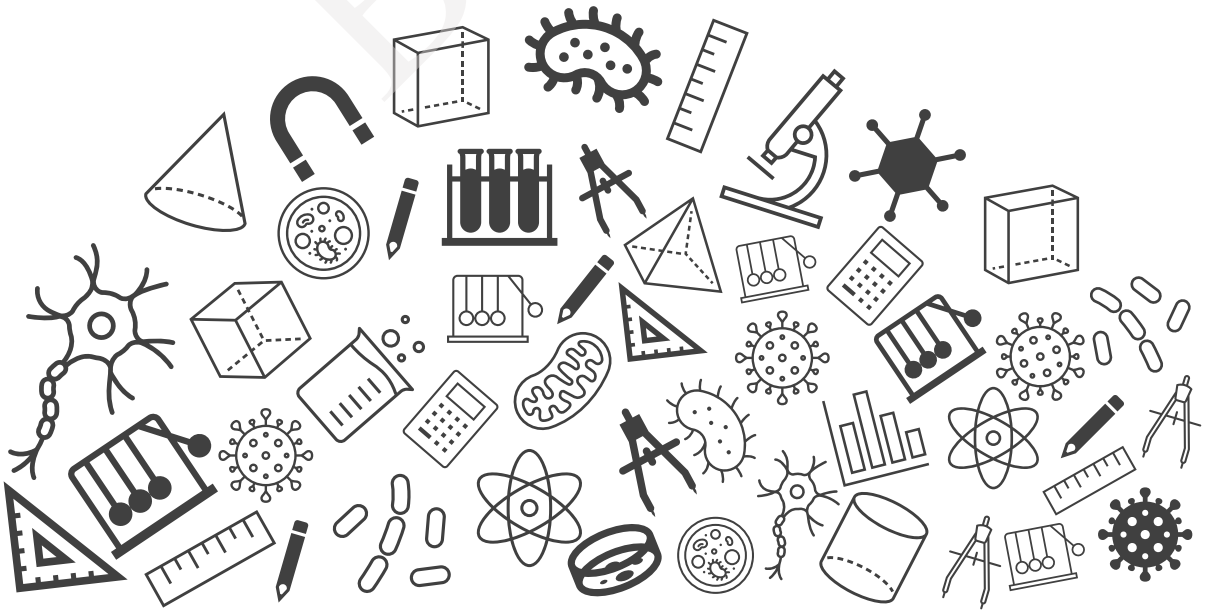
Grade 08
Chapter Notes



BIOLOGY

BYJU'S

CHAPTER NOTES

Crop Production and Management

Grade 8

Topics to be covered

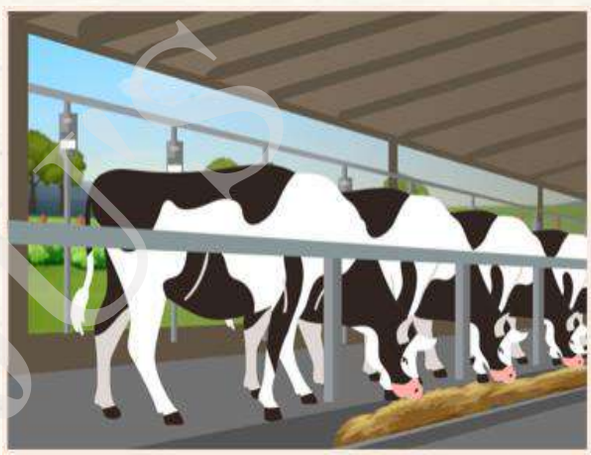
1. Agriculture
2. Types of Crop
3. Agricultural Practices
   - 3.1 Preparation of soil
   - 3.2 Sowing
   - 3.3 Adding manure and fertilisers
   - 3.4 Irrigation
   - 3.5 Protection from weeds
   - 3.6 Harvesting
   - 3.7 Storage
4. Animal Husbandry

1. Agriculture

Definition

- The practice of **cultivating crops** and **rearing livestock** on a **large scale** for the purpose of **food production.**

Cultivation of crops



Rearing of livestock

2. Types of Crop

Types

In India, crops can be broadly **categorised** into **two types** based on seasons – **Rabi** and **Kharif** crops.

Rabi

- The crops which are **sown** in the **winter season.**
- Examples – wheat, mustard, gram, and pea.




Kharif

- The crops which are **sown** in the **rainy season.**
- Examples – maize, paddy, soyabean and groundnut.

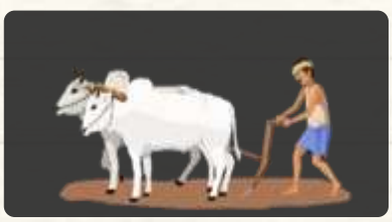



3. Agricultural Practices

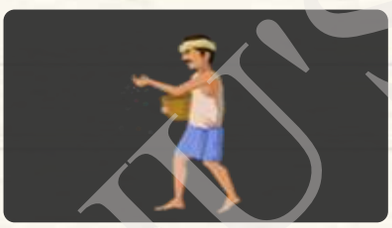
Definition

The **steps** involved in **agriculture** are collectively termed as **agricultural practices.**

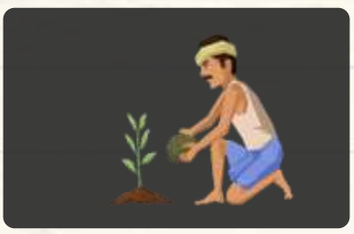
Agricultural Practices



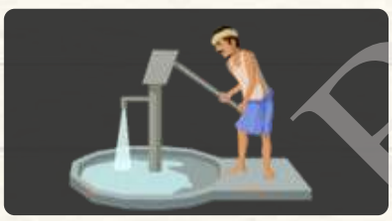
a. Preparation of soil



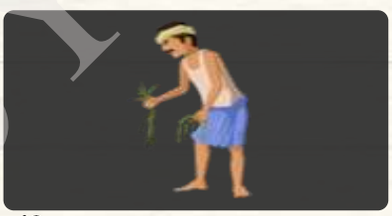
b. Sowing



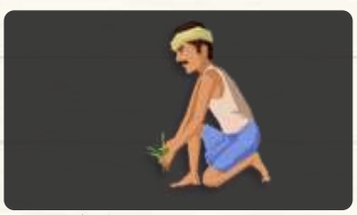
c. Addition of nutrients



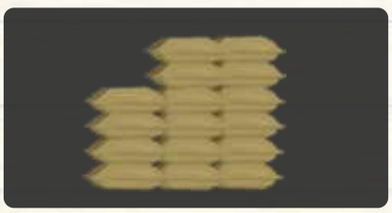
d. Irrigation



e. Removal of weeds



f. Harvesting



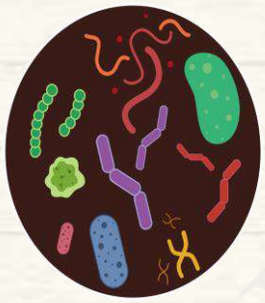
g. Storage

3. Agricultural Practices

3.1 Preparation of Soil

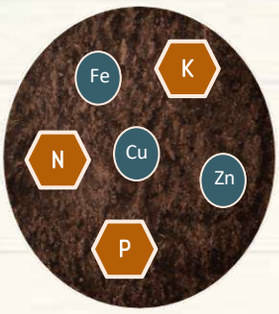
The process of **loosening** and **turning** the soil is called tilling or ploughing. The soil is **ploughed** before sowing the seeds because following are the advantages of soil preparation:

Loosens the **soil**



Helps in **growth** of **microbes**

Allows **root** to **breathe** easily



Mixes the **soil** **nutrients** uniformly

Tools required for Tilling/ Ploughing

Traditional

Plough

This is being used since ancient times for **tilling** the soil, **adding fertilisers** to the crop, **removing** the **weeds**, and **turning** the soil.

Hoe

It is a simple tool that is used for **removing weeds** and for **loosening** the soil.

Modern

Cultivator

Ploughing is done by a tractor-driven cultivator. The use of a cultivator saves labour and time.

3. Agricultural Practices

3.2 Sowing

The process of **planting seeds** in the soil. Sowing requires a proper selection of seeds and tools.

Desirable Qualities of Seeds

Seeds should be **disease resistant.**

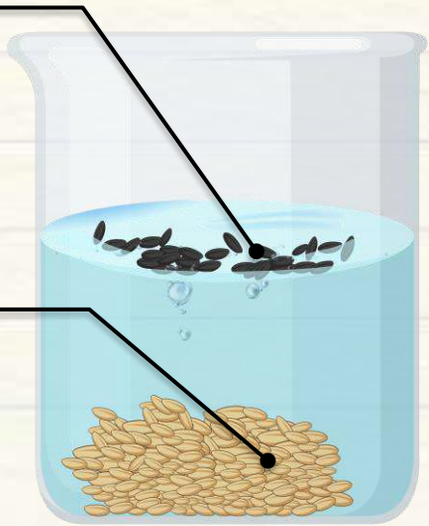
Seeds should be of **high yield variety.**

Seeds should have **wider adaptability.**

Seed Test

Damaged seeds float on the **surface**

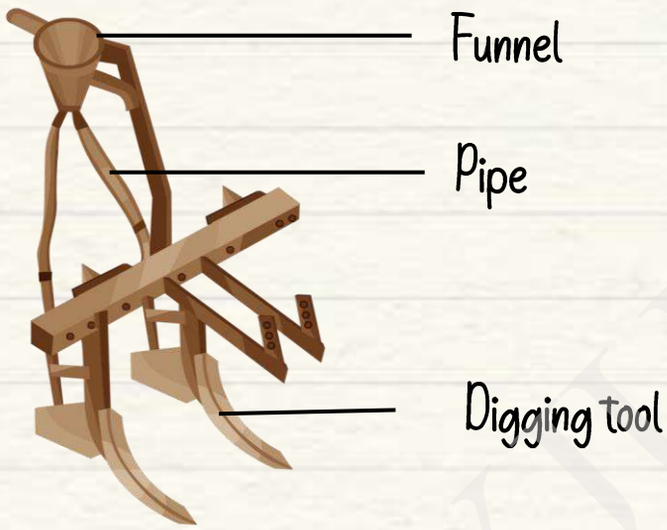
Healthy seeds sink to the **bottom**



3. Agricultural Practices

Tools Used for Sowing

Traditional: Funnel Sowing



- Funnel sowing is a **traditional method** of sowing.
- It has three parts: funnel, pipe-like structure, and a digging tool.
- Cattle is also used in this method of sowing.

Modern: Seed Drill

- Seeds are **sown uniformly.**
- Seeds are sown at **proper depth.**
- Seeds are **protected** from **birds.**

3. Agricultural Practices

3.3 Addition of Manure and Fertilisers

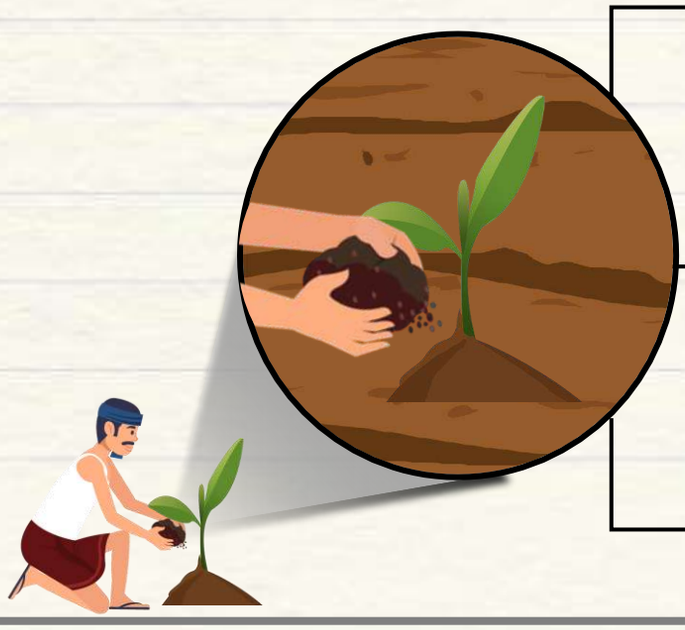
Composting is the process of **decomposition** of kitchen wastes, animal wastes, and agricultural wastes. **Manure** is an organic substance obtained from the **decomposition** of **plant or animal wastes.** Farmers dump plant and animal waste in pits in open places and allow it to decompose. The decomposition is caused by some microorganisms. The decomposed matter is used as organic manure.

Animal waste

Kitchen waste

Agricultural waste

Advantages of Manure



- Enhances **water retention** and **improves soil texture**
- Facilitates **exchange of gases**
- Increases **friendly microbes** and adds **humus** to the soil

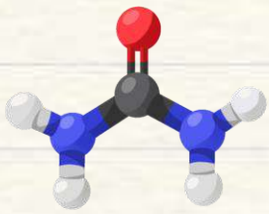
3. Agricultural Practices

Limitations of Manure

- Manure has limited soil nutrients.
- It has a deficit in essential nutrients like nitrogen (N), phosphorus (P), and potassium (K).

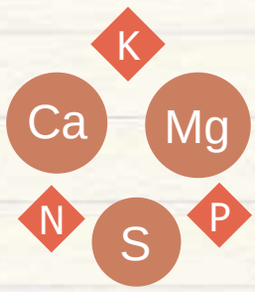
Fertilisers

- These are **inorganic salts** rich in **nutrients.**
- Examples of fertilisers are urea, potash, NPK, superphosphate, and ammonium sulfate.



Inorganic Salts

Made in factories



Rich in nutrients

3. Agricultural Practices

Advantages of Fertilisers

- Rich in **specific nutrients** (N, P, K)
- Enhances **growth** and **yield** of crops

Disadvantages of Fertilisers

- Reduces **soil fertility**
- Kills **beneficial organisms** in the soil
- Causes **water pollution**

Differences between Manure and Fertiliser

Manure	Fertiliser
• **Organic substance** obtained by decomposition of animal and plant waste. • Prepared in **fields.** • **Rich** in **nutrients** like **nitrogen, phosphorus** and **potassium.** • Provides **humus** to the soil.	• **Inorganic salt** made from synthetic substances. • Prepared in **factories.** • Relatively **less rich** in **nutrients.** • Does **not provide** any **humus** to the soil.

3. Agricultural Practices

Eutrophication

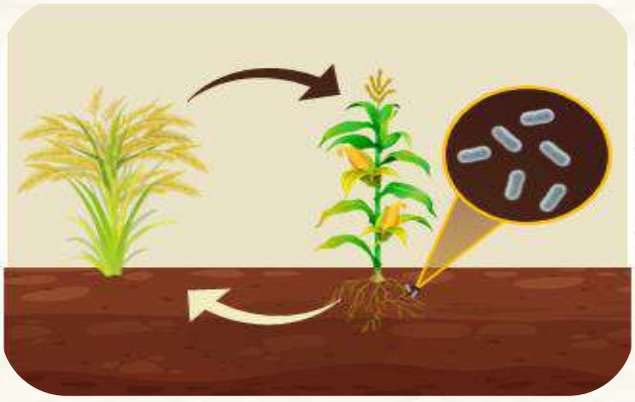
- The **excess fertilisers** wash away from the crop fields into the water bodies.
- Since fertilisers are rich in nutrients, they **promote high algal growth** over the **water surface.**
- The algal growth **takes up** most of the **dissolved oxygen** in water thus leading to the **death** of **aquatic plants** and **fishes.**

Alternate Methods of Soil Replenishment

Land Fallowing

- Land is **left barren** for one or more seasons.
- Helps in restoring the lost nutrients in the soil.

Crop Rotation



- Different crops are **grown alternately.**
- For example, leguminous crops are grown after growing wheat.
- *Rhizobium* in root nodules of leguminous crops fix atmospheric nitrogen.

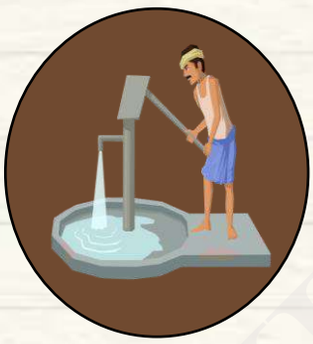
3. Agricultural Practices

3.4 Irrigation

Supply of **water** to crops at **regular intervals** is called irrigation.

Sources of Irrigation

River



Tube Well

Well

Dam

Traditional Methods of Irrigation

Chain Pump

The farmer **rotates** a **wheel** that **allows the buckets** attached to a chain to **collect water.**

Moat

A **bucket** is **attached** to a **pulley** that is **drawn by cattle.**

3. Agricultural Practices

Traditional Methods of Irrigation

Dhekli

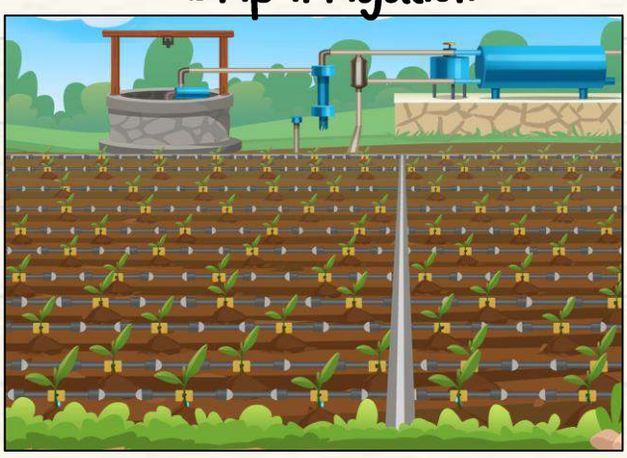
The farmer **immerses** an **empty bucket** into the water. The water-filled bucket is **pulled up** due to the **weight of the rock** on the other end.

Rahat

Cattle is **connected** to a **wheel**. When the cattle move, they **rotate the wheel** that has buckets attached to it. This helps in drawing water from the well.

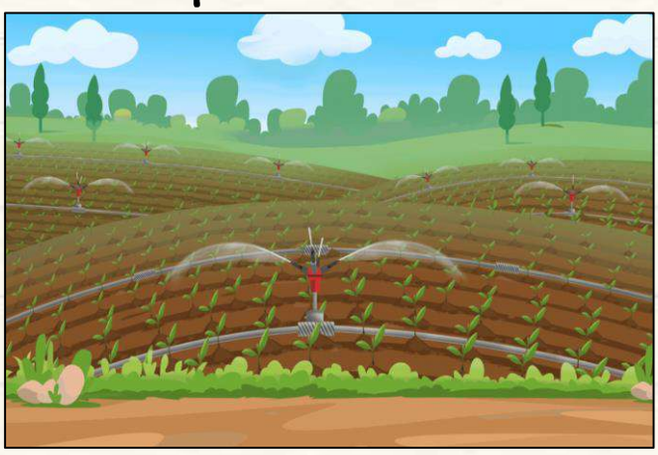
Modern Methods of Irrigation

Drip irrigation



In this system, water is supplied to crops **drop by drop** near the roots. So it is called drip system.

Sprinkler method



This system **simulates rainfall** and is useful on uneven land surfaces.

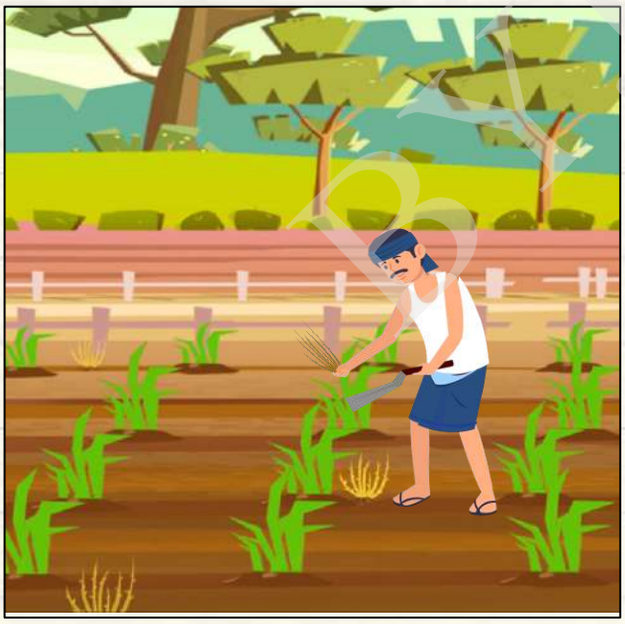
3. Agricultural Practices

3.5 Protection from Weeds

- In a field, many other **undesirable plants** may grow naturally along with the crop. These undesirable plants are called weeds. The removal of weeds is called weeding.

Methods of Weeding

Manual Method



Removal of weeds can be done by:

1. **Tilling** which helps in uprooting and killing weeds.
2. Manually using a **khurpi.**

Chemical Method

Removal of weeds can be done by:

1. 1. Spraying **weedicides** like 2,4-D kills weeds.
2. 2. Weedicides do not affect crops.

3. Agricultural Practices

3.6 Harvesting

- Harvesting is **cutting down crops** once they are **matured.**

Tools of Harvesting

Traditional Method:
Sickle

Modern Method:
Combine

Harvesting is done manually with the help of a **sickle** which is a traditional tool.

Combine is a modern tool which is a combination of harvester and thresher

3. Agricultural Practices

Post Harvesting: Threshing

- The process of **separating the grains** from the **straw** to which it is attached.

Post Harvesting: Winnowing

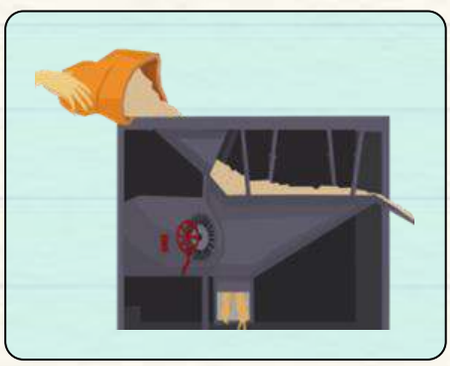
- The process of **separating the grains** from the chaff.

Tools Used for Winnowing

Traditional Method

Farmers **manually** separate grains from chaff with the help of **wind.**

Modern Method



Winnowing machine can easily separate grains from the chaff.

3. Agricultural Practices

3.7 Storage

- Storage of agricultural produce is an important task. If the **harvested grains** are to be kept for **longer time**, they should be **safe** from **moisture, insects, rats and microorganisms.**

Storage Challenges

Rats, microorganisms, insects, and moisture are the major storage challenges faced by farmers.

Types of Storage

Small scale storage

Jute bags

Metal bins

Large scale storage

Granaries

Silos

1. Animal Husbandry

Definition

- It is the **practice** of **rearing** and **taking care of animals** on a **large scale** to obtain **food products** from them.

Cattle provide milk

Poultry provides eggs and meat

Fishery provides various nutrients

Mind Map