

Crop Production and Management

- **Crop:** Same kind of plants grown for food on a large-scale are known as **crops**.
- On the basis of the growing season, crops are of two types- *Kharif* crops and *Rabi* crops.
- ***Kharif* crops** – Crops that are grown in the rainy season (June to September). Example – soyabean, paddy and maize.
 - **Soil requirement:** Alluvial loam with a subsoil of clay
 - **Cultivation methods:** Seeds for *Kharif* crops can be sown through broadcasting, dibbling, drilling, or transplantation
- ***Rabi* crops** – Crops that are grown in the winter season (October to March). Example – wheat, gram and pea.
 - **Soil requirement:** Clay loamy soil or black soil
 - **Cultivation methods:** Seeds for *Rabi* crops can be sown through broadcasting, dibbling, or drilling. The seeds are generally sown soon after the rainy season.
- **Green Revolution:** It is a programme started in the 1960's to increase the agricultural productivity by the use of improved seeds and advanced agricultural technologies.
- **Organic Farming:** It is the practice of cultivating crops without the use chemical fertilisers, weedicides or pesticides.
- **Basic crop production practices**
 - Preparation of soil
 - Sowing
 - Adding manure and fertilizers
 - Irrigation
 - Removal of weeds (weeding)
 - Harvesting
 - Threshing
 - Storage

Preparation of soil for cultivation: Loosening and upturning of the soil. This process is known as tilling or ploughing.

- **Implements used in ploughing**
- **Plough**

- It is made up of wood and contains two parts.
 - (a) Ploughshare (strong triangular strip of iron)
 - (b) Plough shaft (main wooden axis of plough)
- Driven with the help of animals
- Brings nutrient rich soil to the top
- Helps in aeration of the soil
- **Hoe**
 - Consists of long rod of wood or iron
 - Contains strong, broad, and bent plate of iron at one of its end
 - Driven with the help of animals
 - Used for removing weeds and loosening the soil
- **Cultivator**
 - Modern method of ploughing which saves both time and labour.
 - It is carried out with the help of a tractor
- **Sowing**
 - Planting of seeds of a crop in the soil is called **sowing**.
 - Good quality and healthy seeds must be used in order to produce healthy crop plants.
- **Tools used in sowing**
- **Traditional tool**
 - Funnel-shaped
 - Seeds are placed in soil with the help of a long pipe with sharp ends
 - This tool is driven by a plough
- **Seed drill**
 - It contains a set of uniformly arranged tubes
 - Seeds are uniformly placed in soil at appropriate depth.
 - Driven with the help of a tractor
- **Addition of Manure and Fertilizers**
 - It supplies plants with essential nutrients for growth and development.
- **Manures**
 - Prepared from decomposed animals and plant waste.
 - Provides organic matter and humus to the soil but is less rich in plant nutrients.
 - Enhances the water holding capacity and texture of the soil.
 - Make the soil porous for proper aeration.
- **Fertilizers**

- Commercially available inorganic salts rich in plant nutrients.
- Do not provide humus to the soil.
- Make soil less fertile in the long run.

Irrigation- Supplying water to plants at different intervals is called irrigation.

Sources of irrigation: Wells, tube wells, ponds, lakes, canals, rivers, dams etc.

Methods of irrigation

- **Traditional methods**

- Moat (pulley system)
- Chain pump
- *Dhekli*
- *Rahat (Lever system)*

- **Modern methods**

1. Sprinkler system

- Useful for uneven land and sandy soil.
- Uses system of perpendicular pipes with rotating nozzle on top, which sprinkles water on crops.
- Provides efficient coverage of water for large area.

2. Drip system

- Water falls drop by drop at the roots of plants.
- Provides efficient irrigation and prevents water wastage.
- Used commonly for watering fruit plants, gardens, and trees.

- **Protection from Weeds**

- **Weeds:** They are undesirable plants that grow along with the crops. *Xanthium* and *Parthenium* are the common weeds. They compete with the crops for water, nutrient, space and light.
- **Weeding:** It is the process of removal of weeds from the cultivated field.

- **Mechanical methods of weeding**

- Removal by hand
- Removal using *khurpi*
- Using seed drill or plough

- **Chemical methods of weeding**

- Spraying of weedicides. (example 2, 4-D)

- **Harvesting**

- The process of cutting of mature crops from the field is called **harvesting**.
- The process of removing grains from chaff is called **threshing**.
- The process of separating grains from the husk in the mixture of threshed chaff is called **winnowing**.

- **Instruments used for harvesting**

- Sickle
- Harvester
- Combine- It is the combined harvester and thresher.

- **Storage**

- The process of keeping crop grains safe from spoilage by moisture, insects, rats and microorganisms for a long time is called **storage**.
- **Small scale** storage of grains: It is usually done in jute bags and metallic bins.
- **Large scale** storage of grains: It is done in silos and granaries.

- **Food from animals**

- Milk is obtained from cow, buffalo, goat, and camel.
- Meat is obtained from chicken, goat, and sheep.
- Eggs are obtained from chicken and ducks.

- **Animal husbandry**

- The science of rearing animals for a commercial purpose on a large scale is known as **animal husbandry**. It includes feeding, breeding, disease control and providing shelter and care.