



REVIEW ON ORGANIC AND CHEMICAL FARMING AND USES OF SMART AGRICULTURE

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Abstract

Present days healthy food is very important but farmers and market people are using more chemicals so that total recourses are polluted. Mainly farmers using more chemical fertilizers so that it is affected by soil, resource, human health, animals, and plants. These all are polluted due to inorganic farming. So, the main aim is to reduce chemical fertilizers for growing yields and also not use chemicals in marketing. So, that reduces diseases like Cancer, Heart attack, strokes and many other types of diseases. Improvement of organic yields is very important in that way to involve government and take initiative towards motivate the farmers to use organic fertilizers and also provide separate marketing for organic products and also encourage for government side to give more subsidies to organic farmers and also provide free certifications. This paper explained what is the difference between organic and chemical farming, the main advantages of using organic farming and how organic farming save the environment or climate. Also, discuss the Internet of things on how to use this organic form.

Key terms: Organic ,Chemical farming, Internet of things.

1. Introduction

The comparisons between organic farming, natural farming and chemical farming are Chemical forming means using chemical fertilizers for growing yields, control pests with synthetic pesticides and control weeds are with chemical herbicides. So soil weather, natures etc., all are polluted due to chemicals and also cost is very expensive. More efforts and environment impact more so converted to organic farming. Organic farming means using organic fertilizers like compost, vermin compost, and animal manure mainly cow manure and some powders mixed with neem leaves. So it is a system which is dependent entirely on organic sources for crop nutrition and crop husbandry using organic fertile. This is low cost less effort less environment efforts compare chemical fertilizers. And another farming is natural farming means is is followed nature human not given to any inputs so zero budget it is also called zero budget natural farming. It is no cost, no efforts because nature will give. No environmental import effects so natural farming refers to framing with nature and without chemicals. To combine the organic farming and natural farming will be good, my opinion is involved more natural farming and some organic farming avoid chemical fertilizer is better.

According to the world of organic agriculture report is "In India only 30% of the total organic producer's Organic farmers in the world, but accounts for just 2.59 percent i.e. 1.5 million hectares of the total organic cultivation area of 57.8 million hectors". Indian (Vedic or Vedas) culture was depending on agriculture. It is the backbone of the India economy because this land had topsoil for at least 50 centuries and this was all due to "Vedic cows". "The roots of Indian culture were always its divine humped cows-Gomata Nandi which made the most fertile soil through its Gomay(Vedic cow dung) and Gomutra(Vedic cow urine). Sustainable agriculture should be the future of India agriculture which makes more fertile soil organically and produces huge quantity with quality, in harmony with nature, mother earth which can be done only by divine humped cows". How organic farming benefits the environment. More Benefits are there compare organic farming and chemical farming.

2. Uses of organic farming for the environment or climate:

1) Diminished liability to pesticide and chemicals:

“The organic trade association” notes that if “every farmer in the U.S changed to organic farmer or production so they could eliminate 500 million pounds of persistent and harmful pesticides from entering the environment annually”. Farmers use pesticides and chemicals it is effected by many environmental issues mainly pesticides increase resistance power in weeds, some plant-eating insects like lice, fly, etc., increase fungus and bacteria.

The soil, air, and water is polluted due to spray the pesticides and chemical on plants. Come times these harmful pesticides stick around for decades.

2) Organic for forming builds healthy soil:

People want to grow healthy food, so start with healthy soil. Natural cultivation processes are far better than chemical soil management. USDA agricultural research service (ARS), studied by 9 years they show “that organic farming builds up organic soil matter better than conventional no-till farming. According to Dr. Elaine Lngham”, just one teaspoon of compost-rich organic soil may host as many as 600 million to 1 billion helpful bacteria from 15,000 species”, Lngham notes that on the flip side, one teaspoon of soil treated with the chemical may carry as few as 100 helpful bacteria”.

3. Combatting erosion:

Build healthy soil using organic farming not only healthy soil it avoids combat serious and land issues such as erosion. A major study on organic and chemically farming on wheat fields they found compare chemical using field and organic using fields topsoil is eight inches more and another thing chemically used fields are also had only one third the erosion or cutting loss. Erosion is a very important issue it is mainly affection the land, humans, and food.

4) Fighting the effects of global warming:

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5) Organic farming supports water conservation and water health:

Water is a very important resource whenever water supply is at risk, people and plants are more sufferings. Using harmful pesticides water is polluted according to “American Rivers” studies that pollution threat to rivers one using nonorganic farms like pesticides, fertilizers, etc., so using organic farming, not polluted water.

6) Organic farming encourages Biodiversity:

Organic encourages more biodiversity using biodiversity farm is more stable if reduce biodiversity it is not good for people or land because it is the main role plays directly for the weather, diseases, and rise reflections so encourage healthy biodiversity on an organic farm.

Advantages of organic farming:

Several benefits are there for organic farming. Here I consider 8 benefits.

1) Career security:

According to “the US Bureau of labor statistics (BLS)” conventional farming is on the atrophy.

The “U.S department of agriculture (USDA) economic research service” reports that “organic farming is one of the fastest-growing segments in U.S agriculture”. Because many users or customers are supported by organic products because they think about a healthier lifestyle so produce more income. Additional offers are also there in organic agriculture carrier opportunities like teaching, training, farm management, certifying agent, and more.

2) Lower Initial Investment:

Initial investment is very less compared to chemical farming only cow dung and urine is used and mixed with neem leaves avoid chemical feticides, fertilizers etc., so many farmers are borrow money from others so avoid that.

3) High Demand and Willingness to Pay for Organic Products:

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4) Ecological Benefits :

Organic and Eco are different both are not the same. Using organic farming that is ecological benefits such as conservation of water, biodiversity is improved, decrease global warming risks, etc.

5) Drought-Resistant Crops:

Due to Drought, the farmers are facing many problems that are low income or no income. The use of organic farming is drought resistant because in convention chemical fertilizer use in the land that is not easily soluble so required more water.

6) Healthier Soil:

Healthy soil is the most important thing in agriculture so using Vedic cow dung and Gomutra(Vedic cow urine) for yields the land is not damaged atomically the soil is healthy so increase the yield for farmers and produce food is healthy.

7) Growing Marketing Opportunities :

The people are worried about health and environment so many people are switched to organic products so the market is improved.

8) Additional Perks:

The USDA gives more offers for organic farmers like certification reimbursement and provide financial support for crops due to natural disaster and give some loans or subsidies for crops and providing marketing etc.,

3. Smart agriculture uses

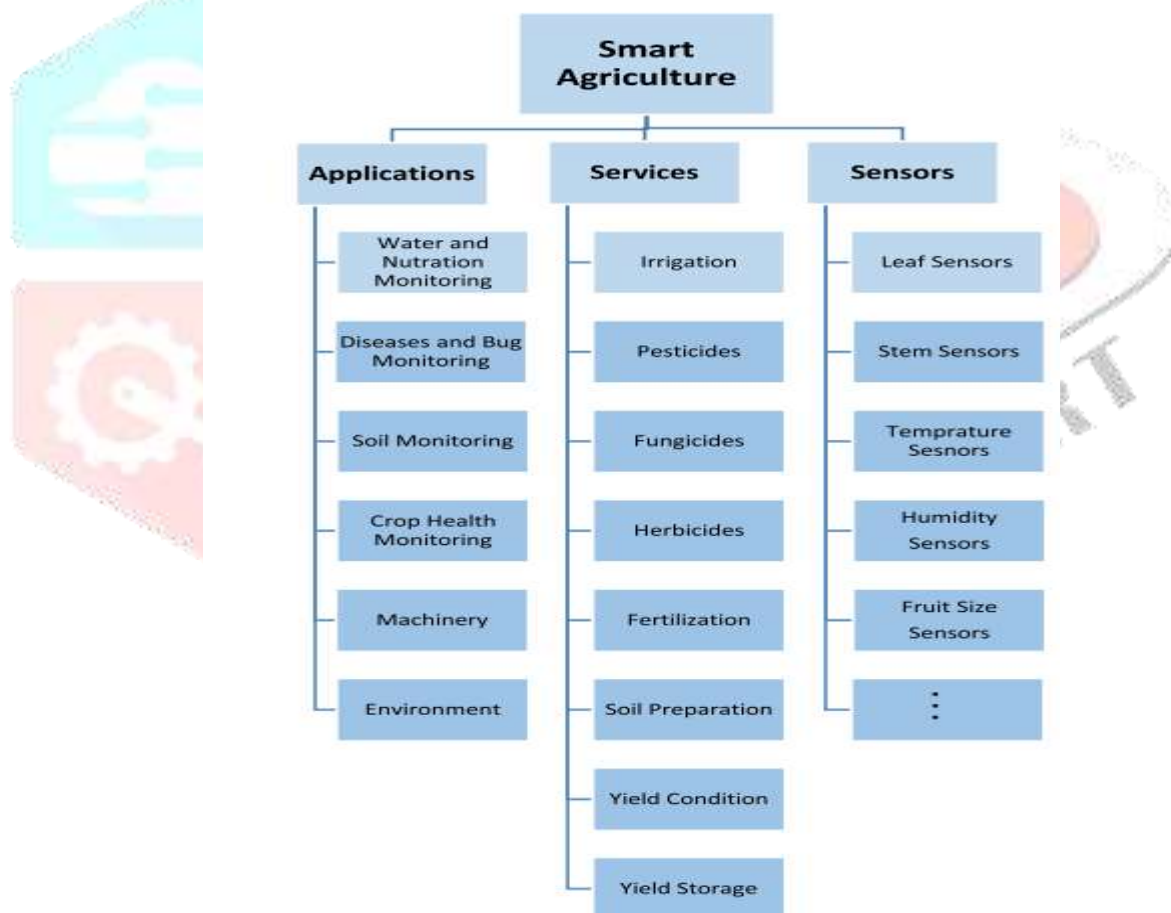


Figure 1: General hierarchy of possible applications, services and sensors for smart agriculture.

Source: <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8784034>

Major applications are using the newest sensing and IoT technologies in agriculture practices. Present many farmers are using traditional methods but want to improve yields must merge traditional methods and smart IoT technologies. By following the practices of smart agriculture, IoT can help to improve the solutions of many traditional farming issues, like yield improving, drought response, land suitability, irrigation, and pest control. Figure 1 lists a hierarchy of major applications, services, and wireless sensors being used for smart agriculture

applications. While major instances in which the advanced technologies are helping at various stages to enhance overall efficiency are discussed below

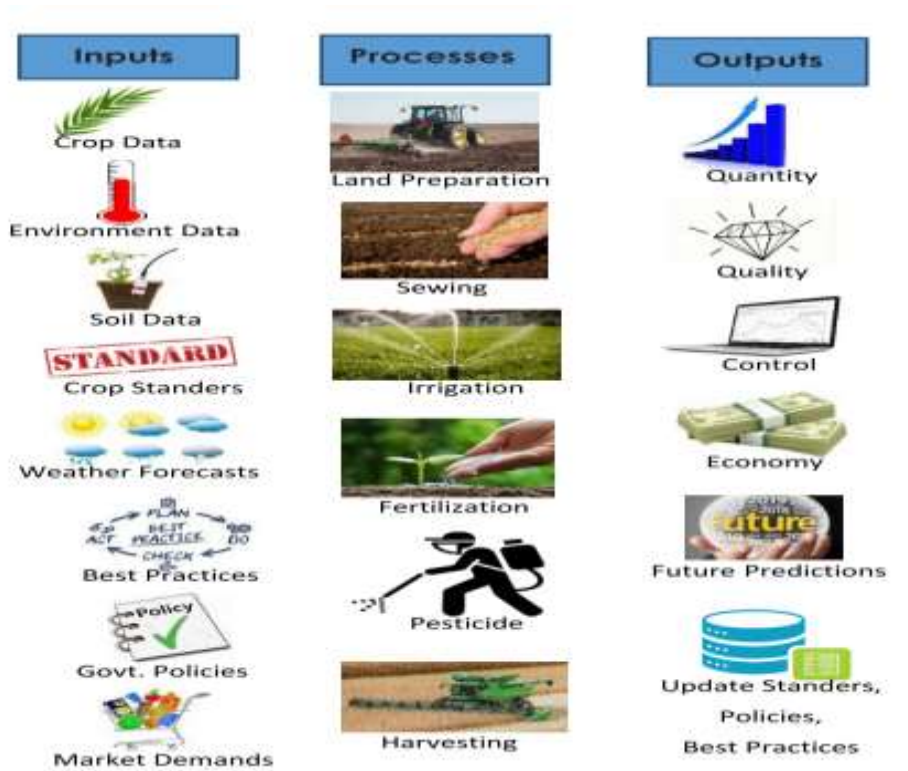


Figure 2: Some key inputs, processes involved and possible outputs of smart farming.

Source: <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8784034>

Figure 2 gives the smart agriculture inputs, processing and outputs.

Conclusion

In this paper discussed what is the difference between organic and chemical farming, what are the benefits of organic farming, how IoT help in agriculture. In the future use, many sensors and IoT technologies implement good agriculture product.

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