

LESSON SLIDES

Crop Production and Management

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

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

 Example

A year on a paddy-wheat farm in Punjab

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

 Quick check

Which of these is a rabi crop?

A Paddy

B Maize

C Soyabean

D Wheat

Key takeaways

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