

# ORGANIC AGRICULTURE

2<sup>nd</sup>. lect. Theory – Horticulture Dept. D. Jehad Sh. Kader

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## Organic Farming is not a high widespread for some reasons, such as?

1. Chemical are easy to use and less costly.
2. The benefit of organic practices is not seen immediately.
3. Large of organic inputs are required.
4. Difficult to get organic fertilizer.
5. Unorganized market for organically grown produce.
6. Preference to consume organic food is yet not established.
7. Economic loss to transition (from traditional agriculture to organic agriculture).
8. Need experimental evidence on the cost benefit ratio of organic farming.
9. Government effort to propagate.
10. Scientific research is also scaring (fear).

## Why is organic food more expensive than conventional food?

The biggest criticism (commentary) of organic food is its cost. There are several reasons it's more expensive.

- 1- Organic farmers pay more for organic animal feed. And the farming is more labor intensive, since farmers avoid chemical fertilizers and pesticides. Because farmers don't use herbicides, they rely more on hand weeding.
- 2- Since they avoid chemical fertilizers, they use compost and animal manure, which is larger and more expensive to transport. This also means their crop yield is usually lower.
- 3- Conventional farming also uses every acre of farmland to grow crops, while organic farmers rotate their crops to keep soil healthy.

All of these production costs mean organic farming tends to be more expensive than conventional farming, and this is reflected in how much you pay at the grocery store. **However**, when you take into account the true "cost" of food production from conventional farming, including replacement (alternative) of eroded (erosion) soils, cleaning up polluted water, health care for farmers who get sick and environmental costs of pesticide production and removal, organic farming might actually be cheaper in the end.

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## **Production of plants and plant products, Include:**

- Conversion period.
- Partial conversion and parallel production.
- General crop management, including choice and diversity of production.
- Cropping including use of planting material and seeds.
- Fertility management including use of inputs.

## **Production of animals and animal products, include:**

- Farm sourcing of conversion and brought in animals.
- Breed and geographical origin of animals.
- Partial conversion and parallel production.
- General animal husbandry, including housing and movement.
- Mutilation.
- Nutrition.
- Health care and veterinary medicine.
- Transport and slaughter.

## **The important and chief elements that which depend on it organic farming:**

Observed in organic farming methods rely on the following ways:

- 1 - Tillage shallow soil or plowing light minimum tillage or no-tillage (Zero tillage), deep tillage reduce the activity of microorganisms in the surface layer of the soil and working on the transfer of organic matter from the surface to the subsurface soil, which are conditions were less suitable for analyzes and the launching of the nutrients from them.
- 2 - Take advantage of the remnants of crops and animals in the production of what is known compost it is the main source of nutrients in organic farming, any sense of the use of organic materials and natural in this type of agriculture.
- 3 - The use of green fertilizers and compost farm.
- 4 - Take advantage of the natural powders of metals in the provision of various plants needs of some essential nutrients, such as the use of phosphate rocks as a source of phosphorus and cloconite as a source of potassium, which decompose slowly in soil, and to increase the efficiency of the use of these materials can be

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inoculated soil with some micro-organisms such as vaccines solvents phosphorus and other elements.

- 5 - Can take advantage of calcium material and agricultural sulfur to improve the properties of the physical and chemical soil and as a source of sulfur element as food is an essential element of the plant.
- 6 - Follow the appropriate crop rotations per organic farm so that it is procession the cultivation of surface-rooted crops with depth-rooted crops on the same piece of land, and the stressful crop of soil and between crops is un stressful and leguminous crops installed air nitrogen with consuming nitrogen crops.
- 7 - Follow the normal means, mechanical, agricultural, and vital to resistant against diseases, insects and weeds.
- 8 - Interest in cultivating and improving and the election of plant varieties, which are characterized by the natural resistance.
- 9 - The cultivation of different plant species in soils and favorable environment has to get better growth and production.
- 10 - Rely on the natural resources of the farm, and using the least possible resources from outside the farm.
- 11 - The use of plant extracts in place of the use of synthetic growth regulators.

### Organic farming requirements:

Because the consumer is the primary beneficiary of organic farming products so developed or applying laws for organic agriculture to build bridges of trust between the consumer and organic farming, and so the consumer feels that this product has been produced in a special way to protect them from diseases and to reduce environmental pollution, and even guarantee to consumers that the quality of product, has been the standards and regulations to ensure the application and production of organic farms in properly placed.

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## The conditions that must be available at the farm organic elements:

### 1 -Organic farm site -:

- A - The farm must not be under the influence of a factory or factories that go off fumes or toxic gases or ash.
- B - The farm must not be near one of the main roads, which are frequently the traffic movement and the resulting that release from toxic gases and the harmful effects.
- C - The farm is not close to sewage or agricultural which leaking some fluid, which can affect the farm and pollution it.
- D - The farm is not located in an area where pesticides are sprayed by aircraft or exposed to heavy spraying of various pesticides.

### 2 - Conditions that must be available in the irrigation water:

- A - Do not contain water sewage or agricultural.
- B - Are not under any kind of inflection or exchange.
- C - Must be the water that used for irrigation or other works must be renewed constantly and continual.

### 3 - Quality standards for seeds and other plant material used in propagation (cuttings, seedling, sprouts or seeds, etc.):

- A - The seeds that used in organic farm must be producing from organic farm in the same farm or in other organic farms.
- B - If the seeds are not available organically of a particular plant variety and necessary use of seeds or any unusual propagation materials (seedlings, bulbs, tubers, etc.) must be:
  - No genetically engineered.
  - No treated chemically.

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- If the tubers can be used as ordinary inorganic tubers are planted in the land of organic farm for one season and tubers resulting seeds can be considered for use in organic agriculture.
- For seedlings vegetable plants can use ordinary seeds of any item on the condition that are not genetically engineered and non-chemically treated and grown in organic farms for a period of five weeks and shall thereafter be considered organic seedlings.

## 4 - Requirements of materials used in plant nutrition and soil fertility:

The soil fertility and plant nutrition are important factors which must be taken into account in organic farming for high yields as well as producing strong plants resistant to disease and insects. So that the use of insecticides and fungicides, which lead to many diseases to humans, as well as increase the pollution of the environment. **Therefore identified agriculture laws of organic substances permitted for use in organic agriculture as fertilizers or soil improvers, which generally comes from two main sources:**

**A - Organic materials:** which is the source of the element nitrogen mainly included:

- Compost.
- Animal leavings, such as various types of poultry waste and leavings of sheep, cows and other leavings.
- Poultry feathers powder.
- Blood powder.
- Animal horns powder.
- Bone powder.
- Seaweed powder.
- Ash wood untreated.
- Composting garbage houses (vegetable and animal waste).

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And that this fertilizer to be used in organic farms need to get a permit from the point of inspection before use, except for organic fertilizers produced in the organic farm.

## **B - Natural rocks and minerals:**

Organic farming laws have allowed the use of natural rocks and minerals which reduce the large loss of the yield result of the shift from traditional farming to organic farming, and these materials:

- Phosphate rocks as a source of phosphorus element.
- Natural potassium salts such as potassium sulfate as a source of potassium, which may also contain magnesium sulfate.
- Sulfur element.
- Calcium chloride solution, which may be used spraying of some agricultural crops such as tomato, pepper, pear, because these crops need a lot of calcium.