best in both economically and ecologically.

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