



SCIENCE CLASS IX

CHAPTER-15 IMPROVEMENT IN FOOD

RESOURCES

Q.1. Give some examples of popular marine fish varieties.

Ans. Pomphret, Macherel, Tuna, Sardines and Bombay duck.

Q.2. Choose the odd one

Mullets, Bhetki, Prawns, Pearl spots

Ans. Prawns is the odd one (except prawns all the other are finned fishes, while prawns are shellfish).

Q.3. Give two advantages of apiculture.

Ans. Two advantages of apiculture include

- (i) It produces honey and wax.
- (ii) It is a low investment additional income generating activity.

Q.4. Why fish culture is done with a combination of rice?

Ans. Fish culture is done with a combination of rice, so that fish are grown in the water in the paddy field.

Q.5. State one importance of photoperiod in agriculture.

Ans. Photoperiod is important for the growth of crops as photosynthesis occurs in the presence of light.

Q.6. What type of food is required by dairy animals?



Ans. Dairy animals require two types of feed

- (i) Roughage – Largely fibrous
- (ii) Concentrates – Low in fibre and contain relatively high levels of protein and other nutrients.

Q.7. Students were asked to select a source of starch amongst the following.

Rice, Wheat, Sunflower, Seeds, Potato, Tuber?

Ans. Sunflower seeds.

Q.8. Write an example of inter cropping?

Ans. Soyabean + maize is an example of inter cropping, Both these crops differ in their nutrient requirement ensuring maximum utilisation of nutrients from field.

Q.9. State the reason of introducing Italian bee variety in bee farms.

Ans. Italian bees have high honey collection capacity.

Q.10. Give one example each of local variety and foreign variety of bee.

Ans. Local variety Apis cerana.

Foreign variety Apis mellifera.

Q.11. Irrigation in Indian is very important. Explain.

Ans. Most agriculture in India is dependent on rain, sometimes there is not sufficient rainfall in an area and poor monsoons cause crop failure. Irrigation facilities in such area can ensure that crops are getting water at right time of growth.

Q.12. Name a plant, which is used as biopesticides in organic farming?



Ans. Neem leaves are used as biopesticides because they have capacity to keep pesticides away from crops.

Q.13. Milk production in cattles is mainly dependent upon which factor?

Ans. Lactation period is the period of milk production after the birth of a calf.

Q.14. Where do the external parasites live?

Ans. External parasites live and on skin and causes skin disease in cattles.

Q.15. Which is the main criteria of giving vaccination to cattles?

Ans. Vaccination are given against viral and bacteria disease to accurate memory cells of immune system, so that pathogens can be easily identified and killed by immune system.

Q.16. A student accidentally spilled a few drops of a solution X over the shirt. The area became blue-black because of the solution X. name this solution X.

Ans. The solution X is iodine which reacted with the starched part of shirt.

Q.17. For testing starch is wheat grains, a student would

(i) Test a few grains

(ii) Place in a test tube

(iii) Crush the grains

(iv) Pour iodine solution

(v) Pour water

Arrange the events in proper order.

Ans. The events in proper order is

(i → (iii) → (ii) → (v) → (iv)



Q.18. Name the organism used in preparation of vermicomposting.

Ans. Earthworm hasten the process of decomposition of plant animal reuse.

Q.19. White leghorn is a an exotic breed of which animal?

Ans. It is popular exotic breed of hen produces long white eggs and less amount of feed is required to it.

Q.20. Define the term hybridisation and photoperiod.

Ans. Hybridisation It refers to crossing between genetically dissimilar organisms.

Photoperiod It is the response of an organism to changes in day length.

Q.21. Which exotic variety of bee used in apiaries to produce more honey?

Ans. Italian bee sting less, breed well and stay in beehive for long period of time.

Q.22. White revolution is related to production of which material?

Ans. White revolution is increasing milk production by proper management of dairy animals.

Q.23. Marine fish stocks are depleting day-by-day. Name the practice, which helps in meeting the increasing demand.

Ans. Marine culture include various methods to increase the quantity of marine fishes.

Q.24. What is an Italian bee?

Ans. Apis mellifera is an Italian bee commonly used for commercial honey production.

Q.25. List two desirable traits for fodder crops.

Ans. (i) Tall plants (ii) Profuse branching.



Q.26. A boy was rushing with a bottle of tincture iodine. Some iodine solution splashed on his yellow coloured, cotton shirt and also on the white table cloth. The stain on the table cloth was yellowish brown while that on his shirt was blue-black. The most obvious scientific reason for this?

Ans. The reason is that shirt was starched after washing but the table cloth was not.

Q.27. The steps for conducting starch test on given sample of potato are given. They are not in proper order

(i) Take crushed potato in a test tube

(ii) Add a few drops of iodine

(iii) Add water to the test tube

(iv) Boil the contents and filter.

Write the steps in order.

Ans. (i) → (iii) → (iv) → (ii)

Q.28. Name the adulterant of arhar (tuar) dal.

Ans. Metanil yellow

Q.29. Govind wanted to test the adulteration of tuvar (arhar) dal. He washed a few grains of dal with water which turned yellow. He then added a few drops of HCl. The yellow water turned pink/magenta in colour. What does this show?

Ans. This showed that the dal was adulterated with metanil yellow.

Q.30. Why wetting of arhar/tuar dal with water makes the latter yellow?



Ans. Wetting of arhar/tuvar dal with water makes the latter yellow because dal contains metanil yellow as adulterant.

Q.31. Why metanil yellow is added to arhar dal?

Ans. Metanil yellow is added to arhar dal for providing plain yellow colour to it.

Q.32. What is metanil yellow?

Ans. Metanil yellow is synthetic dye which causes paralysis in human body.

Q.33. How can insect pests on crop plants and stored grains be controlled?

Ans. Insect pests on crop plants and stored grains can be controlled by spraying pesticides and fumigants.

Q.34. What effects are cast upon the stored grains by biotic and abiotic factors?

Ans. Biotic and abiotic factors cause degradation in quality, loss in weight, poor germinability, discolouration of produce.

Q.35. What do you mean by vermicompost?

Ans. Vermicompost is a kind of manure prepared by using earthworm to hasten the process of decomposition of plants and animal refuse.

Q.36. Write about the fresh initiatives in the field of irrigation?

Ans. Fresh initiatives in irrigation include

Rainwater harvesting Conserving rainwater for multipurpose like washing, gradening or irrigation.

Watershed development It involves building check dams, which lead to an increase in groundwater levels.

Q.37. Write about crop rotation under the following heading



(i) Defination

(ii) Types of crops chosen

Ans.(i) Defination Crop rotation is the growing of different crops on a piece of land in pre-planned secession.

(ii) Types of crops chosen The crops chosen depend upon some factors like availability of moisture and irrigation facilities.

Q.38. Weeds are unwanted plants in the cultivated field. Give some methods to eradicate them.

Ans. Some methods to remove weeds are

- (i) Mechanical removal Uprooting weeding, hand hoeing, ploughing, etc.
- (ii) Preventive methods Proper seed bed preparation.
 - (a) Timely sowing of crops
 - (b) Intercropping
 - (c) Crop rotation.

Q.39. Good management practices give good production of poultry birds. Enlist some management practices in poultry farming.

Ans.(i) Management of temperature and hygienic condition in housing and poultry feed.

(ii) Prevention and control of diseases.

Q.40. Why using pesticides not considered good?

Ans. Using pesticides in excessive amount creates problems because



- (i) They are poisonous for some plants and animals.
- (ii) They cause environmental pollution.

Q.41. Name two internal parasites that effect animals.

Ans. Two internal parasites are

- (i) Worms They affect the stomach and intestine.
- (ii) Flukes They damage the liver.

Q.42. Why bee-keeping should be done in good pasturage?

Ans. Pasturage is the flora found around the apiary for nectar and pollen collection. Bee-keeping should be done in good pasturage because

- (i) The value or quality of honey depend upon the pasturage available to the bees.
- (ii) The taste of the honey depends upon the kind of flowers available.

Q.43. Where can you do inland fisheries?

Ans. Inland fisheries are done in the following water resources

- (i) **Freshwater resources** Canals, ponds, reservoirs and rivers.
- (ii) **Brackish water resources** These are the resources, where freshwater and sea water mix together, e.g., estuaries and lagoons.

Q.44. What is intercropping? Give one example and advantage of intercropping.



Ans. Intercropping is a method of growing two or more crops simultaneously on the same field in a specific pattern, e.g., Soyabean + Maize.

Advantage of g intercropping

- (i) Intercropping ensures maximum utilization of the nutrients in soil or supplied.
- (ii) It also prevents pests and diseases from spreading to all the plants belonging to one crop in a field.

Q.45. A farmer grows guar prior to sowing of crop seeds. Explain the reason behing this.

Ans. This farmer is using green manure for maintaining the nutrients and fertility of the field. In this method, gaur are grown prior to the showing of crop seeds and then mulched by ploughing them into the soil.

The green plants thus turn into green manure, which helps in enriching the soil in nitrogen and phosphorus.

Q.46. What are concentrate in animal feed?

Ans. These are substances which are rich in proteins and other nutrients and contain less amount of fibre, e.g., gram and bajra.

Q.47. Give any two difference between macronutrients and micronutrients.

Ans. Differences between macronutrients and micronutrient

Macronutrient	Micronutrient
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They are utilised by plant in large quantities.	They are utilised by plant in small quantities.
These are six microessential nutrients nitrogen, phosphorus, potassium, magnesium, sulphur and calcium.	There are seven micro essential nutrients, Iron, Maganese, boron,zinc, copper, molybdenum and chlorine.

Q.49. Write the modes by which insects affect the crop yield.

Ans. Insects affect the crop in three ways

- (i) They cut the root, stem and leaves.
- (ii) They suck the cell sap.
- (iii) They bore into stem and root.

Q.50. State the role of hybridisation in crop improvement.

Ans. In hybridisation two crops of desired character are selected and crossed to obtain new crop having desired characters of parental crop. This method improves crop yield, disease resistance and pest resistance.

Q.51. What is mixed cropping? How does it help to a farmer?

Ans. Mixed cropping is growing two or more crops simultaneously on same piece of land, e.g., wheat + gram, groundnut + mustard. This reduces risk of total crop failure and help the farmer to raise his livelihood.

Q.52. State the factors responsible for spoilage of stored food grains.



Ans. The two main factors are

- (i) **Biotic factors**, e.g., insect pest, birds, etc.
- (ii) **Abiotic factors**, e.g., moisture, temperature in place of storage.

Q.53. Describe the underlying principle of vaccination.

Ans. The principle of vaccination is based on the property of 'Memory' of immune system. In this preparation, inactivated pathogen are introduced into the body. The antibodies produced in body against these antigens would neutralise the next time in body. The immune system respond with great vigour and eliminate infection more quickly.

Q.54. State the food requirement of dairy animals.

Ans. Food requirements of dairy animals is of two types

- (i) Maintenance requirement, which is the food required to support the animal to live healthy life.
- (ii) Milk producing requirement, food is also required during lactation period.

Q.55. Explain why legume crop does not require nitrogenous fertilisers?

Ans. Nitrogen fixing bacteria, e.g., Rhizobium is present on the roots of leguminous plant. Therefore, they does not require nitrogenous fertiliser.

Q.56. State two advantages of fertilisers over manures.



Ans. (i) A fertiliser is nutrient specific. It can specially provide nutrients such as N, P, K to soil according to need.

(ii) It is easy to transport and apply to crop.

Q.57. What are the advantages of fish farming?

Ans. (i) Fishes are good source of protein.

(ii) It increases the source of income of a farmer to raise their living standard.

Q.58. What is poultry farming? How it helps in solving food and nutrition problem?

Ans. Poultry farming is the method to rear domestic fowl for production of egg and meat.

It aims to improving poultry breeds by providing egg and meat. It helps in solving food and nutrition problems.

Q.59. Name the two types of fish that come under fish production.

Ans. The two types of fish are

- (i) True finned fishes, i.e., fishes that have fins like carps, catla, mrigal, etc.
- (ii) Shellfishes like prawns, mollusks, echinoderms, etc.

Q.60. Which factors should be taken into consideration for fish culture?

Ans. The three important factors to be considered for fish culture are

- (i) Topography, i.e., location of pond.
- (ii) Water resources and their quality.



- (iii) Soil quality.

Q.61. Why is organic matter important for crop production?

Ans. Organic matter is important for crops because

- (i) It forms humus and makes the soil fertile.
- (ii) It improves the soil structure and aeration of clayey soil.
- (iii) It increases the water-holding capacity of sandy soil.
- (iv) It helps in drainage.
- (v) It liberates minerals and improves growth of crop plants.

Q.62. Why is excess use of fertilizers detrimental to the environment?

Ans. The excess use of fertilisers leads to water pollution. It destroys the soil-fertility and harms the microorganisms present in the soil.

Q.63. Define

(i) Vermicompost

(ii) Green manure

(iii) Biofertilisers

Ans. (i) Vermicompost is a manure rich in pulverised organic matter and nutrients. The compost prepared by using earthworms to hasten the process of decomposition of plants and animal refuse.

(ii) Green manure is prepared by decomposing green plants in the field itself. It helps in enriching the soil in nitrogen and phosphorus.

Example Sunhemp is grown in fields, mulched by ploughing and allowed to decompose in field for the preparation of gree manure.

(iii) **Biofertiliser** are living organism used as fertiliser to supply the nutrients to crop plants. Example Nitrogen fixing blue green algae, nitrogen fixing bacteria which fix nitrogen in soil, rich fields, are called as biofertiliser.

Q.64. State there preventive and control measures taken for storage of agriculture produce.

Ans. The preventive and control measures are

- (i) Strict cleaning of the product before storage, so that microorganisms and other harmful particles are cleared off.
- (ii) Proper drying of the product should be done in sunlight and shade.
- (iii) Fumigation should be done using chemicals that can kill pests.

Q.65. Give an example of exotic and indigenous breeds of the following

(i) Poultry

(ii) Milk cattle

(iii) Bees

Ans.

Animals	Exotic Breed	Indigenous Breed
(i) Poultry	White leghorn	Aseel
(ii) Milk cattle	Jersey	Red sindhi



(iii) Bees	Apis mellifera	Apis cerana indica
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Q.66. Write a short note on marine fisheries.

Ans. India's marine fish area include 7500 km long coastline and deep sea beyond it. Marine fish are caught using many kinds of fishing nets from fishing boats. The yields are increased by locating large schools of fish, where large quantities of fishes can be found.

Popular marine fish varieties are pomphret, mackerel, tuna, sardines and Bombay duck.

Large schools are located by using satellites and echo sounders.

Q.67. Differentiate between

(i) Inland fishery and marine fishery

(ii) Apiculture and aquaculture

Ans. Differences between Inland and Marine Fishery

Inland Fishery	Marine Fishery
It consists of fishing in freshwater and brackish water.	It consists of fishing in sea water along the coastline of deep sea beyond it.
Most of the fish production is through aquaculture.	Most of the fish production is through a practice called mariculture.

(ii) Difference between Apiculture and Aquaculture



Apiculture	Aquaculture
It is the rearing and maintenance of honeybees for obtaining honey, wax and other substances.	It is the rearing, care and maintenance of fishes for fish production.

Q.68. Explain the factors that are to be considered before deciding the nature of feed for cattle.

Ans. Feed for cattle

Following factors should be considered

- (i) Food requirements of dairy animals are of two types
 - (a) **Maintenance requirement** Food required to support the animal to live a healthy life.
 - (b) **Milk producing requirement** Food is required during lactation period.
- (ii) Animal feed includes
 - (a) **Roughage** Largely fibrous
 - (b) **Concentrates** High levels of proteins and other nutrients.
- (iii) The food requirement of cattle are different for every age and type of work they do.
- (iv) Cattles need a balanced ration with all the nutrients in proportionate amount.



- (v) Along with the ration some feed additives can be given to add micronutrients to the health and the milk output of dairy animals.

Q.69. The food that we eat is decreasing both in quantity and in quality. What steps can be employed to improve this condition, when the population is increasing drastically?

Ans. The following steps can be taken to improve the condition of food for present as well as future

- (i) By selecting good variety of crop having desirable agronomic traits. Such varieties can be developed using hybridisation technique.
- (ii) The field should be kept fertile and nutrient rich. The field should be managed properly.
- (iii) By using high yielding variety seeds for high yield per acre.
- (iv) By using a beneficial cropping pattern either mixed cropping or crop rotation.
- (v) By improving the irrigation facilities and bringing more and more agricultural land under irrigation.

Q.70. Differentiate between intercropping and mixed cropping.

Ans. Differences between Intercropping and Mixed Cropping

Intercropping	Mixed Cropping
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It's main aim is to increase productivity per unit.	It's main aim is to reduce chances of crop failure.
The crops are grown in specific patterns of rows.	There is no set pattern of rows of crops.
Pesticides can be sprayed easily as per individual crops.	Pesticides cannot be sprayed easily to individual plants.
Harvesting and threshing of crops can be done separately and easily.	Harvesting and threshing of individual crops cannot be done so easily.

Q.71. Cross breeding programme is successfully done in poultry farming. Enlist some desirable traits for, which cross breeding is done in poultry birds.

Ans. The desirable traits include

- (i) **Number and quality of chicks** The cross bred variety should produce good quality chicks in large quantity.
- (ii) Draw broiler parent for commercial chick production.
- (iii) **Summer adaptation capacity** The variety should be adaptable to survive in high temperature and different climatic conditions.
- (iv) **Low maintenance requirement** It should be there, that will decrease the investment charges.



- (v) Reduction in the size of the egg laying bird with ability to utilise more fibrous cheaper diets formulated using agricultural by products.

Q.72.(i) Name the month during which kharif crop is grown.

(ii) List any four factors for which crop variety improvement is done.

Ans. (i) Kharif crop is grown during the month from June to October.

(ii) Four factors for which crop variety improvement is done are

- (a) **Higher yield** To increase productivity of crop per acre.
- (b) **Improved quality** The definition of quality is different for different crops, e.g., baking quality is improvement in wheat, protein quality in pulses etc.
- (c) **Biotic and abiotic resistance** Production of crops slows down due to biotic and abiotic stresses under different situations. Varieties resistance to these stresses can improve crop production.
- (d) **Change in maturity duration** Short duration of sowing make the crop more economical because they allow farmers to grow multiple rounds of crop in a year. Shorter duration of crop, the more benefit it is.

Q.73. Why has improving crop yields become more important these days?

List the major group of activities for improving crop yields. Which one of these activity is more important and why?

Ans. Due to continuously growing population, requirement of food is also increasing every year to feed this population. Extra farming land is not



available in country to increase production. Therefore, it is necessary to increase crop yield to meet growing demands for food.

The major activities for improving crop yields are

- (i) Crop variety improvement
- (ii) Crop production improvement
- (iii) Crop protection management

Out of these three activities crop variety improvement is very important because it helps to attain good yield of crop.

Q.74. What is manure? State two advantages of using manure. How is green manure differ from ordinary manure?

Ans. Manures is an organic substance obtained through the decomposition of plant wastes like straw and animal wastes like cow dung. The decomposition is brought about by microbes.

Advantages of using manure

- (i) It enriches soil with nutrients without any pollution.
- (ii) It improves soil texture and increases water. Holding capacity by adding organic matter to soil.

Green manure is obtained by growing green plants which are then mulched by ploughing while or din.

Q.75. Give some advantages of mixed cropping.

- Ans.** (i) Chances of pest infestation is greatly reduced.
- (ii) By growing two or more crops simultaneously soil fertility improved.
- (iii) The risk of total crop failure due to uncertain monsoon is reduced.
- (iv) Farmers harvest variety of produced to meet the various requirement of family or an agricultural farm.

Q.76. Why is animal husbandry essential?

Ans. Animal husbandry is essential because of the following reasons

- (i) To increase milk production. It also increases the production of various milk products like butter and cheese.
- (ii) To increase egg and meat production which are highly nutritious.
- (iii) To increase fish production.
- (iv) For the proper utilisation of animal wastes.

Q.77. Differentiate between the following.

(i) Capture fishery and Culture fishery.

(ii) Bee keeping and Poultry farming.

Ans. (i) Differences between Captute and Culture Fishery

Capture Fishery	Culture Fishery
It is a way of obtaining fish from natural resources.	It is a way of obtaining fish from fish farming.
There is no seeding and raising of	The fish is reared.



fish	
It is undertaken in both inland and marine waters.	It is undertaken mostly inland and near sea shore.

(ii) Difference between Bee Keeping and poultry Farming

Bee keeping	Poultry Farming
It is a practice of rearing and a management of honey bee.	It is the practice of raising domestic fowl.
Bees obtain food (necter) from flower.	Poultry birds are provided food by the rearers.
It provides honey and wax.	It provides eggs and meat (flesh).

Q.78. What are the main elements of animal husbandry?

Ans. The main elements of animal husbandry are

- (i) Proper feeding of animals.
- (ii) Providing freshwater to animals.
- (iii) Providing safe and hygienic shelter to animals.
- (iv) Ensuring proper health of animals and protection against diseases.
- (v) Proper breeding of animals.



Q.79. What different factors are to considered before deciding the nature of feed for cattle and poultry birds?

Ans. The food requirements of animals are different according to age, health, nature of work and during lactation period.

The food given to poultry bird in its initial stage of growth is small and uniform and rich in essential nutrients like carbohydrates, proteins and minerals. The food for larger poultry farm contains mashed cereals like bajra, wheat, maize and rice. Similarly, a calf need more food and nutrition than old cow. The milk yield of cattle is largely determined by kind of feed given to it.

Q.80. What is honey? What does the quality of honey depends upon?

Ans. Honey is a dense sweet liquid contain 20-40% sugar, small amount of minerals and vitamins. Apart from that, it also contain certain enzyme and pollen. It also has medical value specially in disorder related to digestion and liver. The quality of honey depends upon pasturage or flowers available to the bees for nectar and pollen collection. In addition to adequate quantity of pasturage, the kind of flowers available also determine the taste of honey.