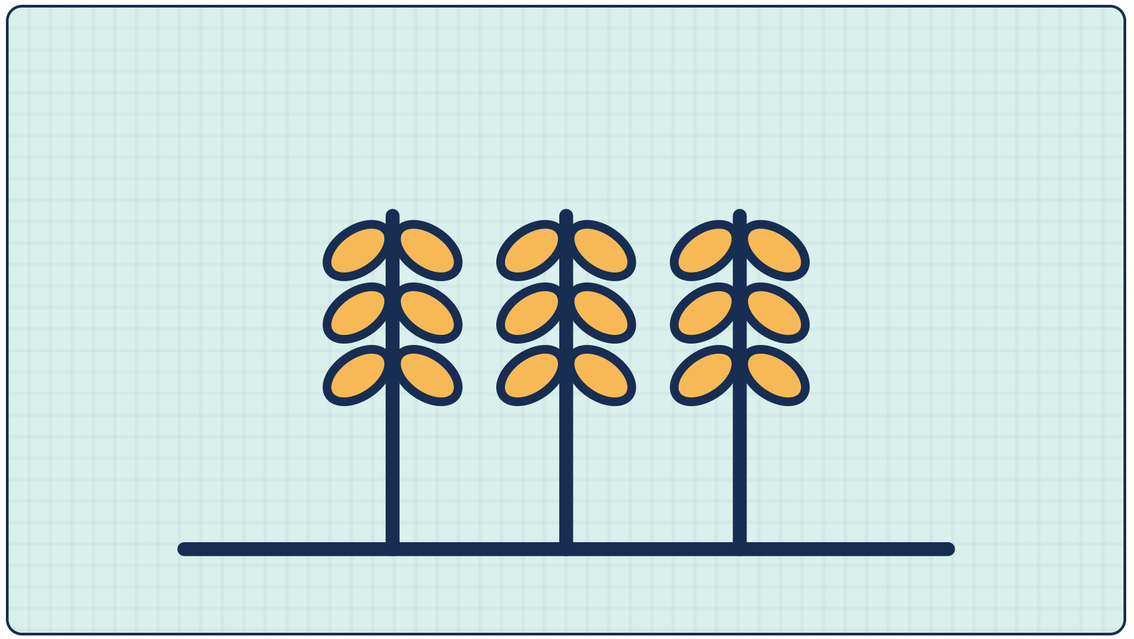
Earlier NCERT Class 8 Science · From preparing the soil to storing the harvest

Crop Production and Management



Goals

By the end of this lesson you can

- Sort crops into kharif and rabi
- List the agricultural practices in order
- Compare manure and fertilisers
- Compare old and new ways of irrigation
- Explain weed control, harvesting and storage

What is a crop?

- Plants of the same kind grown on a large scale in one place
- Cereals: wheat, rice, maize; pulses: gram, pea, moong
- Also vegetables, fruits, oilseeds and fibre crops like cotton
- Growing crops needs planned work across a whole season

Two main crop seasons

Kharif crops

- Sown with the rainy season, about June to September
- Paddy, maize, soyabean, groundnut, cotton
- Need plenty of water

Rabi crops

- Grown in winter, about October to March
- Wheat, gram, pea, mustard
- Harvested around April, as summer begins

The agricultural practices, in order

- Prepare the soil, then sow the seeds
- Add manure and fertilisers; irrigate regularly
- Protect the crop from weeds (and pests)
- Harvest the crop, then store the grain safely

Step 1: Preparing the soil

- Ploughing (tilling) turns and loosens the soil
- Roots go deeper and breathe more easily
- Earthworms and microbes thrive and add humus
- Tools: plough, hoe and tractor-drawn cultivator
- Levelling the field helps water spread evenly

Step 2: Sowing the seeds

- Choose clean, healthy seeds of a good variety
- Damaged seeds are hollow and float in water
- Traditional funnel-shaped tool drops seeds into furrows
- A seed drill sows at equal depth and spacing
- Paddy seedlings are raised in a nursery, then transplanted

Step 3: Manure or fertiliser?

Manure

- Natural: decomposed plant and animal waste
- Adds humus and improves soil texture
- Helps soil hold water; supports friendly microbes

Fertiliser

- Made in factories, e.g. urea, NPK
- Rich in one or a few nutrients
- Overuse harms soil and pollutes water

Keeping the soil fertile

- Growing crop after crop uses up soil nutrients
- Crop rotation: grow different crops in turn
- Legumes such as gram and moong host Rhizobium bacteria
- Rhizobium in root nodules fixes nitrogen from the air
- Leaving a field fallow also lets soil recover

Step 4: Irrigation, old and new

Traditional

- Moat (pulley system)
- Chain pump
- Dhekli and rahat (lever system)
- Often worked by people or cattle

Modern

- Sprinkler: rotating nozzles spray like rain
- Drip: water falls drop by drop at the roots
- Save water; suit dry or uneven land

Step 5: Protecting the crop from weeds

- Weeds are unwanted plants growing among crops
- They compete for water, nutrients, space and light
- Remove by hand, with a khurpi, or by tilling
- Best removed before they flower and make seeds
- Weedicides such as 2,4-D kill weeds but not the crop

Step 6: Harvesting, threshing and winnowing

- Harvesting: cutting the mature crop with a sickle or harvester
- Threshing: separating grain from the chaff
- A combine harvests and threshes in one go
- Winnowing uses wind to blow away the lighter chaff

Step 7: Storing the grain safely

- Freshly harvested grain holds extra moisture
- Dry it in the sun before storing
- Moist grain attracts insects, rats and microbes
- At home: jute bags or metal bins, often with dried neem leaves
- Large stores: silos and granaries with pest control

Worked example

A year on a paddy-wheat farm in Punjab

- June-July: paddy seedlings are transplanted from a nursery
- Canals and tubewells top up the monsoon rain
- Autumn: paddy is harvested, often with a combine
- The field is ploughed and wheat is sown for winter
- April: the wheat harvest, celebrated with Baisakhi

Quick check

Which of these is a rabi crop?

A. Paddy

B. Maize

C. Soyabean

D. Wheat

Summary

Key takeaways

1. Kharif crops grow in the rains; rabi crops in winter
2. Seven practices take a crop from soil to store
3. Manure, fertilisers and crop rotation feed the soil
4. Drip and sprinkler irrigation save water
5. Weed control, drying and safe storage protect the harvest