
CLASS IX : SCIENCE

Chapter 12 : Improvement In Food Resources

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

Ans. We get carbohydrates from cereals, proteins from pulses. fruits and vegetables provide vitamins and minerals in addition to small amount of proteins, carbohydrates & fats.

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

Ans. A variety of biotic factors such as pests, nematodes, diseases, etc. can reduce the net crop production. A pest causes damage to agriculture by feeding on crops. For example, boll weevil is a pest on cotton. It attacks the cotton crop, thereby reducing its yield. Weeds also reduce crop productivity by competing with the main crop for nutrients, light, and space. Similarly, abiotic factors such as salinity, temperature, etc. affect the net crop production. Some natural calamities such as droughts and floods are unpredictable. Their occurrence has a great impact on crops sometimes, destroying the entire crop.

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

Ans. (a) Tallness and profuse branching are desirable characters for fodder crops.
(b) Dwarfness is desired in cereals, so that less nutrients are consumed by plant body.

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

Ans. Macro-nutrients are Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur. They are required in large quantities to plants and are therefore called macro-nutrients.

Q2. How do plants get nutrients?

Ans. Nutrients found in the soil get dissolved in the water from rain and irrigation. This water is absorbed by the roots of plants and transported to different parts of the plants.

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

Ans. Manures increase soil fertility by enriching the soil with organic matter and nutrients as it is prepared by the decomposition of animal excreta and plant wastes. On the other hand, fertilizers are mostly inorganic compounds whose excessive use is harmful to the symbiotic micro-organisms living in soil. Their excessive use also reduces soil fertility. Hence, fertilizers are considered good for only short term use.

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Q1. 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.

Ans. (c), The use of good quality seeds increases the total crop production. If a farmer is using good quality seeds, then a majority of the seeds will germinate properly, and will grow into a healthy plant. Proper irrigation methods improve the water availability to crops. Fertilizers ensure healthy growth and development in plants by providing the essential nutrients such as nitrogen, phosphorus, potassium, etc.

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

Ans. Preventive measures and biological control methods should be preferred for protecting crops because excessive use of chemicals leads to environmental problems. These chemicals are also poisonous for plants and animals. Preventive measures include proper soil and seed preparation, timely sowing of seeds, intercropping and mixed cropping, usage of resistant varieties of crops, etc.

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

Ans. During the storage of grains, various biotic factors such as insects, rodents, mites, fungi, bacteria, etc. and various abiotic factors such as inappropriate moisture, temperature, lack of sunlight, flood, etc. are responsible for losses of grains. These factors act on stored grains and result in degradation, poor germinability, discoloration, etc.

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

Ans. Cross breeding indigenous breeds with exotic breeds. Foreign or exotic breeds have higher milk yield and longer lactation period as compared to indigenous breeds. Therefore, indigenous breeds should be cross-bred with exotic breeds. The local breeds are hardy and resistant to several diseases.

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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."

Ans. India is basically agriculture society where a lot of wastes are produced during food processing, e.g., fish meal, meat meal, rice bran, etc. They are profitably used in forming poultry feed. In return poultry provides us with egg and meat rich in animal protein.

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

Ans. (i) Proper shelter, its hygiene, aeration and lighting.
(ii) Proper feed and feed additives. Drinking water.
(iii) Health care including vaccination.

Q2. What are the differences between broilers and layers and in their management ?

Ans. Broilers are fast growing young chicken of 6–10 weeks age which are known for the good quality and taste of their meat. Layers are sexually mature hens which are raised for egg laying. Broilers are given diet rich in protein, with adequate fat, vitamins A and K. They are provided with best of space, hygiene and temperature. Layers are given inferior quality feed. Light is required for good egg laying. Temperature variations may occur to some degree.

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Q1. How are fishes obtained ?

Ans. There are two methods of obtaining fish, capture fishery (capturing fish) from natural waters and culture fishery in impounded waters. In both cases the fish are caught with the help of nets.

Q2. What are the advantages of composite fish culture ?

Ans. (i) There is no competition for food or space amongst different types of fish.
(ii) Food available in different part of the pond are utilized due to their different food habits and different habitats.
(iii) The fish yield is high as some six types of fish are growing simultaneously.

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

Ans. (i) Gentleness in nature
(ii) Good honey collection
(iii) Prolific queen
(iv) Less swarming
(v) Ability to protect itself from enemies.

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

Ans. Pasturage is flora or crop available to honey bee for collection of nectar and pollen. Pollen is food for honey bees. Nectar is transformed into honey. The amount and quality of honey depend upon type and extent of pasturage.

EXERCISES

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

Ans. Inter cropping is a method of crop production which ensures high yield. Inter cropping is a practice of growing two or more crops simultaneously in the same field in rows.

- (i) In inter cropping definite row patterns like 1 : 1, 1 : 2, or 1 : 3 are followed 1 : 1 row pattern means that there is one row of main crop with one row of intercrop.
- (ii) In inter cropping, there is a greater utilisation of the interspaced area, light, nutrients, water and air. As a result, productivity per unit area is increased.

Q2. Why are manures and fertilisers used in fields ?

Ans. The manures and fertilisers are the main sources of nutrient supply to crops. They are used to ensure good vegetative growth (leaves, branches and flowers), giving rise to healthy plants, which results in high crop production.

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

Ans. Using Inter-cropping as a method of crop production ensures the following advantages :-

1. Productivity is increased
2. It economises space and time of cultivating two or more crops.
3. It helps to maintain soil fertility.

While crop rotation confers following benefits :

1. By growing crops in rotation, the fertility of the soil is utilised more evenly. The soil is not depleted in a particular nutrient.
2. By using crop rotation as a method of crop production, the yields of produce obtained are greater than when the same crops are grown year after year.
3. The incidence of weeds, pests and disease is reduced.

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

Ans. A process in which genes of desirable characters are taken from a plant and transferred to another plant which lacks these genes, leading to the production of varieties with desirable agronomic characteristics like dwarfness in cereals, and tallness and profuse branching in case of fodder crops.

Genetic manipulation is useful in developing varieties with:-

- (i) Higher yield
- (ii) Good quality
- (iii) Biotic and abiotic resistance
- (iv) Shortening of the maturity duration
- (v) Wider adaptability and
- (vi) Desirable agronomic characteristics

Q5. How do storage grain losses occur ?

Ans. Factors which are responsible for losses of grains during storage are both biotic and abiotic. Biotic factors responsible for such losses are - insects, rodents, fungi, mites and bacteria and abiotic factors are inappropriate moisture and temperature in place of storage.

Q6. How do good animal husbandry practices benefit farmers ?

Ans. Good animal husbandry practices benefit farmers by providing:-

1. High milk-yielding breeds of cows and buffaloes.
2. Dual purpose breeds i.e., cows for milk and bullocks for draught work.
3. Disease resistant varieties of animals.

Q7. What are the benefits of cattle farming ?

Ans. Through cattle farming we can get :-

1. High milk-yielding animals.
2. Animals which produce good quality of meat, fibre and skin
3. Good breed of draught animals

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

Ans. Most common method of increasing production is developing improved varieties through cross breeding, which is a method of producing an organism with all the desired traits including high production, disease resistance, etc. Management practices include : breeding, feeding, shelter and heeding.

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

Ans. Capture fishery is the process of obtaining fish from natural resources i.e. river, pond, etc. Mariculture is the culture of marine fish while, aquaculture is cultivation of aquatic organisms in fresh water.