



NCERT Solutions for 9th Class Science : Chapter 15 Improvement in Food Resources



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Class 9: Science Chapter 15 solutions. Complete Class 9 Science Chapter 15 Notes.

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

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Answer

→ Cereals provide us with carbohydrates. Also, they are a rich source of energy.

→ Pulses give us proteins.

→ Fruits and vegetables are a rich source of vitamins and minerals. A small amount of proteins, carbohydrates, and fats are also present in them.

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

Biotic factors such as pests, insects and diseases reduce the crop production. A pest causes damage to our crops by feeding. Weeds also reduce crop productivity by competing with the main crop for nutrients and light.

Similarly, abiotic factors such as temperature, wind, rain etc. affect the net crop production. For example droughts and floods have a great impact on crops sometimes, destroying the entire crop.

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

The desirable agronomic characteristics for crop improvements are:

→ Tallness and profuse branching in any fodder crop.

→ Dwarfness in cereals.

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

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Macro-nutrients are those nutrients which are required in large quantities for growth and development of plants. Since they are required in large quantities, they are known as macro-nutrient. The six macro-nutrients required by plants are nitrogen, phosphorus, potassium, calcium, magnesium, and sulphur.

2. How do plants get nutrients?

Answer

Plants get nutrients from air, water, and soil. Soil is the major source of nutrients. Thirteen of these nutrients are available from soil. The remaining three nutrients (carbon, oxygen, and hydrogen) are obtained from air and water.

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

Answer

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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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

(c) Farmers using good quality seeds, adopting irrigation, using fertilizers, and using crop protection measures will derive most benefits.

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→ 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.

→ Crop protection measures include various methods to control weeds, pests, and infectious agents. If all these necessary measures are taken by a farmer, then the overall production of crops will increase.

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1. 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 excessive use of chemicals leads to environmental problems. Biological methods cause harm neither to crop nor to the environment.

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

Answer

Factors causing loss of grains during storage:

→ Biotic Factors: Insects, rodents, fungi and bacteria etc.

→ Abiotic Factors: Moisture Content and Temperature etc.

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

Answer

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Cross Breeding is commonly used for improving cattle breeds. Cross breeding between two good varieties of cattle will produce a new improved variety. For example, the cross between foreign breeds such as Jersey Brown, Swiss and Indian breeds such as Red Sindhi, Sahiwal produces a new variety having qualities of both breeds.

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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

Poultry in India is the most efficient converter of low fibre food stuff into highly nutritious animal protein food. In poultry farming, domestic fowls are raised to produce eggs and chicken. For this, the fowls are given animal feeds in the form of roughage, which mainly consists of fibres. Thus, by feeding animals a fibre rich diet, the poultry gives highly nutritious food in the form of eggs and chicken.

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

Answer

Common management practices in dairy and poultry farming are:

- Proper shelter facilities and their regular cleaning.
- Some basic hygienic conditions such as clean water, nutritious food, etc.
- Animals are kept in spacious, airy, and ventilated place.
- Prevention and cure of diseases at the right time is ensured.

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

Answer

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Layers are meant for egg production, whereas broilers are meant for poultry meat. Nutritional, environmental, and housing conditions required by broilers are different from those required by egg layers. A broiler chicken, for their proper growth, requires vitamin rich supplements especially vitamin A and K. Also, their diet includes protein rich food and enough fat. They also require extra care and maintenance to increase their survival rate in comparison to egg layers.

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1. How are fish obtained?

Answer

Fish can be obtained by two ways:

- Capture fishing: It is the process of obtaining fish from natural resources.
- Culture fishery: It is the practice of farming fishes. Farming can be done in both freshwater ecosystem (which includes river water, pond water) and marine ecosystem.

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

Answer

Bee varieties having the following desirable characters are suitable for honey production:

- They should yield high quantity of honey.
- They should not sting much.
- They should stay in the beehive for long durations.
- They should breed very well.

1. What are the advantages of composite fish culture?

Answer

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The advantages of composite fish culture are: → Fish can be grown in crop fields especially paddy.

→ Intensive Fish farming is possible because plenty of water is available during crop seasons.

→ In this system both local and imported fish species can be cultivated.

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

Answer

Pasturage is the availability of flowers from which bees collect nectar and pollen. It is related to the production of honey as it determines the taste and quantity of honey.

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Exercise

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

Answer

Inter cropping is a method of crop production which ensures high yield. It is a practice of growing two or more crops simultaneously. in the same field in rows. In inter cropping definite row patterns are followed such as one row of main crop of is followed by two row of intercrop.

In inter cropping there is greater utilisation of the interspaced area, light, nutrients, water and air. As a result productivity per unit area increased.

2. Why are manures and fertilizers used in fields?

Answer

Manures and fertilizers are used in fields to enrich the soil with the required nutrients. Manure helps in enriching the soil with organic matter and nutrients. This improves the fertility and structure of the soil. On the other hand, fertilizers ensure a healthy growth and development in plants. They are a good source of nitrogen, phosphorus, and

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potassium. To get an optimum yield, it is instructed to use a balanced combination of manures and fertilizers in the soil.

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

Answer

Inter-cropping and crop rotation both are used to get maximum benefit on limited land. Inter-cropping helps in preventing pests and diseases to spread throughout the field. It also increases soil fertility, whereas crop rotation prevents soil depletion, increases soil fertility, and reduces soil erosion. Both these methods reduce the need for fertilizers. It also helps in controlling weeds and controls the growth of pathogens and pests in crops.

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

Answer

Genetic manipulation is a process where the gene for a particular character is introduced inside the chromosome of a cell. When the gene for a particular character is introduced in a plant cell, a transgenic plant is produced. These transgenic plants exhibit characters governed by the newly introduced gene.

Genetic manipulation is useful in developing varieties with Higher yield, Good Quality, Biotic and Abiotic resistance, short maturity period, wider adaptability and desirable agronomic characteristics

5. How do storage grain losses occur?

Answer

There are various biotic and abiotic factors that act on stored grains and result in degradation, poor germinability, discolouration, etc.

Biotic factors include insects or pests that cause direct damage by feeding on seeds. They also deteriorate and contaminate the grain, making it unfit for further consumption.

Abiotic factors such as temperature, light, moisture, etc., also affect the seed. They decrease the germinating ability of the seeds and make them unfit for future use by

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farmers. Unpredictable occurrence of natural calamities such as droughts and floods also causes destruction of crops.

6. How do good animal husbandry practices benefit farmers?

Answer

Cattle farming is one of the methods of animal husbandry that is most beneficial for farmers. Using this method, better breeds of draught animals can be produced. Such draught animals are engaged in agricultural fields for labour work such as carting, irrigation, tilling, etc.

7. What are the benefits of cattle farming?

Answer

Benefits of cattle farming:

- Good quality and quantity of milk can be produced.
- Draught labour animals can be produced for agricultural work.
- New variety that are resistant to diseases can be produced by crossing two varieties with the desired traits.

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

Answer

The common factor for increasing production in poultry, fisheries, and bee keeping is the proper management techniques that are to be followed. Regular cleaning of farms is of utmost importance. Maintenance of temperature and prevention and cure of diseases is also required to increase the number of animals.

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

Answer

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- Capture fishing the method of obtaining fishes from natural resources
- Mariculture is the culture of marine fishes for commercial use.
- Aquaculture involves the production of aquatic animals that are of high economic value such as prawns, lobsters, fishes, crabs, etc.

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