

## Chapter 15 Improvement in Food Resources

**Question 1. What do we get from cereals, pulses, fruits and vegetables?**

**Answer:** Cereals give carbohydrates which provide energy.

Pulses give proteins which build our body.

Vegetables and fruits provide vitamins and minerals.

**Question 1. How do biotic and abiotic factors affect crop production?**

**Answer:** Factors responsible for loss of grains, during storage and production are:

(a) Biotic factors like rodents, pests, insects, etc.

(b) Abiotic factors like temperature, humidity, moisture, etc.

Combination of both biotic and abiotic factors causes :

1. infestation of insects
2. weight loss
3. poor germination ability
4. degradation in quality
5. discolouration
6. poor market price

**Question 2. What are the desirable agronomic characteristics for crop improvements?**

**Answer:** Desirable agronomic characteristics for crop improvements are:

(a) Tallness and profuse branching are desirable characters for fodder crops.

(b) Dwarfness is desired in cereals, so that less nutrients are consumed by these crops.

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**Question 1. What are macro-nutrients and why are they called macro-nutrients?**

**Answer:** Macro-nutrients are the essential elements which are utilised by plants in large quantities. Many macro-nutrients are required by the plants for the following functions:

- As the constituent of protoplasm
- N, P, S are present in proteins
- Ca is present in cell wall
- Mg is important constituent of chlorophyll

**Question 2. How do plants get nutrients?**

**Answer:** Plants get nutrients from air, water and soil. There are, sixteen nutrients essential for the growth of plants. Carbon and Oxygen are supplied by water. The remaining thirteen nutrients are supplied by soil.

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

**Answer:** Effects of using manures on soil quality:

1. The manures enrich the soil with nutrients.

2. They provide a lot of organic matter (humus) to the soil and thus restores water retention capacity of sandy soils and drainage in clayey soil.
3. The addition of manures reduces soil erosion.
4. They provide food for soil organisms, like soil friendly bacteria.

#### **Effects of using fertilizers on soil quality:**

1. By the continuous use of fertilizers, the soil becomes powdery, dry and rate of soil erosion increases.
2. By the use of fertilizers, the organic matter decreases which further decreases the porosity of soil and the plant roots do not get oxygen properly,
3. The nature of soil changes to acidic or basic.

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**Question 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.

**Answer:** In this, (c) Farmers use quality seeds, adopt irrigation, use fertilizer and use crop protection measures.

Use of any quality seeds is not sufficient until they are properly irrigated, enriched with fertilizers and protected from biotic factors. Hence, option (c) will give the most benefits.

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

**Answer.** Diseases in plants are caused by pathogens. To get rid of pathogens, some preventive measures and biological control methods are used as they are simple, economic and minimise pollution without affecting the soil quality.

**Question 2. What factors may be responsible for losses of grains during storage?**

**Answer:** The factors responsible for losses of grains during storage are:

- Abiotic factors like moisture (present in food grains), humidity (of air) and temperature.
- Biotic factors like insects, rodents, birds, mites, bacteria and fungi.

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**Question 1. Which method is commonly used for improving cattle breeds and why ?**

**Answer:** Cross breeding is a process in which indigenous varieties of cattle are crossed by exotic breeds to get a breed which is high yielding. During cross breeding, the desired characters are taken into consideration. The offspring should be high yielding, should have early maturity and should be resistant to climatic conditions.

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**Question 1. 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:** The basic aim of poultry farming is to raise domestic fowl for egg production and chicken meat. These poultry birds are not only the efficient converters of agricultural by-products, particularly cheaper fibrous wastes (which is unfit for human consumption but can be formulated into cheaper diets for poultry birds) into high quality meat and also help in providing egg, feathers 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”.

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**Question 1. What management practices are common in dairy and poultry farming?**

**Answer:**

1. **Shelter:** Dairy animals and poultry birds require proper shelter, i.e., well designed dairy and hygienic shelter.
2. **Feeding:** To get good yield of food product, proper feed is provided to dairy animals and poultry birds.
3. **Caring for animal health:** Animal and birds must be protected from diseases caused by virus, bacteria or fungi.

**Question 2. What are the differences between broilers and layers and in their management?**

**Answer:** The poultry bird groomed for obtaining meat is called broiler. The egg laying poultry bird is called layer.

The housing, nutritional and environmental requirements of broilers are somewhat different from those of egg layers.

The ration (daily food requirement) for broilers is protein rich with adequate fat. The level of vitamins A and K is kept high in the poultry feeds while layers require enough space and proper lightning.

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**Question 1. How are fish obtained?**

**Answer:** There are two ways of obtaining fish. One is from natural resources, which is called capture fishing. The other way is by fish farming, which is called culture fishery.

**Question 2. What are the advantages of composite fish culture?**

**Answer:** In composite fish culture, a combination of five or six fish species is used in a single fish pond. These species are selected so that they do not compete for food among them and are having different types of food habits. As a result, the food available in all the parts of the pond is used. For example, Catlas are surface feeders, Rohus feed in the middle-zone of the pond, Mrigals and Common Carps are bottom feeders and Grass Carps feed on the weeds, together these species can use all the food in the pond without competing with each other. This increases the fish yield from pond.

**Question 1. What are the desirable characters of bee varieties suitable for honey production?**

**Answer:**

1. The variety of bee should be able to collect a large amount of honey.
2. The bees should stay in a given beehive for a longer period.
3. The bees should have capacity of breeding well.
4. The variety of bee should be disease resistant.

**Question 2. What is pasturage and how is it related to honey production?**

**Answer:** The pasturage means the flowers available to the bees for nectar and pollen collection. In addition to adequate quantities of pasturage, the kind of flowers available will determine the taste of the honey.

### Questions From Textbook

**Question 1. Explain any one method of crop production which ensures high yield.**

**Answer:** One method used for crop production which ensures high yield is plant breeding. It is the science involved in improving the varieties of crops by breeding plants. The plants from different areas/places is picked up with desired traits and then hybridisation or cross-breeding of these varieties is done to obtain a plant/crop of desired characteristic. The high yielding crop variety shows the following characteristics: High yield, early maturation, less water for irrigation, better quality seeds are produced, less fertilizers required, adapts itself to the environmental conditions.

**Question 2. Why are manure and fertilizers used in fields?**

**Answer:** They are used to ensure good vegetative growth (leaves, branches and flowers), giving rise to healthy plants, that results in high crop production.

**Question 3. What are the advantages of inter-cropping and crop rotation?**

**Answer: Advantages of using inter-cropping:**

1. It helps to maintain soil fertility.
2. It increases productivity per unit area.
3. Save labour and time.
4. Both crops can be easily harvested and processed separately.

**Advantages of using crop rotation:**

1. It improves the soil fertility.
2. It avoids depletion of a particular nutrient from soil.
3. It minimise pest infestation and diseases.
4. It helps in weed control.
5. It prevents change in the chemical nature of the soil.

**Question 4. What is genetic manipulation? How is it useful in agricultural practices?**

**Answer:** Genetic manipulation is a process of incorporating desirable (genes) characters into crop varieties by hybridisation. Hybridisation involves crossing between genetically dissimilar plants. This is done for production of varieties with desirable characteristics like profuse branching in fodder crops, high yielding varieties in maize, wheat, etc.

Genetic manipulation is useful in developing varieties which shows:

- Increased yield
- Better quality
- Shorter and early maturity period
- Better adaptability to adverse environmental conditions
- Desirable characteristics

**Question 5. How do storage grain losses occur?**

**Answer:** The factors responsible for loss of grains during storage are:

1. Abiotic factors like moisture (present in foodgrains), humidity (of air) and temperature.
2. Biotic factors like insects, rodents, birds, mites and bacteria.

**Question 6. How do good animal husbandry practices benefit farmers?**

**Answer:** Good animal husbandry practices are beneficial to the farmers in the following ways:

1. Improvement of breeds of the domesticated animals.
2. Increasing the yield of foodstuffs such as milk, eggs and meat.
3. Proper management of domestic animals in terms of shelter, feeding, care and protection against diseases.

Which ultimately helps the farmers to improve their economic condition.

**Question 7. What are the benefits of cattle farming?**

**Answer:** Cattle farming is beneficial in the following ways:

1. Milk production is increased by high yielding animals.
2. Good quality of meat, fibre and skin can be obtained.
3. Good breed of draught animals can be obtained.

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

**Answer:** Through cross breeding, the production of poultry, fisheries and bee-keeping can be increased.

**Question 9. How do you differentiate between capture fishing, mariculture, and aquaculture?**

**Answer:**

**Capture fishing:** It is the fishing in which fishes are captured from natural resources like pond, sea water and estuaries.

**Mariculture:** It is the culture of fish in marine water. Varieties like prawns, oysters, bhetki and mullets are cultured for fishing.

**Aquaculture:** It is done both in fresh water and in marine water.