NCERT solutions for class 9 science chapter 15 Improvement in Food Resources

Topic 15.1 Improvement in crop yields

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

Answer:

Cereals give carbohydrates which provide energy. **Eg : wheat, rice**

Pulses give proteins which build our body. **Eg: gram, pea**

Vegetables and fruits provide vitamins, fibres, and minerals.

CBSE NCERT solutions for class 9 science chapter 15

Topic 15.1.1 Crop Variety Improvement

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

Answer:

Crop production can go down due to:

Biotic factors such as insects, nematodes, and diseases reduce crop production. Insects feed on the crop thus destroying it.

Abiotic factors are natural factors like temperature, salinity, waterlogging which also reduces crop production. Different crops require a different range of temperature, hence, the wrong temperature can cause thee crop production to go down.

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

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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. This way they consume fewer nutrients.

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Topic 15.1.2 Crop production management

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

Answer:

The essential elements which are required by the plants in large quantities are called macro-nutrients. The macronutrients are nitrogen, phosphorus, potassium, calcium, magnesium, and sulfur.

Note: Remember NPK : nitrogen, phosphorous and potassium.

Q2. How do plants get nutrients?

Answer:

Plants get their nutrients from air, water, and soil. Plants require sixteen essential elements for their growth and development.

Air	Carbon, oxygen

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Water	Hydrogen, oxygen
Soil	Nitrogen, phosphorus, potassium (NPK) Iron, manganese, chlorine

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Topic 15.1.2 Fertilizers

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

Answer:

Manure is prepared by the decomposition of animal excreta and plant waste.

(i) The manures enrich the soil with nutrients like nitrogen and phosphorous.

(ii) The organic matter in manure helps in improving the soil structure.

Fertilizers are commercially produced plant nutrients. Fertilizers should be used in proper dose and time.

(i) Fertilizers supply nitrogen, phosphorus, and potassium to the soil.

(ii) Fertilizers do not replenish the organic matter in the soil and hence continuous use of fertilizers in an area can destroy soil fertility.

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Topic 15.1.2 Cropping Patterns

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.

Answer:

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

This condition will give the most benefit.

Using quality seeds alone cannot give good results until they are protected, properly irrigated and enriched with fertilizers.

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Topic 15.1.3 Crop Protection Management

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

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Answer:

Preventive measures and biological control methods are used as they are simple, not expensive, environmentally safe and do not affect the soil quality.

These methods are also harmless to other forms of life. The main purpose is to protect the crop from disease-causing pathogens and weeds.

Some preventive measures are proper seedbed preparation, timely sowing of crops, intercropping and crop rotation.

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

Answer:

Factors responsible for losses of grains during storage are:

1. Biotic factors such as insects, rodents, and bacteria

2. Abiotic factors such as moisture and temperatures in the place of storage.

These affect the quality, causes a loss in weight, discoloration of produce, thereby making the grains unfit for the market.

NCERT textbook solutions for class 9 science chapter 15 Improvement in Food Resources

Topic 15.2.1 Cattle Farming

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

Answer:

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Crossbreeding is commonly used for improving cattle breeds. It is done between indigenous and exotic breeds for variety improvement.

The desired characteristics from both the breed are taken to produce a new improved variety. An exotic breed such as Jersey has long lactation periods, while local breeds such as Red Sindhi are very resistant to diseases.

The two are cross-bred to get calf with both the desired qualities.

NCERT solutions for class 9 science chapter 15 Improvement in Food Resources

Topic 15.2.2 Poultry Farming

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

Answer:

Poultry farming is done to raise domestic fowl for egg production and chicken meat. These birds consume food that is unfit for human consumption.

But in return, they give us eggs and high-quality meat which provides human nutritious animal protein.

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Topic 15.2.2 Poultry Farming

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

Answer:

The management practices that are common in dairy and poultry farming are:

Shelter: Proper housing facilities having hygienic conditions are given to the dairy and poultry animals.

Feeding: Proper and nutritious feed is provided to dairy animals and poultry birds to get a good yield of products.

Health care: Proper prevention and protection from diseases and pests are given to the animals.

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

Answer:

Broilers are farmed for obtaining meat whereas layers are farmed for eggs.

The housing, nutritional and environmental requirements of broilers and layers are different. The daily food requirement for broilers is rich in protein with adequate fat.

The level of vitamins A and K is kept high in the poultry feeds. On the other hand, layers require enough space and lightning.

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Topic 15.2.3 Inland Fishers

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Q1. How are the fish obtained?

Answer:

Fish is a cheap source of animal protein for our food.

Fish can be obtained in two ways :

I) From natural resources like rivers and ponds, which is called capture fishing. T

II) By fish farming in artificial freshwater ecosystems, which is called culture fishery.

Q2. What are the advantages of composite fish culture?

Answer:

Composite fish culture is an intensive fish farming technique in which both local and imported fish species are used. A combination of five or six fish species having different types of food habits is used in a single fishpond such that they do not compete for food among them.

As a result, the food available in all the parts of the pond is used which increases the fish yield from the pond.

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Topic 15.2.4 Bee Keeping

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

Answer:

The desirable character of bee varieties suitable for honey production are:

(I)The bees should produce a large amount of honey and wax.

(II) The bees should stay for a longer period in a beehive.

(III) The bees should breed well.

(IV) The bees should stingless.

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

Answer:

Pasturage refers to the flowers available to the bees for nectar and pollen collection.

It determines the quality of honey. Moreover, the kind of flowers determines the taste of the honey.

NCERT solutions for class 9 science chapter 15 Improvement in Food Resources: Solved Exercise Questions

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

Answer:

One method used for crop production which ensures high yield is:

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Hybridization: Crops from different areas are picked up with desired traits and then cross-bred. The crop with the desired characteristic is obtained. Also, a gene might be introduced that would provide the desired characteristic. This results in genetically modified crops

Or

Crop rotation: It is the method of growing two or more varieties of crops on the same land in sequential seasons. This method ensures the stability in the soil profile across the field and helps in the replenishment of soil nutrient levels.

Or

Inter-cropping: It is the method of growing two or more varieties of crops having different nutrient requirements on the same land in a fixed pattern.

The factors for which variety improvement is done are: Higher yield, early maturation, less water for irrigation, better quality seeds are produced, fewer fertilizers required, adapts itself to the environmental conditions.

Q2. Why are manure and fertilizers used in fields?

Answer:

Manure and fertilizers are added to the soil to increase the fertility of the soil by replenishing essential nutrients.

They ensure good vegetative growth giving rise to healthy plants, which results in higher crop production.

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

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Answer:

Inter-cropping is the growing of two or more crops simultaneously on the same field in a definite pattern. The crops are selected such that their nutrient requirements are different ensuring maximum utilization of the nutrients supplied. This method prevents pests and diseases from one plant to spread to other plants in a field. Thus both the crops give higher productivity.

Crop rotation is the growing of different crops on a piece of land in a pre-determined succession. The next crop to be cultivated depends on the availability of moisture and irrigation facilities. Its advantage is that two or three crops can be grown in a year with good harvests.

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

Answer:

Genetic manipulation is a process of introducing a gene that would provide the desired characteristic resulting in genetically modified crops.

Genetic manipulation is useful in agricultural practices by developing varieties having higher yield, better quality, shorter maturity period and wider adaptability to adverse environmental conditions.

Q5. How do storage grain losses occur?

Answer:

Grain after being cultivated from the field are stored in warehouses.

Storage gain losses can occur due to:

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1. Biotic factors such as insects, rodents, and bacteria feed on the grains making it unfit for human consumption.

2. Abiotic factors such as moisture and temperatures in the place of storage.

These affect the quality, causes a loss in weight, discoloration of produce, thereby making the grains unfit for the market.

Q6. How do good animal husbandry practices benefit farmers?

Answer:

Animal husbandry is the scientific management of feeding, breeding and disease control of animal livestock.

Good animal husbandry practices benefit farmers by:

(I) Increasing the yield of animal products such as milk, eggs, meat, etc.

(II) Proper health care keeps the animals healthy which otherwise takes lots of time and money to nurse diseased animals.

Therefore, good animal husbandry practices increase the production of animal products which increases the profit of farmers.

Q7. What are the benefits of cattle farming?

Answer:

The benefits of cattle farming are:

(I) It increases both the quality and quantity of milk.

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(II) Good breed of draught animals are produces

(III) Disease-free cattle can be produced by mix-breeding.

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

Answer:

For increasing production in poultry, fisheries, and bee-keeping, the following things are common:

1. Maintaining temperature and hygienic environmental conditions

2. Prevention and protection from diseases and pests.

3. Giving proper and nutritious food

4. Avoid overcrowding of animals in their shelter.

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

Answer:

Capture fishing- Fishes are captured from natural resources like rivers, ponds, and oceans.

Mariculture: Fish farming or culture fishing in marine waters is called mariculture. Varieties like tuna and prawns are cultivated in this method.

Aquaculture: Fish culture done in brackish water where seawater and freshwater mix together is known as aquaculture.

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