

Chapter 1 – CROP PRODUCTION AND MANAGEMENT

Topics to be covered:

- Introduction
- Types of crops on the basis of season
- Basic Practices of Crop Production



AXE



SHOVEL



SICKLE

Types of crops

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graph TD; A[Types of crops] --> B[On the basis of season]; B --> C[Kharif]; B --> D[Rabi];
```

**On the basis
of season**

Kharif

Rabi

Preparation
of soil



Sowing



Adding
manure and
fertilizers



Harvesting



Protection
from weeds



Irrigation

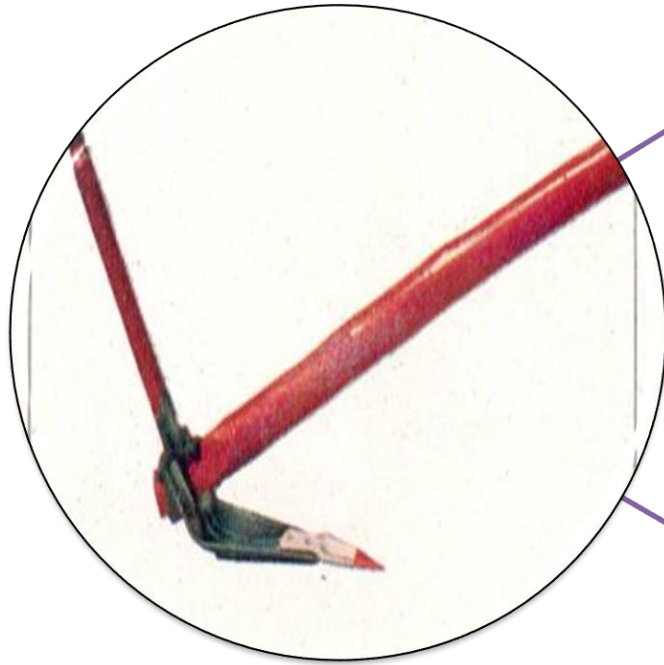


Storage

Basic practices of crop

Agricultural Implements

PLOUGH



**Made
up of:**

- Wood

Function

- Tilling the soil
- Adding fertilizers to the soil
- Scraping of soil





CULTIVATOR









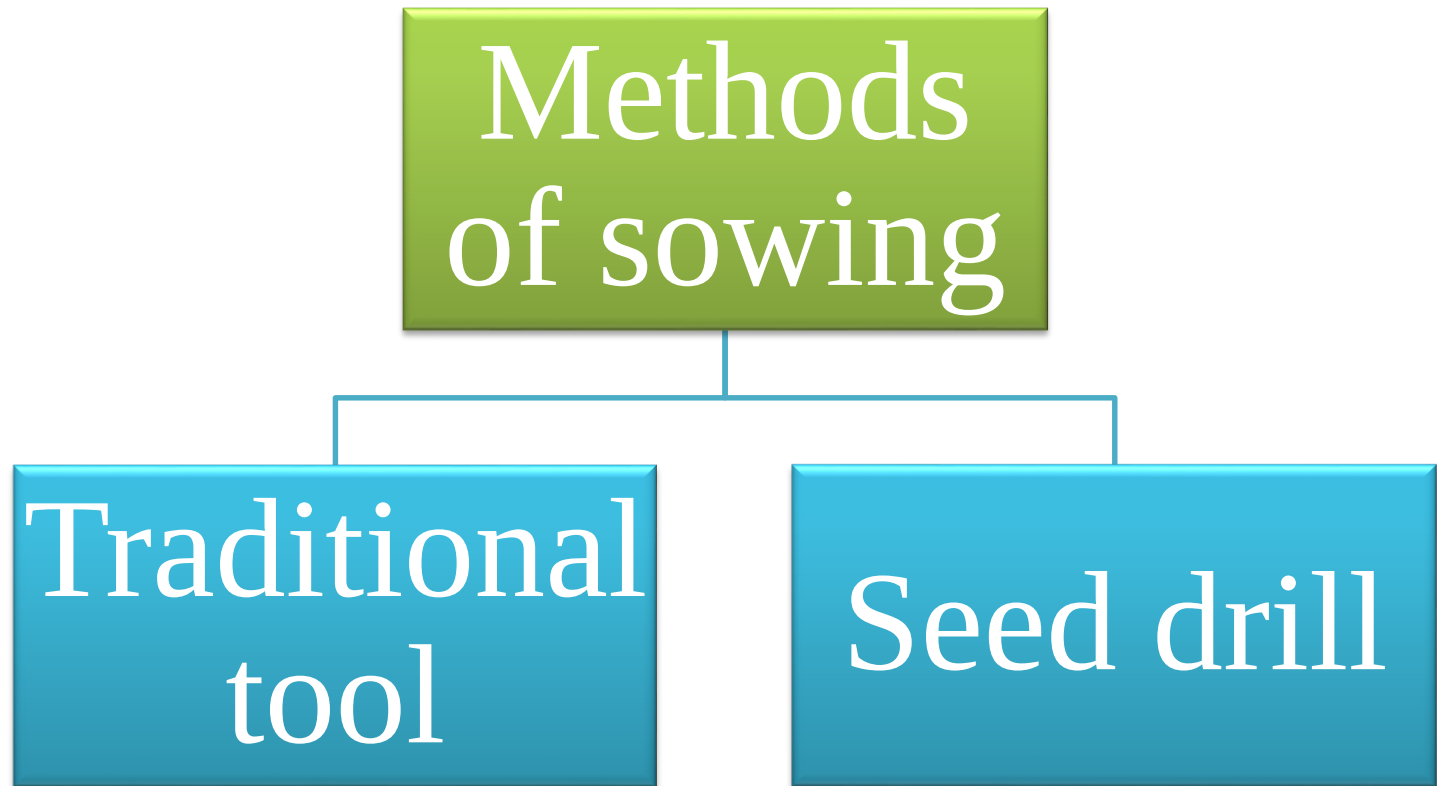
HOE







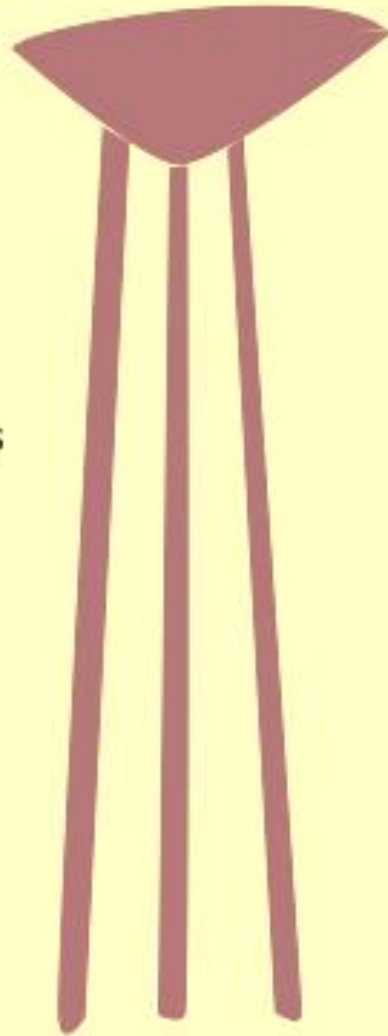
2. Sowing



Funnel

Pipes

Traditional seed sowing tool





Seed Drill



3. Adding manures and fertilizers

Manures

A natural substance obtained by the decomposition of cattle dung, human waste and plant residue.

Fertilizers

These are chemical substances rich in a particular nutrient and are produced in factories.

Urea, Potash, NPK, Super phosphate, Ammonium sulphate.

Table 1.1 : Differences between Fertiliser and Manure

S. No.	Fertiliser	Manure
1.	A fertiliser is an inorganic salt.	Manure is a natural substance obtained by the decomposition of cattle dung, human waste and plant residues.
2.	A fertiliser is prepared in factories.	Manure can be prepared in the fields.
3.	A fertiliser does not provide any humus to the soil.	Manure provides a lot of humus to the soil.
4.	Fertilisers are very rich in plant nutrients like nitrogen, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

Advantages of manure

- It enhances water holding capacity of the soil.
- It makes the soil porous due to which exchange of gases becomes easy.
- It increases the number of friendly microbes.
- It improves the texture of the soil.

Disadvantages of fertilizers

- Excessive use of fertilizers has made the soil less fertile.
- Also caused water pollution.

Solution to excessive use of fertilizers

- Substitute fertilizers by organic manure.
- Leave the field uncultivated between the two crops.
- Crop rotation.

4. Irrigation

What is natural irrigation?

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graph TD; A[Need for Irrigation] --> B[Germination of seeds]; A --> C[Protects from frost and hot air currents]; A --> D[Maintain moisture of the soil]; A --> E[Easy transport of nutrients];
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Germination
of seeds

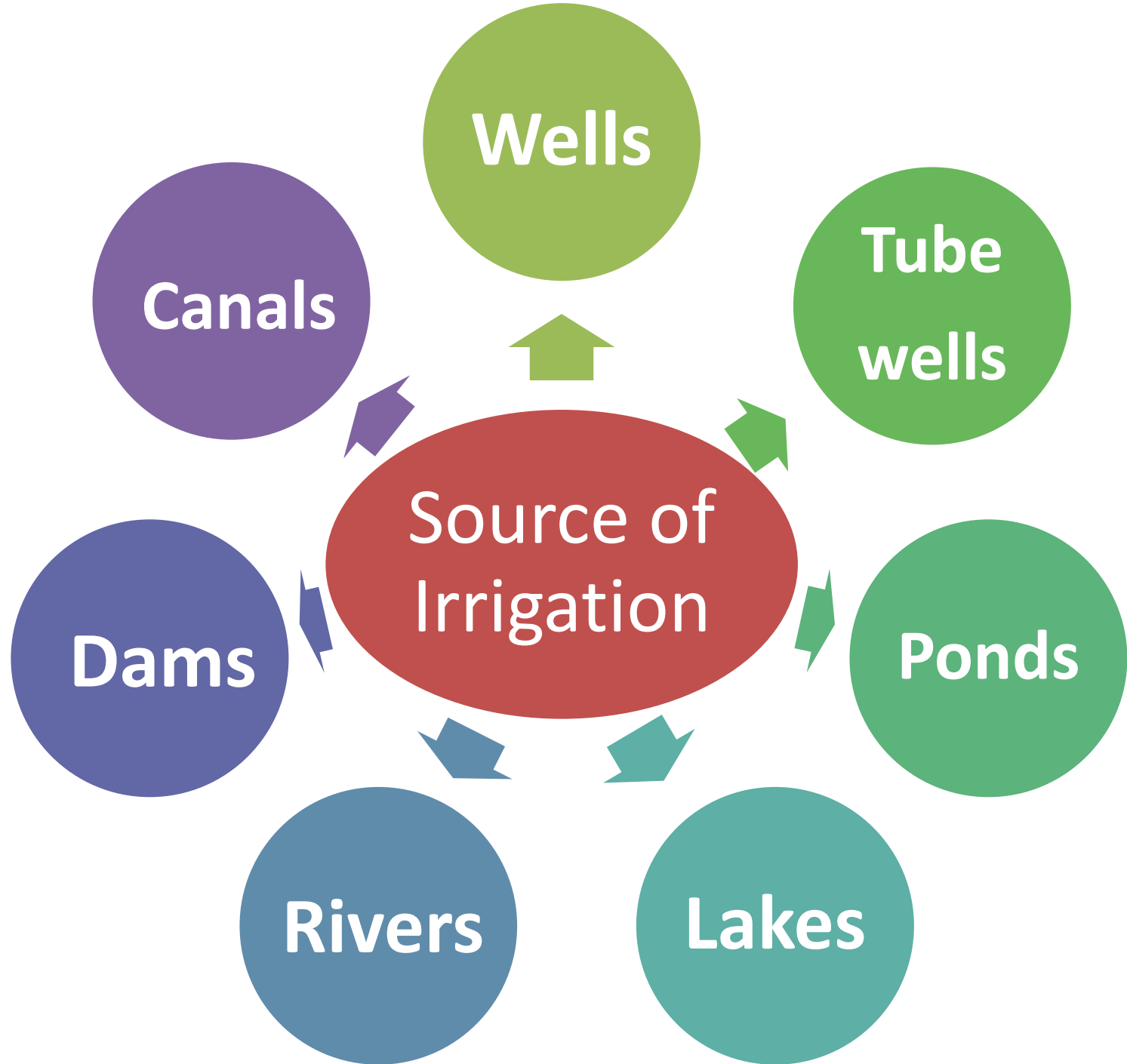
Maintain
moisture of
the soil

Need for
Irrigation

Easy
transport of
nutrients

Protects from
frost and hot air
currents

**How water protects the crop from
frost and hot air currents???**



Methods of Irrigation

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graph TD; A[Methods of Irrigation] --> B[Traditional Method]; A --> C[Modern Method]; B --> D[Moat]; B --> E[Chain pump]; B --> F[Dhekli]; B --> G[Rahat]; C --> H[Sprinkler system]; C --> I[Drip System]; J[Red Arrow] --> I;
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Traditional Method

Moat

Chain
pump

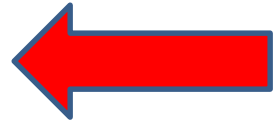
Dhekli

Rahat

Modern Method

Sprinkler
system

Drip
System





(i) Moat (pulley-system)



(ii) Chain pump



(iii) Dhekli



(iv) Rahat (Lever system)

Traditional methods of irrigation

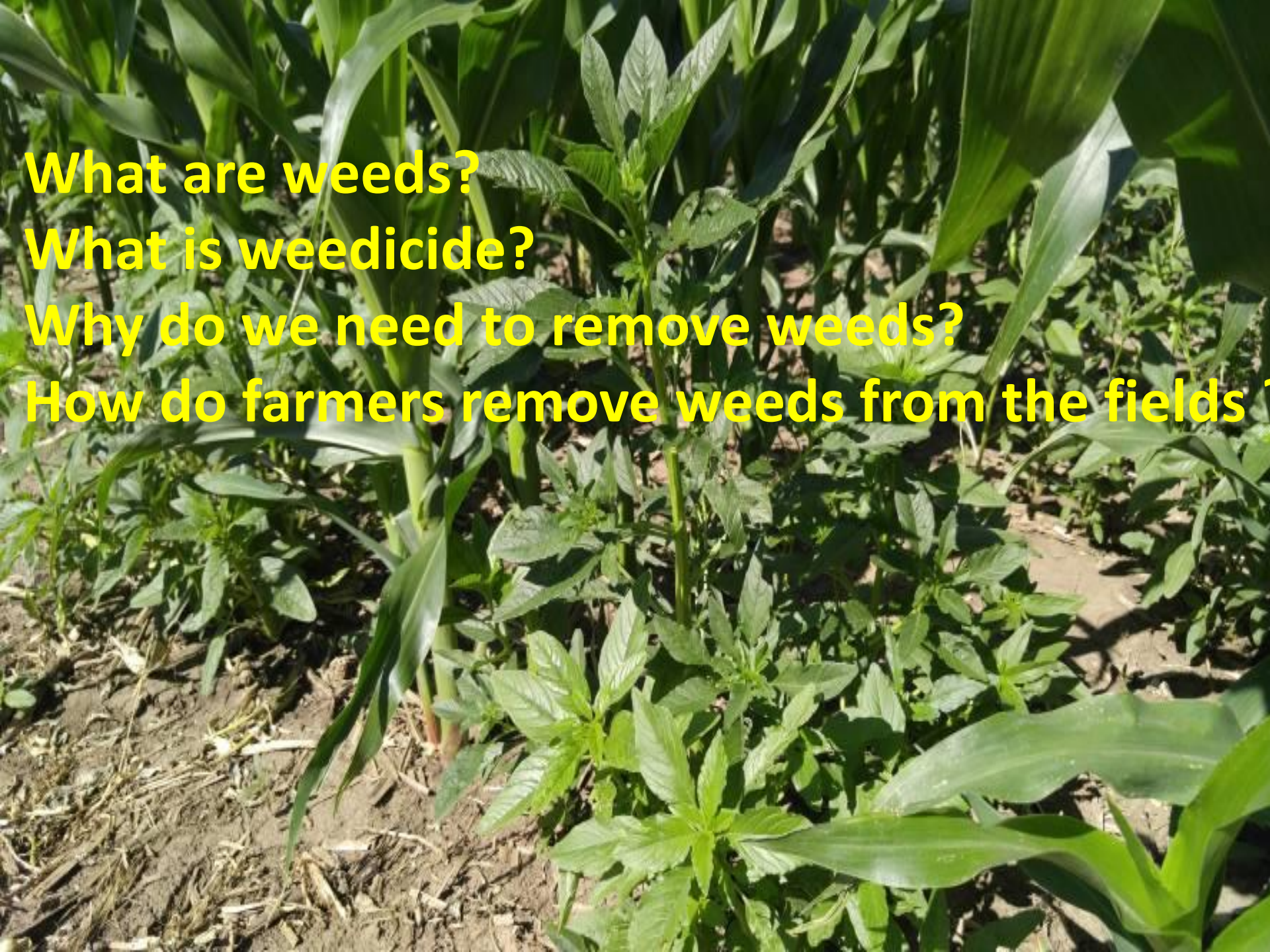
Advantages

- Cost effective.

Disadvantages

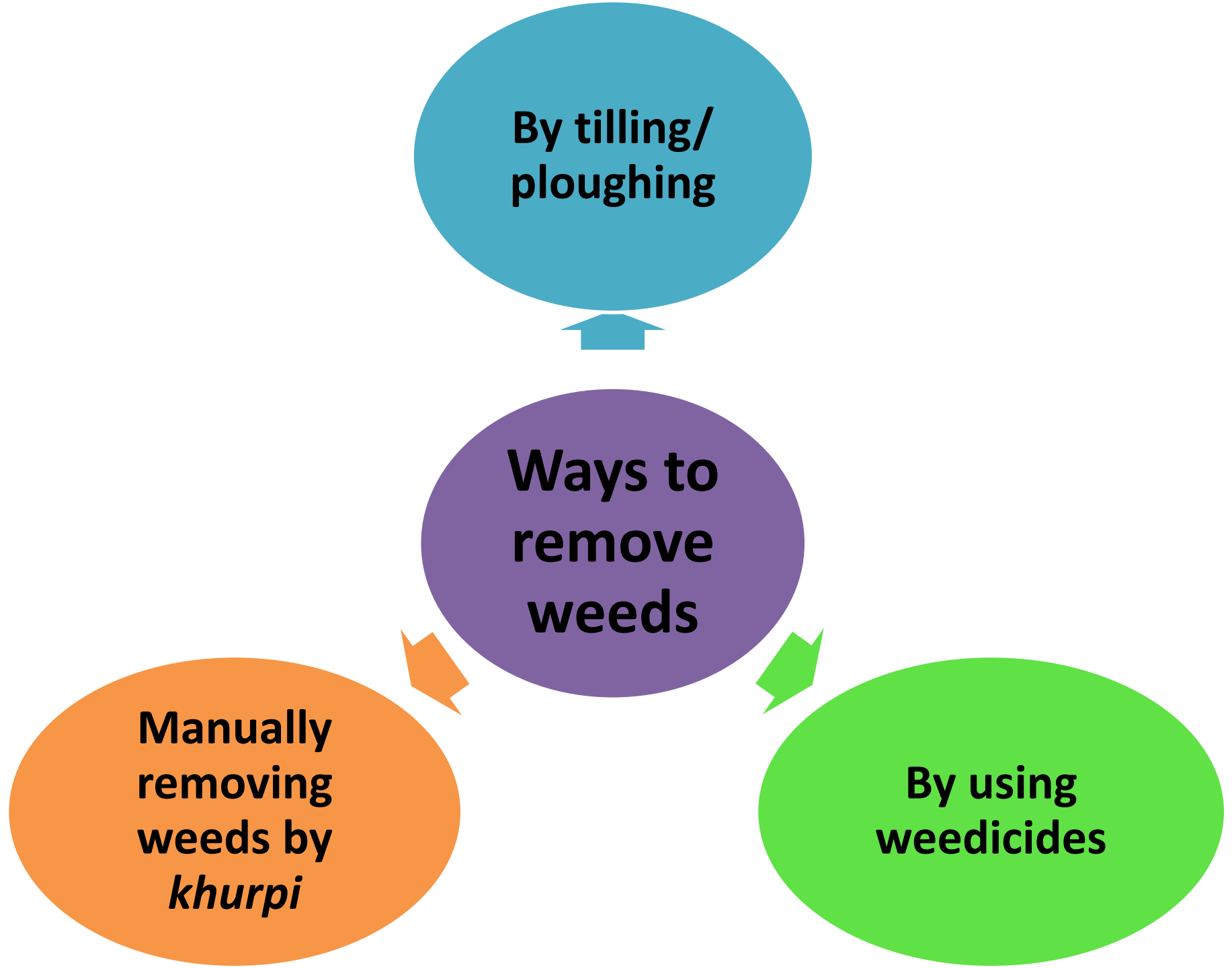
- Time consuming.
- Labour intensive.
- Water wastage.
- Less efficient.

5. Protection from weeds

A photograph of a cornfield. In the center, a tall, green weed plant with many small leaves stands out among the corn plants. The corn plants have large, broad, green leaves. The ground is brown soil with some dry leaves and debris. The text is overlaid on the left side of the image in a bright yellow, bold font.

What are weeds?
What is weedicide?
Why do we need to remove weeds?
How do farmers remove weeds from the fields?

- The undesirable plants that naturally grows with the crop is called as **weed**.
- The removal of weeds is called as **weedicide**.
- Weeding is necessary since weeds compete with the crop plants for water, nutrients, space and light. Thus, they affect the growth of the crop. Some weeds interfere even in harvesting and may be poisonous for animals and human beings.



**Do weedicides have any effect on the
person handling the weedicide
sprayer???**

What is 2,4-D?

6. Harvesting

- The cutting of crop after it is mature is called **harvesting**.
- It usually takes **3 to 4 months** for a cereal crop to mature.
- Harvesting in our country is either done manually by **sickle** or by a machine called **harvester**.

- The process of separating grain from the chaff is known as **threshing**.
- This is carried out with the help of a machine called '**combine**' which is in fact a combined harvester and thresher.
- Farmers with small holdings of land do the separation of grain and chaff by **winnowing**.