

ORGANIC AGRICULTURE

7th. lect. Theory 2023 – Horticulture Dept.

There are four principles of organic farming:

- **Principle of Health:** Organic agriculture must contribute to the health and well-being of soil, plants, animals, humans and the earth. It is the sustenance of mental, physical, ecological and social well-being. For instance, it provides pollution and chemical free, nutritious food items for humans.
- **Principle of Fairness:** Fairness is evident in maintaining equity and justice of the shared planet both among humans and other living beings. Organic farming provides good quality of life and helps in reducing poverty. Natural resources must be judiciously used and preserved for future generations.
- **Principle of Ecological Balance:** Organic farming must be modeled on living ecological systems. Organic farming methods must fit the ecological balances and cycles in nature.
- **Principle of Care:** Organic agriculture should be practiced in a careful and responsible manner to benefit the present and future generations and the environment.

Why is modern farming unsustainable?

1. Loss of soil fertility due to excessive use of chemical fertilizers and lack of crop rotation.
2. Nitrate run off during rains contaminates water resources.
3. Soil erosion due to deep ploughing and heavy rains.
4. More requirement of fuel for cultivation.
5. Use of poisonous bio-cide sprays to curb pest and weeds.
6. Cruelty to animals in their housing, feeding, breeding and slaughtering.
7. Loss of biodiversity due to mono culture.
8. Native animals and plants lose space to exotic species and hybrids.

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Key features of organic farming:

- 1 - Protecting soil quality using organic material and encouraging biological activity.
- 2 - Indirect provision of crop nutrients using soil microorganisms.
- 3 - Nitrogen fixation in soils using legumes.
- 4 - Weed and pest control based on methods like crop rotation, biological diversity, natural predators, organic manures and suitable chemical, thermal and biological intervention.
- 5 - Rearing of livestock, taking care of housing, nutrition, health, rearing and breeding.
- 6 - Care for the larger environment and conservation of natural habitats and wildlife.

Biological control:

Concept(idea) of biological control of agricultural pests:

All organisms ultimately doomed to death but the death that comes early comes in several images for a variety of reasons and brings all of these forms in a comprehensive expression a patio factors, and factors yard is divided into two main pillars:

- * Non-living factors yard: such as cold, heat, and drowning, choking, natural disasters.
- * Living patio factors: such as predation, parasitism, disease, competition for food and space.

The study of the impact of different kinds of factors yard census scourge of baseline studies to know the dynamics of this pest numbers to put appropriate and effective programs to combat it.

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There are several types of objects, especially those that compete human food and dairy or those that affect health and called word pest in the natural environment, or even agricultural the members scourge kills by members of other species called (natural enemies) natural enemies or objects beneficial or natural enemies.

Natural Enemies:

Live elements patio and is divided into three sections, namely:

- 1 - Predators predator: They prey on pest and feed on them.
- 2 - Parasite: They parasitize pest and feed on a two parasitism internal (Endo-parasitism) and external intrusion (Ecoto-parasitism).
- 3 - Pathogens: They cause different kinds of diseases of the pest and kill them.

Biocontrol advantages:

Biocontrol characterized as follows:

- 1 - Economical way to control pests.
- 2 - Method's reproduction and escalate their effectiveness with little intervention, especially in the trees.
- 3 - Spread of natural enemies from their place of release to the long distances and cover vast areas.
- 4 - Do not harmless to humans, animals or the environment.