

Chapter – 15 Improvement in Food Resources

Class 9 Science NCERT Textbook – Page 204

Q1. What do we get from cereals, pulses, fruits and vegetables?

Answer:

We get following from cereals, pulses, fruits and vegetables:

- a. Cereals like wheat, rice, maize, etc. are sources of carbohydrates which provide energy.
- b. Pulses like pea, gram and soybean, etc. are sources of proteins.
- c. Vegetables and fruits are a source of vitamins, minerals, carbohydrates, proteins and fats.

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Q1. How do biotic and abiotic factors affect crop production?

Answer: Biotic factors like pests, insects and diseases decrease the crop production. Weeds decrease crop production by taking nutrients and light from the main crop. Abiotic factors like temperature, wind, rain affect the crop production.

Q2. What are the desirable agronomic characteristics for crop improvements?

Answer: Desirable agronomic characteristics for crop improvements are:

- a) Tallness and branching are essential necessity for fodder crops.
- b) Dwarfness is required in cereals, so less nutrients are consumed by crops.

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Q1. What are macro-nutrients and why are they called macronutrients?

Answer: Macro-nutrient are required in large amount for growth and development of plants. The six macro-nutrients essential for plants are nitrogen, phosphorus, potassium, calcium, magnesium, and sulphur.

Q2. How do plants get nutrients?

Answer: Plants get nutrients from air, water and soil. Carbon and Oxygen are provided by air and the rest of the thirteen nutrients are provided by soil.

Class 9 Science NCERT Textbook – Page 207

Q1. Compare the use of manure and fertilizers in maintaining soil fertility?

Answer: Manures increase soil fertility with the help of organic matter and nutrients which are prepared by the decay of animal excreta and plant wastes. But fertilizers are inorganic compounds whose extreme use is harmful to the symbiotic micro-organisms in soil.

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Q.7 Which of the following conditions will give the most benefits? Why?

(a) Farmers use high-quality seeds, do not adopt irrigation or use fertilizers.

(b) Farmers use ordinary seeds, adopt irrigation and use fertilizer.

(c) Farmers use quality seeds, adopt irrigation, use fertilizer and use crop protection measures.

Answer: (c) Farmers use quality seeds, adopt irrigation, use fertilizers and use crop protection measures because the use of quality seeds is insufficient until they are well irrigated, improved fertilizers and secured from biotic factors.

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Q1. Why should preventive measures and biological control methods be preferred for protecting crops?

Answer: Preventive measures and biological control methods should be preferred for protecting crops because extreme use of chemicals cause environmental problems and also destroy plants and animals.

Q2. What factors may be responsible for losses of grains during storage?

Answer: Biotic and abiotic factors are responsible for the loss of stored grains. Abiotic factors are unsuitable temperature of store house, humidity of air, high moisture content in the grains and improper containers used for storage.

Class 9 Science NCERT Textbook – Page 210

Q1. Which method is commonly used for improving cattle breeds and why?

Answer: Cross breeding is a method used for improving cattle breeds. It is a process in which original varieties of cattle are crossed by exotic breeds to get a cross breed which is high-yielding.

Class 9 Science NCERT Textbook – Page 211

Q1. Discuss the implications of the following statement: “It is interesting to note that poultry is India’s most efficient converter of low fibre food stuff (which is unfit for human consumption) into highly nutritious animal protein food.

Answer:

In poultry farming, Poultry birds use various agricultural products which are unhealthy for human consumption and give us eggs, chickens and high-quality meat which is a major source of animal protein.

Class 9 Science NCERT Textbook – Page 211

Q1. What management practice are common in dairy and poultry farming?

Answer:

The common management practiced in dairy and poultry farming are”

- i) To maintain proper temperature.
- ii) To maintain proper housing facilities with hygienic conditions.
- iii) To maintain proper feeding.
- iv) To prevent and control diseases and pests.

Q2. What is the difference between broilers and layers and in their management?

Answer:

S/No.	Layers	Broilers
1.	They are egg-laying birds, which are maintained for getting eggs.	They are maintained for getting meat.
2.	They start producing eggs in 20 weeks.	They are raised for 7 weeks in poultry farms and then sent to market for meat production.
3.	They require sufficient space and suitable lighting.	They have the proper environment to grow fast and have low mortality.
4.	They require planned feed with vitamins, minerals and micronutrients.	Their food requirement is rich in protein and vitamin A & K.

Class 9 Science NCERT Textbook – Page 213

Q1. How are fish obtained?

Answer: There are two ways of obtaining fish:

- a) From natural resources, called capture fishing
- b) From fish - farming, called culture fishery. Fishing is done both in marine and freshwater environments.

Q2. What are the advantages of composite fish culture?

Answer: T

The advantages of composite fish culture is:

- a) It helps to get a variety of fish yield.
- b) Food in the pond is used up by different varieties of fish having various food habits in a pond.
- c) Fish do not compete for food as different fish get their kind of food.

Class 9 Science NCERT Textbook – Page 213

Q1. What are the desirable characters of bee varieties suitable for honey production?

Answer: Desirable characters of bee varieties suitable for honey production are:

- a) They should have high honey collecting ability.
- b) They should not sting.
- c) They should stay in the beehive for long periods.

Q2. What is pasturage and how is it related to honey production?

Answer: Pasturage is flora provided to honey bees for collecting nectar and pollen which is their food. Nectar is changed into honey. The amount and quality of honey depend upon type and extent of pasturage.

Class 9 Science NCERT Textbook – Page 214 and 215 (Exercise)

Q1. Explain any one method of crop production which ensures high yield.

Answer:

Crop production management states to control the various features of crop production for obtaining maximum and best yield. The three constituents of crop production are:

1. Nutrient management.
2. Irrigation.
3. Cropping pattern.

Nutrient Management –

- It means to control the selection, timing and amount of nutrient supply to the crops. Plants need inorganic nutrients.
- Nutrients are provided by air, water and soil. There are 40 elements in the ash plant, but 16 of them are needed for plant growth and development. which are called essential plant nutrients.
- Carbon and oxygen are obtained from air and hydrogen from water.
- 13 elements are supplied by the soil, called minerals.

Source	Nutrients	Type
Air	Carbon (C), Oxygen (O)	Macronutrients (2)
Water	Hydrogen (H)	Macronutrients (1)
Soil	Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), Magnesium (Mg), Sulphur (S).	Macronutrients (6)
	Iron (Fe), Manganese (Mn), Boron (B), Zinc (Zn), Copper (Cu), Molybdenum (Mo), Chlorine (Cl).	Macronutrients (7)

Q2. Why are manure and fertilizers used in fields?

Answer:

Manure and fertilizer are mixed to the soil of crop field to increase the fertility of soil and productivity of crop. They remove the deficiency of nutrients in the soil of the field.

Q3. What are the advantages of inter-cropping and crop rotation?

Answer:

Advantages of Inter-cropping; -

- It uses natural resources of sunlight, land and water.
- Soil erosion is controlled.
- Fertilizers are added depending on the need of crops.
- The different crops are harvested.
- Production of each crop can be promoted and consumed separately.

Advantages of Crop Rotation: -

- It controls pests and weeds.
- It decreases the need of fertilizers.

3. Many crops can be grown in succession with one type of soil.
4. The soil utilised more.

Q4. What is genetic manipulation? How is it useful in agricultural practices?

Answer:

Improvement of crop variety is genetic manipulation of crop plants for increasing their yield, improving quality, suitability to variety conditions and resistance to biotic and abiotic factors.

Genetic manipulation is combination of new genes for various qualities from other genotypes into the crop variety so as to have desired changes.

It is done by hybridization, mutation, breeding, polyploidy and DNA recombination technology.

Hybridisation: the cross between genetically dissimilar plants to produce its new kind is called hybridisation.

Mutation breeding: they are produced by gamma irradiation and physical and chemical agents called mutagens.

Polyploidy: It is increase of chromosome number which produce higher yields like in potato.

DNA recombination technology: the transfer of genes from one organism to another for modification are called genetically modified organisms. For example, Cotton is genetically modified crop with bacterial genes that protect plants from insects.

Q5. How do storage grain losses occur?

Answer:

The loss of grains in storage is 9.3% annually. The two factors which damage grains:

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1. Biotic factor like insects, rodents, birds, mites and bacteria.
2. Abiotic factors like moisture and temperature.
 - a) Effect of temperature: the growth of insects and microorganisms in the stored food depends on variation of temperature. So, it should be stored below $30^{\circ}C$, so that insects and microorganisms are less active to damage food grains.
 - b) Effect of moisture: the moisture present in food grains increases the rate of decay of food grains by microorganisms and enzymes. Due to moisture, food grains swells and require more space.

Q6. How do-good animal husbandry practices benefit farmers?

Answer:

The branch of agriculture related to feeding, breeding and caring of domestic animals is called animal husbandry.

Animal husbandry plans for domestic animal's shelter, breeding, health, disease control and proper economic operation.

Animal husbandry is beneficial to farmers in many ways:

1. Increase in the yield of products like meat, eggs and milk.
2. Advancement in the selective breeding of domesticated animals.
3. Proper maintenance like hygienic feed, clean shelter, balanced diet, preventing the livestock from diseases and disease-causing agents.

Q7. What are the benefits of cattle farming?

Answer:

Benefits of cattle farming: -

1. Milch animals are used for the production of milk.
2. Drought cattle are used as laborers for agriculture work like tilling, irrigation and carting.
3. Cattle farming increases the income of the farmers and their standard of living.
4. Wastes from the cattle is used to enrich the soil.
5. It increases the source of employment.
6. Milch animals feed on grass so it is low-cost maintenance.

Q8. For increasing production. What is common in poultry, fisheries and bee-keeping?

Answer:

For the increase in the production of poultry, fisheries and bee-keeping are: -

1. Variety improvement.
2. Housing.
3. Rearing.
4. Sanitation.
5. Disease.
6. Control and marketing.

Q9. How do you differentiate between capture fishing, mariculture and aquaculture?

Answer:

Capture fishing	Mariculture	Aquaculture
The fish catching is done from natural resources like lakes, rivers, oceans, seas, etc.	Culture of marine fishes is in the coastal water.	Culturing of fishes is in water body which is salt water or fresh water.

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