

1. Introduction

- To feed the large population, food must be produced in large quantity.
- Agriculture started when early humans began cultivating land instead of just hunting.

1.1 Agricultural Practices

- Crop: Same kind of plants grown at one place on a large scale.
(Example: Wheat crop = only wheat plants grown.)

Types of Crops:

Season	Crop Type	Examples
Rainy Season (June–Sept)	Kharif Crops	Paddy, Maize, Cotton
Winter Season (Oct–March)	Rabi Crops	Wheat, Gram, Pea

1.2 Basic Practices of Crop Production

- Seven Main Steps (Agricultural Practices):
 1. Preparation of soil
 2. Sowing
 3. Adding manure and fertilizers
 4. Irrigation
 5. Protecting from weeds
 6. Harvesting
 7. Storage

1.3 Preparation of Soil

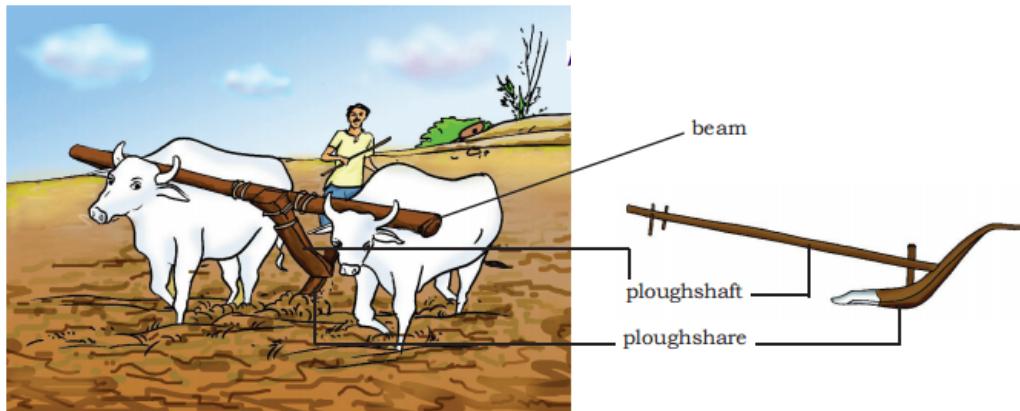
- First step before sowing a crop.
- Soil is loosened and turned to allow roots to grow deeper and breathe easily.
- Loosening also brings nutrient-rich soil to the top.

Important Terms:

- Tilling/Ploughing: Loosening and turning the soil using a plough.
- Levelling: Flattening the soil using a leveller.

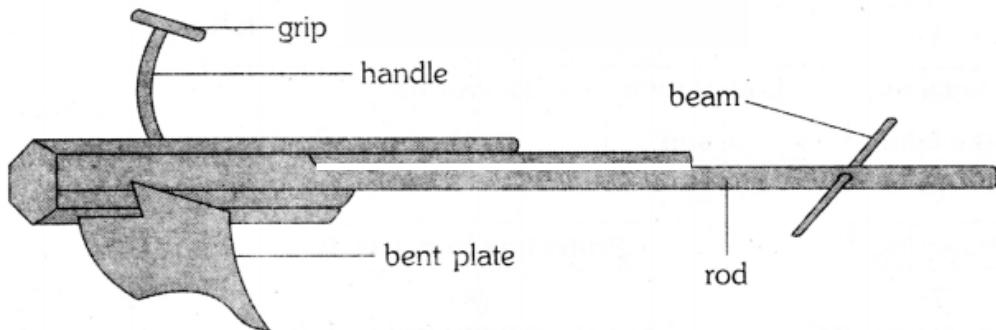
Tools:

- **Plough:** Wooden/iron tool for tilling.



The plough

- **Hoe:** For loosening soil and removing weeds.



- **Cultivator:** Tractor-driven tool for ploughing quickly.



1.4 Sowing

- Choosing good quality healthy seeds is important for high yield.

Activity 1.1 – Testing the Quality of Seeds

Materials Needed:

- A bowl
- Water
- Wheat seeds

Steps to Perform:

1. Fill the bowl with clean water.
2. Put the wheat seeds into the water gently.
3. Observe what happens to the seeds.

Observation:

- Healthy seeds sink to the bottom of the bowl.
- Damaged or hollow seeds float on the surface.

Conclusion:

- Good quality seeds are heavy and sink.
- Poor quality seeds are light or hollow and float.

Sowing Tools:

- Traditional tool: Funnel-shaped, manually operated.



- Seed Drill: Tractor-based tool that sows seeds uniformly and covers them.



 Correct spacing between seeds avoids overcrowding.

1.5 Adding Manure and Fertilizers

- Manure: Natural, made from decomposed plants and animals.
- Fertiliser: Factory-made chemicals rich in nutrients (e.g., urea, NPK).

 Excessive fertilizer use can harm soil and pollute water.

Activity 1.2 – Effect of Manure and Fertilizer on Plant Growth

Materials Needed:

- Three small pots
- Soil
- Cow dung manure
- Fertiliser (like urea)
- Seeds (any fast-growing seeds like wheat or moong)
- Water

Steps to Perform:

1. Fill the three pots with equal amounts of soil.
2. In the first pot, mix soil with cow dung manure.
3. In the second pot, mix soil with a fertilizer like urea.
4. Keep the third pot with only plain soil (no manure, no fertilizer).
5. Sow equal numbers of seeds in each pot.
6. Water all the pots regularly and keep them under the same conditions.
7. Observe the growth of plants for a few days.

Observation:

- Plants in the fertilizer pot grow the fastest.
- Plants in the manure pot also grow well but a little slower than the fertilizer pot.
- Plants in the plain soil pot grow very slowly and are weaker.

Conclusion:

- Fertilisers promote faster plant growth because they provide high nutrients quickly.
- Manure improves soil structure and adds nutrients slowly but naturally.
- Plain soil without extra nutrients leads to poor plant growth.

 Both manure and fertilisers help plants, but manure also keeps soil healthy in the long term.

Difference Between Manure and Fertilizer (Table 1.1):

Fertilizer	Manure
Made in factories	Natural (plant/animal waste)
No humus	Adds humus
Very rich in nutrients	Less rich in nutrients

1.6 Irrigation

- **Irrigation:** Supplying water to crops regularly.
- Water carries nutrients and helps seeds germinate.

★ Sources of Irrigation:

- Wells, tubewells, ponds, lakes, rivers, dams, canals.

★ Traditional Methods:

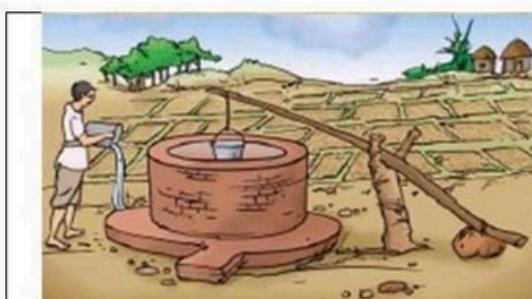
- Moat, Chain Pump, Dhekli, Rahat



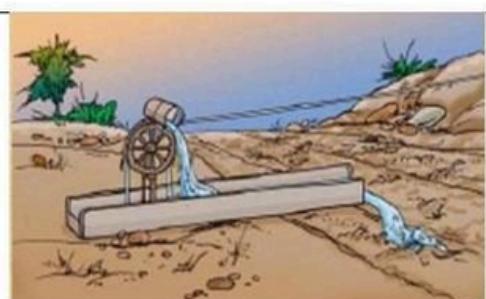
Rahat



Moat



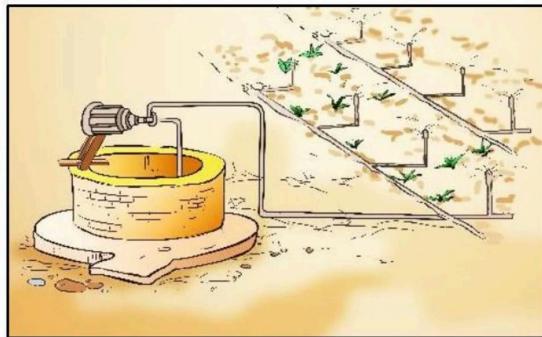
Dhekli



Chain Pump

★ Modern Methods:

- **Sprinkler System:** Rotating nozzles sprinkle water like rain.



- **Drip System:** Water drips near the roots directly.



Drip irrigation

Drip system saves a lot of water!

1.7 Protection from Weeds

- **Weeds:** Unwanted plants growing with crops.
- **Weeding:** Removing weeds to ensure healthy crop growth.

Methods:

- **Manual weeding:** Using khurpi or seed drill.
- **Weedicides:** Chemicals like 2,4-D sprayed to kill weeds. (Fig. 1.6)



Spraying Weedicide

- ✓ Farmers must cover nose and mouth while spraying.

1.8 Harvesting

- **Harvesting:** Cutting mature crops.
- Done manually using sickle (Fig. 1.7) or by combine machine (harvester + thresher) (Fig. 1.8).

Important Terms:

- **Threshing:** Separating grain from chaff.



Combine

- ✓ Burning crop stubs after harvest causes pollution.

Harvest Festivals

- After harvesting, farmers celebrate festivals like:
Pongal, Baisakhi, Holi, Diwali, Nabanya, Bihu.

1.9 Storage

- Grains must be dried properly before storage to prevent spoilage.
- Farmers use:
 - Jute bags
 - Metallic bins
 - Silos:-



Silos for storage of grain

- Granaries :-



Neem leaves are used to store grains at home.

Chemical treatments are used for large-scale storage.

1.10 Food from Animals

- We get milk, meat, eggs from animals.
- Fish is rich in Vitamin D (cod liver oil).

Rearing animals for food on a large scale is called Animal Husbandry.