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Analysis of the Environmental Benefits of Organic Agriculture

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Abstract – By the end of the 1980s and especially in the 1990s, organic agriculture came to the forefront in response to the growing awareness of environmental conservation issues. Organic agriculture is a traditional, viable, low input use and sustainable method of agriculture to produce healthy food. It helps to reduce environmental and can strengthen the natural resource base. It ensures sustainable farm production. It is one of the fastest growing sectors of Agricultural production and plays an important role as an alternative and safe food production process. This system ensures the production of high quality food while conserving the soil fertility and enhancing its fertility. It includes all Agricultural system which promotes production practices that are environmentally, socially and economically sound. It consider the local soil health as a key to the successful production. It aims to optimize quality in all aspects of agriculture and the environment. Thus, it helps in a attaining an eco- friendly and sustainable production. This paper focuses on the environmental benefits and constraints of organic agriculture.

Key Words – Organic Agriculture, Environmental Conservation, Sustainable and Eco – Friendly.

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INTRODUCTION

Farming is a most basic activity. It is considered as the backbone of Indian economy. Farming not only nourishes the whole population, but also provides a means of livelihood to more than 60% of our population. In Independent India, more food production was needed to meet the growing demands of the population. This surge in production of food grains as a result of adopting HYVs, chemical fertilizers and pesticides. The objective behind Green Revolution was the production of more food per unit of land within a short period of time. Chemicals in the form of fertilizers and pesticides play a major role in Green Revolution. Ecological imbalance and environmental pollution have adversely affected farming in farm products. This demands for collective farming practices that can produce sufficient quantity of food without harming the environment. Then comes a new option of the organic farming which is a traditional and sustainable method of agriculture to produce sufficient and healthy food. Organic farming is such agricultural system that follow the principles and logic of living organism in which all elements like soil, water, air, plants, animals and farmers are closely linked with each other. The concept organic refers to the farm as a living organism in which all the supporting factors such as the soil, microorganism, living creatures, plants, animals and human beings to create a healthy environment for the plants and animals to grow and produce healthy food for everyone. It is more of a process based farming approach where the quality of produce is given importance. Farmers are encouraged to convert their existing farms into organic farms. Organic farming is not mere growing of plants and animals but it needs thorough understanding of various principles and prudent management of on-farm resources and processes.

OBJECTIVES

The objectives of this paper are the following:

- To promote more usage of natural pesticides and to increase genetic diversity.
- To maintain environment health by reducing the level of pollution.
- To keep agricultural production at a sustainable level.
- To improve soil health and to reduce nutrient loss into water bodies and environment.

BENEFITS OF ORGANIC AGRICULTURE:

Organic Farming is not only farming practices without chemicals but is also relevant to the environment, agricultural traditions, animal welfare, farming communities, sensible energy use and soil and water conservation. There are different approaches and advantages of going in for organic

farming. Here are the following benefits of organic agriculture:-

- **Maintaining Sustainability-** The word sustainable is derived from the Latin ,'Sustinere', meaning to keep in existence, implying, performance on long-term support. The context of Agricultural production, Ikerd (1993) defines a sustainable agriculture as " capable of maintaining its productivity and usefulness to society over the long run……it must be environmentally -sound, resource-conserving, economically viable, socially supportive, commercially competitive and environmentally sound".(1) water and soil are two extremely important resources necessary for growing food. Organic farming rebuilt soil health and stops harmful chemicals from getting into our water supplies. It is helpful in maintaining biodiversity and released fewer greenhouse gas emissions. It is considered environmentally friendly due to the less use of external inputs such as fertilizers and pesticides. Organic farming is not only aimed at maintaining the sustainable agricultural production but is expected to drastically change the Economics of growing the crops, how to substantially reduce the pollution as well as encourage the mixed farming in a steep diversion from the present day agriculture. it is aimed at increasing the agricultural production without losing a close coordination existing between crop husbandry with ecosystem animal husbandry, soil health and other aspects of rural life

- **Healthy Soil Formation-** soil quality and fertility are all terms used to describe the status of the soil. soil fertility could perhaps be considered to be a measure of the soils ability to sustain satisfactory crop growth both in the short and longer term. Soil quality is a wider concept than this because it encompasses attributes relating to protecting the soil as a resource. soil fertility is determined by a set of interactions between the physical and chemical environment of the system and by biological activity. Organic matter is linked intrinsically to soil fertility because it is important in maintaining good soil physical conditions which contribute to soil fertility.

There are few studies that have directly compared erosion under organic and conventional farming. The most often cited study is that of Reganold who compared adjacent organic and conventional farms. The organically manage soil has significantly more soil organic matter. Soil organic matter benefits many aspects of soil quality. This has long been recognized by both organic and conventional farmers. Within soil textural constraints, soil organic matter levels will increase with greater organic matter inputs to the soil. There is evidence that soil organic matter contents will increase under organic farming. However many conventional systems also encourage app build up of organic matter through regular manure applications and returns of the large amounts of crop residues etc.

The Biodiversity Benefits- organic farming relies on different farming practices to conventional regimes. since the whole approaches based on using natural processes positively rather than combating negative effects. Mixed farming is the norm on organic farms and this provides a range of of wildlife habitats across the farm area and often even within fields. The majority of organic farms have both crops and livestock. Organic livestock farms often have both sheep and cattle. Horticultural fields often have a large number of different crops on the same fields for example if the farmer produces for vegetables 'box schemes' Mixed farming provides a greater variety of food sources and also food sources at different times of the year as well as a variety of nesting habitats. For example different invertebrates and seeds sources are found on arable and grassland areas. A mixture of cattle and sheep is important for maintaining a variety of grassland vegetation. In conventional farming though mixed farming was once the norm, it has now become standard practice for farms to be specialized in either livestock or crop production and to also be increasingly specialized within that category.

Consumes Less Energy- Organic Farming does not rely on the use of synthetic fertilizers as opposed to conventional techniques that are generous with these external chemicals. Avoiding fertilizers contributes to a greater cause of energy conservation. This is because manufacturing synthetic fertilizers consumes a significant amount of energy. On average, it is safe to say that the energy usage is lower by at least 30 to 35% in the organic farming systems. The British Departments for Environment Food and Rural Affairs in one of their reports suggested that organic crops and organic dairying give 35% and 74% less energy respectively then conventionally grown counterparts.(3)

A Solution to Global Warming:- The chemical fertilizers and herbicides used in agriculture contribute 20% of carbon dioxide emissions. Too much use of synthetic nitrogen overload are waterways. Due to mono cropping in which more synthetic fertilizers is used degrades the soil fertility and animal health. Organically managed soils can convert carbon from greenhouse gas into food producing asset. The type of soil which is rich in carbon conserve water and support healthy or plants. Thus, organic farming also works as a solution to global warming.

Constraints Of Organic Agriculture- The issue of great concern is the sustainability of soil productivity as land begin to be intensively tilled to produce higher yields under multiple and intensive cropping

systems. Such concerns and problems posed by a modern day agriculture gave birth to new concepts in farming such as organic farming. The organic farming movement also presents some constraints and problems in producing food items organically. Here are the following constants:

- The primary concern of all organized communities and civilized society is to meet the food requirements of its people. the cultivated area required to maintain the present level of food grain production in India without using the fertilizers reaches more than the total geographical area of the country.
- organic farming has the twin objective of the system being sustainable and environmentally benign. In order to achieve these two goals, It has developed some rules and standards which must be strictly adhered to.
- The organic farming movement presents a challenge to the scientist who cannot and would not want to abandon a scientific approach. The present lower productivity of the system is a result of constant that its practitioners have put upon themselves.
- organic farming as a concept of philosophy is well tested in Western. But in the Indian context, it needs to be looked into more critically.
- Organic farming is a market demand driven agriculture, aimed to cater to the foreign export and effluent section of the society in the country. However in order to make a dent in the export market, we need to develop high- tech organic Technology with strict quality control, meeting International quality standards prescribed for Organic produce.
- For India with its ever increasing population, the sustainable agriculture has to be based on site specific balanced and adequate fertilization and an integrated plant nutrient supply system involving organics, inorganic and bio fertilizers. Today the country needs the conjunctive use of organic and inorganic sources of plant nutrients for sustainable productivity.

CONCLUSION

Due to the low levels of pesticides and herbicides, organic farming reduces the long-term risk of chemical consumption. In organic farming natural pesticides are used derived from the plants. Organically produced food is beneficial for providing healthy nutrients to soil. This food is more nutritious, increased soil quality, greater attention to food quality and higher nutrition density. large-scale chemical production methods are damaging to the environment then purchasing this type of organic food supports this damage. Therefore, the main objective of organic farming is to protect the environment and to minimize the bad effect on the environment. In Indian context, a holistic approach involving integrated nutrient management, integrated pest management, enhanced input use efficiency and adoption of region specific promising cropping systems would be the best effort for protecting Environment. Besides the identification of regions suitable for the adoption of organic farming, the crops and their products should also be identified which are amenable for production through organic ways and have the potential to fetch a premium price in the international organic market. A strong research backup has to be put in place to develop and improve national standards for organic Farming. There is a need to organize producers cooperative marketing societies and establish credible marketing channels for study flow of organic foods and materials in accordance with the demand as also to safeguard the interest of small farmers opting for organic agriculture.

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