# **Class 9 Science — Chapter 12: Improvement in Food Resources**

## **1. Introduction**

- Food is essential for survival.
- Improving food resources means increasing food production to meet the needs of growing population.
- Agriculture is the main source of food.

# 2. Crop Production and Management

The process of growing crops involves several steps:

#### a) Preparation of Soil

- Soil is tilled using tools like ploughs to loosen it.
- Loosening soil improves aeration, water absorption, and root growth.

#### b) Sowing

- Seeds are sown either by broadcasting (scattering seeds) or by drilling (placing seeds in rows).
- Drilling is better as it ensures uniform growth.

#### c) Adding Manure and Fertilizers

- Manure is decomposed organic matter from plants and animals.
- Fertilizers are chemical substances that provide nutrients.
- Both improve soil fertility and increase crop yield.

### d) Irrigation

- Providing water to crops regularly.
- Methods include canal irrigation, tube wells, sprinklers, and drip irrigation.
- Drip irrigation is water-efficient and reduces wastage.

#### e) Protection from Weeds

- Weeds are unwanted plants that compete with crops.
- Methods to control weeds: manual removal, using herbicides.

#### f) Harvesting

- When crops mature, they are cut and collected.
- After harvesting, grains are separated from stalks (threshing).

## 3. Animal Husbandry

- Rearing and breeding of animals to produce food and other products.
- Important animals: cows, buffaloes, goats, poultry.
- Animal products include milk, meat, eggs, wool.

#### a) Dairy Farming

- Rearing cows and buffaloes for milk.
- Selective breeding improves milk yield.

#### **b)** Poultry Farming

• Raising birds like chickens and ducks for eggs and meat.

### 4. Preservation of Food

- Food spoils due to microorganisms and enzymes.
- Preservation methods:
  - Cooling or refrigeration slows down microbial growth.
  - Drying removes moisture.
  - Use of preservatives like salt, sugar, vinegar.
  - Canning and freezing.

## **5. Improvement in Crop Varieties**

- Selective breeding: crossing plants with desirable traits to get improved varieties.
- Hybridisation: crossing two genetically different plants to produce hybrids with better yield and disease resistance.

## 6. Plant Breeding

- Technique to produce new and improved varieties.
- Steps:

- Selection of parents
- Hybridisation
- Selection of best hybrids

### 7. Role of Fertilizers and Manure

- Fertilizers supply nitrogen, phosphorus, potassium.
- Manure improves soil texture and provides micronutrients.

### 8. Sustainable Agriculture

- Using eco-friendly practices.
- Crop rotation to maintain soil fertility.
- Avoiding excessive use of chemicals.

### **Summary Table**

Term	Description
Manure	Organic matter from decomposed plants and animals
Fertilizers	Chemical substances providing nutrients
Irrigation	Supplying water to crops
Weeds	Unwanted plants competing with crops
Selective breeding	Crossing plants/animals with desired traits
Hybridisation	Cross between two genetically different parents