

Chapter - 15 Improvement in Food Resources

Multiple Choice Questions

Q1. Which one is an oil yielding plant among the following?

- (a) Lentil**
- (b) Sunflower**
- (c) Cauliflower**
- (d) Hibiscus**

Answer: Option b) Sunflower

Sunflower is an oil yielding plant and seeds are used to extract oil.

Q2. Which one is not a source of carbohydrate?

- (a) Rice**
- (b) Millets**
- (c) Sorghum**
- (d) Gram**

Answer: Option d) Gram

Rice, millets and sorghum are cereals have carbohydrates and gram is a pulse have protein.

Q3. Find out the wrong statement from the following.

- (a) White revolution is meant for increase in milk production.**
- (b) Blue revolution is meant for increase in fish production.**
- (c) Increasing food production without compromising with environmental quality is called as sustainable agriculture.**
- (d) None of the above**

Answer: Option d) None of the above

White revolution and blue revolution are modern techniques and strategies are used to increase the production of milk and fish respectively. Sustainable agriculture is agricultural improvement that do not affect environment.

Q4. To solve the food problem of the country, which among the following is necessary?

- (a) Increased production and storage of food grains**
- (b) Easy access of people to the food grain**
- (c) People should have money to purchase the grains**
- (d) All of the above**

Answer: Option d) All of the above

For growing population, more food is produced. Scientists have various methods for food production like green revolution for food grains, blue revolution for fishes, white revolution for milk and yellow revolution for oil to make self-reliant. Now golden revolution is included in the production of pulses.

Q5. Find out the correct sentence.

- (i) Hybridization means crossing between genetically dissimilar plants.**
 - (ii) Cross between two varieties is called as interspecific hybridization.**
 - (iii) Introducing genes of desired character into a plant gives genetically modified crop.**
 - (iv) Cross between plants of two species is called as inter varietal hybridization.**
- (a) (i) and (iii)**
 - (b) (ii) and (iv)**
 - (c) (ii) and (iii)**
 - (d) (iii) and (iv)**

Answer: Option a)

- (i) Hybridization means crossing between genetically dissimilar plants.**

(iii) **Introducing genes of desired character into a plant gives genetically modified crop.**

The crossing of two genetically dissimilar plants to a hybrid with good characters is called hybridization. It is inter varietal with different varieties, intergeneric with different genera, inter-specific with different species of the same genus. Genetically modified crops have genes of desired characters

Q6. Weeds affect the crop plants by

- (a) killing of plants in field before they grow**
- (b) dominating the plants to grow**
- (c) competing for various resources of crops (plants) causing low availability of nutrients**
- (d) all of the above.**

Answer: Option d) all of the above.

A plant species growing naturally in the cultivated field is weed which damage crop plants and devoid them for space, water, light and nutrients.

Q7. Which one of the following species of honey bee is an Italian species?

- a) *Apis dorsata***
- b) *Apis florae***
- c) *Apis cerana indica***
- d) *Apis mellifera***

Answer: Option d) *Apis mellifera*

Q8. Find out the correct sentence about manure.

- (i) Manure contains large quantities of organic matter and small quantities of nutrients.**
 - (ii) It increases the water holding capacity of sandy soil.**
 - (iii) It helps in draining out of excess of water from clayey soil.**
 - (iv) Its excessive use pollutes environment because it is made of animal excretory waste.**
- (a) (i) and (iii)**

(b) (i) and (ii)

(c) (ii) and (iii)

(d) (iii) and (iv)

Answer: Option b)

(i) Manure contains large quantities of organic matter and small quantities of nutrients.

(ii) It increases the water holding capacity of sandy soil.

Manures are the natural fertilizers prepared by the decomposition of animal excreta and plant waste and organic matter with nutrients for examples: farmyard manure (FYM), compost, vermicompost, etc. which enrich the soil. Manures add humus to soil, which repairs soil texture for holding of water and aeration of soil and increases water holding capacity in sandy soils and drainage in clayey soil and avoid water – logging in clayey soils and protects environment from synthetic chemicals.

Q9. Cattle husbandry is done for the following purposes

(i) Milk Production

(ii) Agricultural work

(iii) Meat production

(iv) Egg production

(a) (i), (ii) and (iii)

(b) (ii), (iii) and (iv)

(c) (iii) and (iv)

(d) (i) and (iv)

Answer: Option a)

(i) Milk Production

(ii) Agricultural work

(iii) Meat production

The branch of agriculture which help in the feeding, caring and, breeding of domestic animals is called animal husbandry. People rear cattle for milk, meat, leather and transportation.

Q10. Which of the following are Indian cattle?

- (i) Bos indicus**
- (ii) Bos domestica**
- (iii) Bos bubalis**
- (iv) Bos vulgaris**
- (a) (i) and (iii)**
- (b) (i) and (ii)**
- (c) (ii) and (iii)**
- (d) (iii) and (iv)**

Answer: Option a)

- (i) Bos indicus**
- (iii) Bos bubalis**

Generic name of cow is *Bos indicus* in the drier regions like Gujarat and Rajasthan. Buffalo is called Indian water buffalo with generic name *Bos bubalis*.

Q11. Which of the following are exotic breeds?

- (i) Brawn**
- (ii) Jersey**
- (iii) Brown Swiss**
- (iv) Jersey Swiss**
- (a) (i) and (iii)**
- (b) (ii) and (iii)**
- (c) (i) and (iv)**
- (d) (ii) and (iv)**

Answer: Option b)

(ii) Jersey

(iii) Brown Swiss

Exotic breeds are imported from abroad and reared in India for examples: jersey, Holstein-Friesian, Brown Swiss

Q12. Poultry farming is undertaken to raise following

(i) Egg production

(ii) Feather production

(iii) Chicken meat

(iv) Milk production

(a) (i) and (iii)

(b) (i) and (ii)

(c) (ii) and (iii)

(d) (iii) and (iv)

Answer: Option b)

(i) Egg production

(ii) Feather production

Poultry industry help in production of chicken, turkey, duck, geese, guinea-fowl for meat and eggs. Eggs and meat give us a balanced diet and animal protein.

Q13. Poultry fowl are susceptible to the following pathogens

(a) Viruses

(b) Bacteria

(c) Fungi

(d) All of the above

Answer: Option d) All of the above

Poultry fowl diseases are caused by viruses (Ranikhet, Fowl pox), bacteria (tuberculosis, cholera), fungi (Aspergillosis) and parasites (worms, mites) etc.

Q14. Which one of the following fishes is a surface feeder?

- (a) Rohus
- (b) Mrigals
- (c) Common carps
- (d) Catlas

Answer: Option d) Catlas

Rohu or Labeo rohita column feeder. Mrigal or Cirrhinus mrigala, common carp or Cyprinus carpio bottom feeders. Catla or Catla surface feeder.

Q15. Animal husbandry is the scientific management of

- (i) animal breeding
 - (ii) culture of animals
 - (iii) animal livestock
 - (iv) rearing of animals
- (a) (i), (ii) and (iii)
 - (b) (ii), (iii) and (iv)
 - (c) (i), (ii) and (iv)
 - (d) (i), (iii) and (iv)

Answer: Option d)

- (i) animal breeding
- (iii) animal livestock
- (iv) rearing of animals

Animal husbandry is the farming of animal livestock like animal's shelter, feeding, breeding, health and disease control.

Q16. Which one of the following nutrients is not available in fertilizers?

- (a) Nitrogen
- (b) Phosphorus
- (c) Iron
- (d) Potassium

Answer: Option c) Iron

A chemical fertilizer containing plant nutrients which provide nitrogen, phosphorus and potassium to the plants.

Q17. Preventive and control measures adopted for the storage of grains include

- (a) strict cleaning
- (b) proper disjoining
- (c) fumigation
- (d) all of the above

Answer: Option d) All of the above

Biotic and abiotic factors cause destruction of grains during storage is prevented by:

- (a) **Cleaning of the produce before storage:** The grains and agricultural product is cleaned and dried in sun.
- (b) **Safe and proper storage:** Godown, ware houses and stores are cleaned, dried and repaired with proper aeration.
- (c) **Fumigation:** Chemical pesticides are used as fumigants to kill insect, pests and other harmful pathogens.

Short Answer Type Questions

Q18. Match the column A with the column B.

Column A	Column B.
Catla	Bottom feeder
Rohu	Surface feeder
Mrigal	Middle –zone feeder
Fish Farming	Culture fishery

Answer: The correct matching is:

Column A	Column B.
Catla	Surface feeder
Rohu	Middle-zone feeder
Mrigal	Bottom feeder
Fish Farming	Culture fishery

Q19. Fill in the blanks.

- (a) Pigeon pea is a good source of _____.
- (b) Berseem is an important _____ crop.
- (c) The crops which are grown in rainy season are called _____ crops.
- (d) _____ are rich in vitamins.
- (e) _____ crop grows in winter season.

Answer:

- (a) protein
- (b) fodder
- (c) kharif
- (d) Vegetables
- (d) Rabi

Q20. What is a GM crop? Name any one such crop which is grown in India.

Answer:

Genetically Modified (GM) crops are developed by a new gene from other source, for example: Cotton is insect-resistant by introducing gene from the bacteria.

Q21. List out some useful traits in improved crop.

Answer:

Useful qualities in improved crops are:

- a) **High yield:** crop improvement improves the productivity of economic produce, e.g., grain, vegetables and fodder.
- b) **Biotic and abiotic resistance:** crop suffers due to biotic factors like diseases, insect, pest and abiotic factors like drought, salinity, water logging, heat, cold and frost. For example, MUW 318 is a variety of wheat which is resistant to rusts.
- c) **Photo and thermo – insensitivity:** plants are sensitive to abiotic factors like light and temperature. Development of photo-insensitive and thermo-insensitive crop improve cultivation
- d) **Wide adaptability:** Developing the crop for adaptability to stabilize the crop production under environmental conditions. For examples, ICPH8 is a hybrid pigeon pea plant.

Q22. Why is organic matter important for crop production?

Answer:

Organic matter increase food production which is used as manures. It enriches the soil nutrients, check deficiency of nutrients, water content and aeration and increases the water holding capacity in sandy soils, drainage in clayey soil, avoids water logging in clayey soils and provides food for decomposers, such as bacteria, fungi, etc. Thus, manures control the physical properties of soil, soil erosion, moisture holding capacity of soil and nutrient carriers.

Q23. Why is excess use of fertilizers detrimental for environment?

Answer:

Excessive use of fertilizers has harmful effects like:

a) **Fertilizers change soil content:** fertilizers degrade quality of soil and disturbs ecosystem by making the soil either alkaline or acidic.

b) **Fertilizers cause water pollution:** chemicals mix with soil during irrigation and rainfall and pollute rivers, lakes, streams. So, they increase the growth of algae called algal bloom which deoxygenates the water and make it unfit for aquatic animals.

Q24. Give one word for the following.

(a) Farming without the use of chemicals as fertilizers, herbicides and pesticides is known as _____.

(b) Growing of wheat and groundnut on the same field is called as _____.

(c) Planting soyabean and maize in alternate rows in the same field is called as _____.

(d) Growing different crops on a piece of land in pre-planned succession is known as _____.

(e) Xanthium and Parthenium are commonly known as _____.

(f) Causal organism of any disease is called as _____.

Answer:

(a) organic farming

(b) mixed cropping

(c) intercropping

(d) crop rotation

(e) weeds

(f) pathogen

Q25. Match the following A and B.

	Column A	Column B
1.	Cattle used for tilling and carting	Milk producing female
2.	Indian breed of chicken	Broiler
3.	Sahiwal, Red Sindhi	Drought animals
4.	Milch	Local breed of cattle
5.	Chicken better fed for obtaining	Aseel

	meat	
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Answer:

	Column A	Column B
1.	Cattle used for tilling and carting	Drought animals
2.	Indian breed of chicken	Aseel
3.	Sahiwal, Red Sindhi	Local breed of cattle
4.	Milch	Milk producing female
5.	Chicken better fed for obtaining meat	Broiler

Q26. If there is low rainfall in a village throughout the year, what measures will you suggest to the farmers for better cropping?

Answer:

- a) Poor rainfall affects yield of rain fed crops. Various irrigation systems help to supply water from sprinkler, drip and surface irrigation to reduce the water wastage.
- b) Drought resistant and early mature crops have less water requirement.
- c) Soil has humus content to increase the water holding capacity.

Q27. Group the following and tabulate them as energy yielding, protein yielding, oil yielding and fodder crop.

Wheat, rice, berseem, maize, gram, oats, pigeon gram, sudan grass, lentil, soyabean, groundnut, castor and mustard.

Answer:

The crops can be grouped into the following categories:

Energy-yielding:

- (a) Wheat
- (b) Rice
- (c) Maize

Protein yielding:

- (a) Gram
- (b) Pigeon gram

(c) Lentil

(d) Soybean

Oil-yielding:

(a) Groundnut

(b) Castor Mustard

(c) Soybean

Fodder crops:

(a) Sudan grass

(b) Berseem

(c) Oat

Q28. Define the term hybridization and photoperiod.

Answer:

Hybridization is a crossing of genetically different plants to produce a new hybrid which provide the desired features of both parents in one variety. The crossing is inter-varietal, intergeneric or interspecific.

Photoperiod is Period of illumination for a flower or plant. Flowering plants is classified as Day neutral, Long day or Short-day plants on the basis of photoperiod.

Q29. Fill in the blanks.

(a) Photoperiod affect the _____.

(b) Kharif crops are cultivated from _____ to _____.

(c) Rabi crops are cultivated from _____ to _____.

(d) Paddy, maize, green gram and black gram are _____ crops.

(e) Wheat, gram, pea, mustard are _____ crops.

Answer:

- (a) flowering of plants
- (b) June, October
- (c) November, April
- (d) Kharif
- (e) Rabi

Q30. Cultivation practices and crop yield are related to environmental condition. Explain.

Answer:

Cultivation practices and yield require climatic conditions, temperature and photoperiod, for growth and life cycle. On the basis of seasonal variations, crops are divided into three groups:

Rabi crop: a winter season crop from November to April.

Kharif crop: a rainy season crop from June to October.

Zaid crop: a summer season crop from April to June.

Q31. Fill in the blanks.

- (a) A total of _____ nutrients are essential to plants.
- (b) _____ and _____ are supplied by air to plants.
- (c) _____ is supplied by water to plants.
- (d) Soil supplies _____ nutrients to plants.
- (e) _____ nutrients are required in large quantity and called as.
- (f) _____ nutrients are needed in small quantity for plants and are called _____.

Answer:

- (a) 16
- (b) Carbon, oxygen
- (c) Hydrogen.
- (d) 13

- (e) Six, macronutrients
- (f) Seven, micronutrient

Q32. Differentiate between compost and vermi- compost?

Answer:

Compost is prepared from farm and town waste like vegetable, animal and human waste, weeds, straw, rice husks, forest litter, etc. by a biological process with aerobic and anaerobic microorganisms and decompose in 3 to 6 months.

Vermicompost is decomposition of organic waste by earthworms in 1-2 months

Q33. Arrange these statements in correct sequence of preparation of green manure.

- (a) Green plants are decomposed in soil.
- (b) Green plants are cultivated for preparing manure or crop plant parts are used.
- (c) Plants are ploughed and mixed into the soil.
- (d) After decomposition it becomes green manure.

Answer:

- (b) Green plants are cultivated for prepare manure.
- (c) Plants are ploughed and mixed in soil.
- (a) Green plants are decomposed in soil.
- (d) After decomposition it change to green manure

Q34. An Italian bee variety *A. mellifera* has been introduced in India for honey production. Write about its merits over other varieties.

Answer:

Italian variety of honey bee, *Apis mellifera* is used for the production of honey due to gentleness, good honey collection capacity, productive queen with less swarming and ability to protect from enemies.

Q35. In agricultural practices, higher input gives higher yield. Discuss how?

Answer:

Higher inputs in agriculture give higher yield like sowing seeds of improved variety, use of better manures and fertilizer, pesticides, weedicides, threshing and harvesting of crops i.e., the higher money inputs to increase the yield. Financial condition of farmers helps to take farming practices and technologies and to adopt cropping system and production practices.

Long Answer Type Questions

Q36. Discuss the role of hybridization in crop improvement.

Answer:

The crossing of genetically different plants to produce a hybrid is called hybridization. Crossing is between two different varieties (inter-varietal), two different species (interspecific) and different genera (intergeneric).

Cross-breeding of plants give an improved variety with characteristics of parent crop plants. For example, improved variety of crop plants give high yield and are disease resistant.

Selection and hybridization are required in breeding to grow in diverse types of soil and climatic conditions by poor to progressive farmers with climatic factors, input application, disease and pest resistance, quality, adaptability and high- yielding, resistant to diseases and pests, better quality and early to late maturing time

Q37. Define:

(i) Vermicompost

(ii) Green manure

(iii) Bio-fertilizer

Answer:

(i) Vermicompost

Vermicompost is a manure with organic matter and nutrients from organic wastes of plant and animal with earthworms which help in soil aeration, crush and mix soil particles.

The earthworms are farmer's friend or Nature's ploughman. Example of earthworm: *Dichogaster bolani*.

ii) Green manure

Green manure is prepared in the field to enrich the soil in nitrogen and phosphorous. Green leguminous and non-leguminous plants are protected by ploughing and then decompose by natural decomposers such as bacteria and fungi. Example of green manure are — sun hemp, sweet clover, cow-pea, berseem, cluster bean etc.

(iii) Bio-fertilizers

Organisms which increase soil fertility are called bio-fertilizers used for pulses, legumes, oil seeds and rice which are renewable and non-pollutant. They act as a supplement of nitrogen to specific crops.

Two bio-fertilizers, *Rhizobium* and blue green algae (*Nostoc* and *Anabaena*) are used in cultivating pulses, legumes, oil seeds and wet-land rice.

Some of the bio-fertilizers are:

- (d) Legume (*Rhizobium* symbiosis).
- (e) *Azolla* (*Anabaena* symbiosis).
- (f) Free-living bacteria (*Azotobacter*) in soil.
- (g) Cyanobacteria (*Anabaena*, *Nostoc*).
- (h) Mycorrhiza (symbiotic fungi in roots of higher plants).

Q38. Discuss various methods for weed control.

Answer:

An unwanted plant growing spontaneously at a habitat is called a weed which damage crop plants, by competing for space, water, light and nutrients. For example: *Parthenium* (gajar ghas), *Xanthium* (gokhroo), *Cyprus rotundus* (motha) etc. The loss by weeds in India is 27% of field crop production. So, there is eradication of weeds from crop fields during the early stage. Some methods of weed control are:

a) Hand pulling: weed plants are pulled by hand.

b) Tillage: is mechanical over turning of soil to remove weeds and reduce their seeds in the soil.

- c) Mowing: to prevents seed production of weed growth.
- d) Flooding: Flooding of fields after harvesting is used for controlling perennial weeds.
- e) Cropping and competition method: Weeds are controlled by proper seed bed preparation, timely sowing of crops, intercropping, crop rotation, summer ploughing, adopting effective methods of irrigation and application of fertilizers.
- f) Use of chemical herbicides: A variety of chemical compounds is synthesized, tested for herbicidal activity.

Q39. Differentiate between the following:

(i) Capture fishery and Culture fishery

(ii) Mixed cropping and Inter cropping

(iii) Bee keeping and Poultry farming

Answer: (i)

	Capture fishery	Culture fishery
1.	Method to obtain fish from natural resources is capture fishery.	Method to obtain fish from fish farms is culture fishery
2.	No seeding or rearing of fish.	Fish is reared in fish farms
3.	carried in both inland and marine water resources.	carried in inland water resources and near seashore

	Mixed cropping	Inter cropping
1.	It is growing one or more crop simultaneously on same land in an irregular manner.	When two or more crops grow on the same field in a set pattern.
2.	It reduces the chances of failure of a crop.	Its increase the productivity.
3.	Harvesting and threshing of individual crops is not easy.	Harvesting and threshing of individual crops is easy and at different times.

	Bee keeping	Poultry farming
1.	Rearing bees for production of honey and wax is apiculture or bee keeping.	Rearing domestic fowl's production of egg and meat is poultry farming.
2.	Honey bees used are Apis cerana indica, A. dorsata and A. florae	poultry birds are chicken, turkeys, ducks, geese, guinea-fowls and pigeons

Q40 Give the merits and demerits of fish culture

Answer:

Culture fishery is a kind of business and research to culture, feed, breed and produce fishes in marine and fresh water. The advantage of fish culture is to decrease dependence on natural sources of fish.

Advantages of culture fishery are:

1. **Fish as food:** fishes are cultivated for food examples are rohu, mrigal, catla etc.
2. **Fish for controlling diseases:** fish are reared to control diseases like malaria, yellow fever etc. The larvivores fishes like Gambusia eat larvae of mosquito and prevent disease.
3. **Economic value:** oysters are also reared in culture fishery which are cultivated for pearls.
4. **Source of income:** The fishing industry is a source of income to the farmers called Blue Revolution.
5. **Fishes are also reared** for fish oil, manure, glue, leather etc so it is advantageous, economical and profitable. Economical and valued fishes are grown called fish monoculture which cause extinction of rare and economically less important fishes. Exotic species also cause extinction of local fish species.

Q41. What do you understand by composite fish culture?

Answer:

Culturing a group of five or six species of fish in a single fish pond is called composite fish culture. Selection of various species of fish for culturing in a pond increase yield with same cost and utilize the available food in the water reservoir.

Fishes are of following characteristics.

1. The selected species are fast growing. For example, rohu, catla and mrigal and exotic crabs like silver carp, grass carp and common carp are good for culturing as they give 8-9 times more yield.
2. The fishes selected do not compete for space and nutrition and live-in zones inside the pond. For example, catla and silver carp live in surface zone, rohu and grass carp in middle zone and mrigal and common carp at the bottom.

3. The feeding habits of species are distinct. For example, silver carp feed on phytoplankton's, catla on zooplanktons, rohu and mrigal on decaying plants and detritus, grass carp on aquatic plants and weeds. So, they grow together.

Composite fish farming is advantageous, economical and profitable.

Q42. Why bee keeping should be done in good pasturage?

Answer:

Bee keeping called apiculture is an important initiative of agriculture and is commercial production of honey and wax.

Honey bees' feeds on flowers for nectar and converts into honey. Pasturage is land area with flowering plants for collection of nectar and pollen. Bee farms or apiaries are in desirable locations with flowering plants or flora in 1 to 2 kms radius for nectar and pollen collection.

Q43. Write the modes by which insects affect the crop yield.

Answer:

Insects affect the crop yields in useful as well as harmful ways. Harmful insects attack the plants called insect pests. Insect pests are:

1.**Chewing insects:** they cut the roots, stem and leaves with the help of chewing mouth parts. E.g., grasshoppers, caterpillars, locusts etc.

2.**Sucking insects:** They puncture the plant parts and suck the cell sap with their needle like hollow beaks. E.g., leaf hoppers, aphids, bugs, etc.

3.**Internal feeders:** They bore into stem and fruits and live inside the plant parts and harm the crop yield. E.g., weevils, borers, etc.

Use of chemical pesticides, natural insecticides like neem, nicotine etc. and biological methods control the pest infestation.

Useful insects help in pollination and help in fruit formation and feed on harmful insect pests. E.g., lady bird beetle on aphids.

Q44. Discuss why pesticides are used in very accurate concentration and in very appropriate manner?

Answer:

The chemicals used to eradicate pests are called pesticides like insecticides for killing insects, weedicides for killing weeds, rodenticides for killing rats, fungicides for killing fungi etc which are used in accurate concentration and in appropriate manner, as excessive and regular use of these chemicals is hazardous, contaminates food and water, affects the quality of produce and the health of consumers. These pesticides is used in definite concentration as they are harmful to the environment also. They are non-bio-degradable, enter the food chain and go on accumulating in the trophic level called biomagnification. They may be poisonous to both plants and animal. The overflow from fields carries pesticides into the water bodies affecting the aquatic animals and causing death.

Q45. Name two types of animal feed and write their functions.

Answer:

The food of dairy animals is called feed which get adequate, palatable, laxative, appetizing and balanced ration with greens, nutrient and large quantity of water required for milk production.

Two types of normal feed are:

Roughage: This cattle feed contains fibres from hay, straw of cereals or Bhusa, green fodder like cow pea, berseem etc. and silage.

Concentrates: These are mixtures of substances with less fibres and large amount of protein, fat, carbohydrates, vitamins, minerals etc. A balanced ration of all nutrients and sufficient water is required by dairy animals along with various additives like micronutrients, antibiotics etc. are given to increase their milk production.

Q46. What would happen if poultry birds are larger in size and have no summer adaptation capacity? In order to get small sized poultry birds, having summer adaptability, what method will be employed?

Answer:

Difficulties faced for rearing of large size fowls during summers:

1. Large sized fowls are not raised as broilers, as broiler chicks should be of small size to yield more and consume less.
- 2.As the birds do not cope-up with summer their efficiency is low in high temperature. More expenditure is there on maintenance to increase their productivity. Cross breeding methods is used for production of small sized species which adapt to summer conditions. Cross breeding

programs between desi (indigenous) and exotic (foreign) breeds are carried out for the production of cross breeds with necessary traits. Other desired traits are:

- a. They require less expenditure for their maintenance.
- b. The cross breeds lay more eggs and produce good quality chicks.

Q47. Suggest some preventive measures for the diseases of poultry birds.

Answer:

The poultry birds suffer from diseases caused by viruses like flu, dermatitis, fowl pox, ranikhet disease, bacteria like tuberculosis, cholera, diarrhea, fungi like aspergillosis, and also parasites like worms, mites, lice etc.

They reduce the bird growth, egg production, fertility and cause death.

Following are some preventive measures:

- a. Disease-free chicks is kept in proper sanitary conditions from healthy parents.
- b. Poultry house should be cleaned and disinfected by spraying disinfectants at regular intervals.
- c. Fresh and balanced feed is given to the birds to avoid nutritional diseases.
- d. Overcrowding of birds, ill ventilation and dampness is avoided to prevent the spreading of disease.
- e. Newly hatched chicks are vaccinated regularly which prevents infectious diseases and reduces loss of poultry.

Q48. Figure shows the two crop fields [Plots A and B] have been treated by manures and chemical fertilizers respectively, keeping other environmental factors same. Observe the graph and answer the following questions.

- (a) Why does plot B show sudden increase and then gradual decrease in yield?
- (b) Why is the highest peak in plot A graph slightly delayed?
- (c) What is the reason for the different pattern

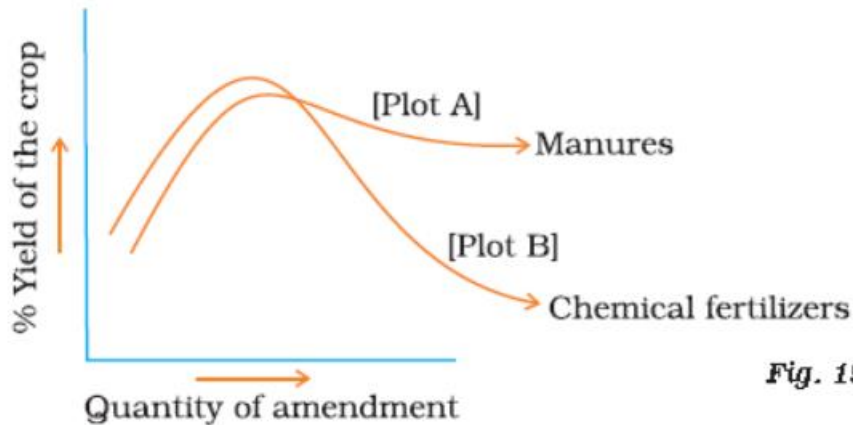


Fig. 15.1

- a) **In plot B**, chemical fertilizers are added so the yield of the crop increases, but with continuous use of chemical fertilizers the crop yield decrease as chemical fertilizers are nutrient specific and give short-term benefits. Their prolong use destroys soil fertility and gradually the crop production decreases.
- b) **In plot A** manures are used to improve the soil fertility which are rich source of organic matter and release nutrients slowly than fertilities. So, the highest peak in plot of graph is delayed. Manures increases soil nutrients and organic matter and thus fertility and soil structure.
- c) Manures are natural ways to enrich soil with organic nutrients but chemical fertilizers are chemicals that enrich the soil with a particular element. Fertilizers have adverse effect on soil fertility as they kill the useful microorganisms present in the soil and make the soil unfit for plant life and reduce crop productivity.

Manures improves the soil fertility by adding organic nutrients to the soil and their prolonged use will cause the crop production to increase.