EDUGROSS
WISDOMISING KNOWLEDGE

NCERT Solutio ns for Class 9 Science Chapter 15
Improvement In Food Resources

IN TEXT QUESTION 1.1 PAGE: 204

1. What do we get from cereals, pulses, fruits and vegetables? Solution:
Cereals are the source of carbohydrate and is main reason of energy.
Pulses provide protein for growth and development
Vegetables and fruits are loaded with minerals, vitamins, carbohydrates, proteins and fats for overall development.

IN TEXT QUESTION 1.2 PAGE: 205

1. How do biotic and abiotic factors affect crop production?
Solution:
2 major factors that affect the crop are:

- Biotic factors like insects, rodents, pests, and many more spread the disease and reduce crop production.
- Abiotic factors like humidity, temperature, moisture, wind, rain, flood and many more destroy the crop raised.

2. What are the desirable agronomic characteristics for crop improvement? Solution:
The essential agronomic features required for crop improvement are: •
Profuse branching along with tallness in any fodder crop
• Dwarfness in any cereals.

IN TEXT QUESTION 1.3 PAGE: 206

1. What are macro-nutrients and why are they called macronutrients?
Solution:
Macro-nutrients are the fundamental elements that are used by plants in more quantity.
Macro-nutrients needed by the plants are:
• Macro-nutrients as the constituent of protoplasm
• Phosphorus, Nitrogen, Sulphur are present in proteins
• Calcium is existing in cell wall
• Magnesium is significant component of chlorophyll

2. How do plants get nutrients?

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Solution:

There are 16 basic essential nutrients required by the plants to grow. Carbon and Oxygen are supplied by water and the remaining nutrients are supplied through soil.

IN TEXT QUESTION 1.4 PAGE: 207

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

Solution:

- Manure improves the soil quality with added nutrients.
- Manure provides extra organic matter called humus to the soil and therefore increasing the water retention capacity of sandy soils and drainage in clayey soil.
- Manures reduces soil erosion.
- They provide food for soil friendly bacteria which are helpful in growing crops.

Effects of fertilizers are:

- Fertilizers make the soil to become too dry and powdered and rises rate of soil erosion.
- The organic matter decreases by decreasing the porosity of soil hence the plant roots do not get oxygen properly.
- The nature of soil changes either to basic or acidic.

IN TEXT QUESTION 1.5 PAGE: 208

1. 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.

Solution:

Option (c) will give the most benefits because use of good quality seeds is not only sufficient until the soil is properly irrigated, enriched with fertilizers and protected from biotic factors.

IN TEXT QUESTION 1.6 PAGE: 209

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

Solution:

Over exposer of chemicals leads to environmental problems hence, biological methods are preferred for protecting crops from pathogens, insects and rodents along with increasing the production. Since chemicals are harmful for plants and also for the animals which feed on it, hence bio-pesticides are used as the safe way of crop protection.

2. What factors may be responsible for losses of grains during storage?
Solution:

Biotic and Abiotic factors are responsible for loss of grains during storage like:

- Rodents
- Pests
- Insects
- Fungi
- Bacteria
- Sunlight
- Flood
- Rain
- Temperature
- Moisture

IN TEXT QUESTION 1.7 PAGE: 210

1. Which method is commonly used for improving cattle breeds and why? Solution:

Cross breading is generally the best method adopted for improving the cattle breed quality. In this method, breeding is between two good cattle breed results in a new improved variety of cattle breed or offspring. While breeding, it is taken care to have a good resultant with high yield having resistance to climatic conditions.

IN TEXT QUESTION 1.8 PAGE: 211

1. What management practices are common in dairy and poultry farming?
Solution:

- Well-designed Hygienic shelter for dairy animals and poultry birds.

- Good quality proper food and fodder are provided to dairy animals and poultry birds.
- Importance for animal health by prevention and cure of disease caused by bacteria, virus, or fungi.
- Sunlight feasible and airy ventilated shelter for animals

2. What are the differences between broilers and layers and in their management?
Solution:

Broilers

The poultry bird raised for meat purpose is called broiler. Broilers feed on protein rich adequate fat food. The level of vitamins A and K is kept high in the poultry feeds.

Layers

The egg laying poultry bird is called layer. The housing, environmental and nutritional requirements of broilers vary from those of egg layers. Layers require proper lightning and enough space.

3. Discuss the implications of the following statement: "It is interesting to note that poultry is India's most efficient converter of low fiber food stuff (which is unfit for human consumption) into highly nutritious animal protein food." Solution:

Poultry farming aims in raising domestic birds for egg and chicken meat purpose. These domestic birds feed on animal feeds which mainly consists of roughages for getting good quality feathers, egg, chicken and nutrient rich manure. For this reasons, it is said that, "poultry is India's most efficient converter of low fibre food stuff into highly nutritious animal protein food".

IN TEXT QUESTION 1.9 PAGE: 213

1. How are fish obtained? Solution:

Fishes are obtained in two ways:
Capture fishing: obtaining fishes from natural resources
Culture Fishery: culturing of fishes in fresh water ecosystem like river, pond and lake also including marine.

2. What are the advantages of composite fish culture?
Solution:

Advantages of composite fish culture are:

- In a single fish pond, a combination of 5 or 6 types of fish species can be cultured since they do not compete for food among them.
- Food resource can be completely utilized
- Survival of the fish also increases
- More yield

3. What are the desirable characters of bee varieties suitable for honey production?
Solution:

- The variety of bee should yield large amount of honey. • The bees should stay for a longer period in bee hives
- The bees should not sting much.
- Bee should be disease resistant.

4. What is pasturage and how is it related to honey production?
Solution:

Pasturage refers to the availability of flowers to the bees for easy accessibility for pollen collection and nectar. Kinds of flowers available will determine the taste of the honey, hence Pasturage is the main reason for the good quality honey.

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EXERCISE 1.1 PAGE: 214

1. Explain any one method of crop production which ensures high yield. Solution:
Plant breeding is one of the method adopted for high yield plant breeding and is implemented to improve the varieties of crops by breeding plants. Plants from various places/areas are picked up with preferred traits and then the process of hybridization or cross-breeding is done among these diversities to get a crop/plant of anticipated characteristic.

2. Why are manure and fertilizers used in fields?
Solution:
Manures and fertilizers are used to enrich the soil quality and improve the yield. They also help in controlling the diseases. Manure and fertilizers replenish the soil by supply nutrients to the soil. They are excellent source of potassium, phosphorous and nitrogen which assist in healthy development of plants. Manures and fertilizers mainly improve the fertility of the soil.

3. What are the advantages of inter-cropping and crop rotation?
Solution:
Inter-Cropping

- Checks pests and rodents and hence decreases the chances of spoiling of whole crops.
- Decreased chances of soil erosion.
- Reduced loss of crops with high yield.
- Less water requirement.

Crop-rotation

- Farmers can grow two or three crops annually.
- Pulses take nitrogen directly from the atmosphere, and hence require minimal amount of fertilizers.
- Both fruits and Vegetables can be grown easily.
- Best use of land with proper supply of nutrients.

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4. What is genetic manipulation? How is it useful in agricultural practices? Solution:

Genetic manipulation is process in which the transfer of genes takes place from one organism to another. Here gene of a particular character is introduced inside the chromosome cell and hence results in a transgenic plant.

Example: BT Cotton is a genetically modified crop which carry bacterial genes, that protects this plant from insects. These are used in plants like brinjal, cabbage, rice, cauliflower, and maize crops to get protection from insects.

5. How do storage grain losses occur?

Solution:

Storage grain losses occur due to various abiotic and biotic factors. Abiotic factors:

- Humidity
- Air
- Temperature
- Flood
- Wind

Biotic factors

- Insects
- Rodent's
  pesticides
- Bacteria
- Mites
- Birds

6. How do good animal husbandry practices benefit farmers? Solution:

Good practice of animal husbandry benefits farmers by following ways:

- Yields in good quality cattle
- Better quality of milk production
- Use in agriculture for carting, irrigation and tilling

7. What are the benefits of cattle farming?

Solution:

Benefits of cattle farming are:

- Cattles are used in agricultural purpose
- Generation of good quality cattle
- Milking and meat purpose
- Skin of cattle is used for leather and wool industry

8. For increasing production, what is common in poultry, fisheries and bee-keeping?
Solution:

For increasing the production, cross breeding techniques are used adopted in poultry, fisheries and bee-keeping. Along with these technique regular and proper maintenance methods are useful in improving the production.

9. How do you differentiate between capture fishing, mariculture and aquaculture?
Solution:

Capture fishing: It is a technique in which fishes are captured from various sources of natural resources like sea, rives, lake and pond.

Mariculture: culturing of fish in marine fishes like prawns, oyster, bhetki and mullets in marine water for commercial use.

Aquaculture: Involves in culturing of fish in both marine and fresh water.