

Chapter 1 Crop Production and Management

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Energy from food is used to carry out various metabolic processes like digestion, respiration and excretion. Hence food has to be reproduced on a large scale.

Agricultural practices:

- 1) **Crop:** When same food crops are grown on a large scale, in a field over a large area for large scale production it is said to be a crop plant.
- 2) **Classification of crops:** On the basis of seasons, they grow
 - Kharif crops: the crops which are grown in rainy season that is June to September. Example includes paddy, cotton, maize, soybean and groundnut etc.
 - Rabi crops: the crops which are grown in winter season from October to March. Examples include Wheat, gram, peas, mustard etc.
- 3) **Agricultural practices carried out by farmers:**
 - a) Preparation of soil:
 - 1) This is the first step in preparation of field to cultivate crops.
 - 2) It is most important step which helps in turning up the soil and losing it.
 - 3) This allows the roots to penetrate deep into the soil. The process of Loosening and turning soil is called tilling and ploughing.
 - 4) Equipment used:
 - Plough: It is made of wood or iron and is being used since ancient times for tilling soil. It is made up of ploughshare (a triangular iron strip) and plough shaft(a long wooden or iron rod to which a handle is attached on one end and the other end is placed on beam on bulls' neck.
 - Hoe: It is made of wood or iron. It is a simple tool mainly used to remove weeds from the field.
 - Cultivator: The most recent equipment used for ploughing is tractors. This is a time and labour-saving process.
 - b) Sowing:

Selection of good quality, clean healthy seeds is important part before the sowing process can be carried out. Damaged seed become hollow. Thus, are lighter in weight and can float on water and can be separated from healthy seeds before sowing

Equipment used:

 - Traditional tools: It is a funnel shaped tool wherein the pipe Pierce's the soil and also brings about sowing of seeds.
 - Seed drills: seed drill makes use of a tractor. The seeds are sown at an equal distance and depth from one another. After sowing the seeds are covered again with soil.
 - c) Adding manure and fertilizers:

- 1) Fertilizers : These are the nutrients that are added to soil to increase crop yield and promote healthy plant growth. These are chemical substances made in factories. Eg. NPK etc.
 - 2) Manuring: the process in which farmers add manure to soil so as to replenish it's nutrients quality is called Manuring.
 - 3) Manure: it is an organic substance obtained by decomposition of plant and animal waste by microorganisms.
 - 4) Crop rotation: it is a method of replenishing the soil by growing different crops alternatively on the same land.
- d) Irrigation: Supplying the crops with water in regular interval of time is called as irrigation.
- Sources: there are many sources such as lakes, dams, wells, tube wells etc.
 - Traditional methods: in this type of irrigation the water from lakes, wells and channels are lifted with the help of either cattle or humans.
 - The methods include moat, Chain pumps, Rahat etc.
 - Modern methods of irrigation:
 1. Sprinkle irrigation:
In this method, perpendicular pipes, having rotating nozzles on top, are joined to the main pipeline at regular intervals. Water is allowed to flow through the main pipe under pressure with the help of a pump, it escapes from the rotating nozzles. It gets sprinkled on the crop as if it is raining
 2. Drip irrigation: This is a very efficient method. Water is given to the crops in a drop-by-drop manner directly near the roots of the plant. This saves water in regions where there is scarcity.
It is useful for garden plants, fruit cultivator etc.
- e) Protection from weeds
- Weeds: Undesirable plants which grow along with crop plant are called weeds
 - Weeding: The process of removal of weeds from among crops is called weeding. It is essential because crops need to compete with weed for nutrients, space etc.
 - Tilling, manual uprooting using khurpi, cutting weeds from time to time, using chemicals known as weedicides are all methods to remove weeds from the field. Example of weedicides is 2,4 D which kills weeds but does not affect the crop plant. It has side effects on the farmer's health so should be used carefully.
- f) Harvesting:
- Cutting of crops after 3-4 months after which it becomes mature is called harvesting.
 - Equipment like a sickle or harvester are used.
 - Threshing: The process of removal of husk from seeds of crop is called threshing. Grains can be separated from chaff using a winnowing machine.
- g) Storage
- Crops should be stored in a clean, place which is free from moisture, dust, insects, rats and microorganisms.

- Sun drying of harvested crop is important as they may germinate causing their early spoilage.
- Farmers can use jute bags to store grains. For large scale storage one can make use of silos, granaries, large godowns and chemical treatment of crops is also carried out.
- One can use neem leaves at home for storage of grain.

h) Food from animals:

- Animals are reared at home or in farms and have to be provided with proper food, shelter and care. When this is done on a large scale, it is called animal husbandry. E.g., fish, poultry etc.