

FOOD PRODUCTION AND MANAGEMENT

INTRODUCTION

The process of growing crops on a large scale is called agriculture. Horticulture is the art of growing fruits, vegetables and ornamental plants. It is a branch of agriculture. Agriculture is still the largest occupation in our country with nearly 70% of the population engaged in this sector. The progress in agriculture influences the progress of our country.

Crop Plants

The plants which are grown by man in large numbers to get useful products are known as crops or crop plants. Some common crop plants grown and consumed in India are given in table :

Table

Crop Plants Grown in India

	Crop Group	Crops
1.	Cereals	Wheat, rice, maize, millet (bajra), barley, oats.
2.	Pulses	Peas, green gram (moong), pigeon pea (arhar), beans.
3.	Vegetables	Tomato, potato, cabbage, onion, cauliflower
4.	Fruits	Apple, plum, peaches, grapes, guava.
5.	Oil seeds	Mustard, groundnut, coconut
6.	Spices	Chillies, turmeric, cardamom, garlic, ginger
7.	Sugar yielding crops	Sugarcane, sugarbeet
8.	Medicinal crops	Belladonna, mint, tulsi, isabgul, cinchona
9.	Fibre crops	Cotton, Jute, hemp
10.	Beverages	Tea, coffee, cocoa

◆ Crop Seasons

In India there are two main crop seasons for cultivating crops. These are known as rabi season and kharif season.

◆ Rabi Crops

These crops are sown in the beginning of winter i.e. between October and November and harvested by March or April. These crops do not depend on monsoon rains

Examples : wheat, barley, gram, potato, mustard

◆ Kharif Crops

These crops are sown at the beginning of the monsoon seasons between June and July and harvested by September or October. These crops depend on monsoon rains for growth.

Examples : rice, maize, millet, groundnut, cotton.

Agricultural implements

The tools which are used in cultivation of plants are known as agricultural implements. Some of these tools are used manually whereas other are used with the help of some animals like bullocks and camels. Now a days tractors and combine harvesters help the farmers in their work.

A list of commonly used agricultural implements along with their use is given below in table.

Table
Common Agricultural implements and Their Uses

Name of implement	Uses	Name of implement	Uses
Khurpa	For weeding	Seed drill	For sowing
Spade	For digging and bunds formation	Harrow	For weeding
Wooden plough	For tillage	Sickle	For harvesting
Iron plough	For tillage	Combines	For harvesting and threshing
Soil plank	For breaking crumbs	Sprayers	For Spraying insecticides
Leveller	For leveling and pressing the soil		

Basic agriculture practices

All the activities which are involved in cultivation of crops, from sowing to harvesting, are known as agricultural practices.

Preparation of the soil

This is the first essential stage for cultivating any crop plant. Preparation of soil involves the following step – ploughing and digging, levelling and manuring.

◆ Ploughing and Digging

The process of loosening and turning up of the soil is called tilling or ploughing. This is done by using a wooden or iron plough.

◆ Levelling

Soil, if ploughed in dry season, breaks into big mud pieces called crumbs. It is necessary to break these crumbs with the help of a wooden plank or iron leveller. The field is levelled for sowing as well as for irrigation.

◆ Manuring

Mixing soil with manure is called manuring. manure is usually added to the soil both before and after tilling. Adding manure before tilling helps in proper mixing of manure with the soil.

Sowing

The process of putting seeds into the soil is called sowing.

◆ Methods of Sowing

Seeds are sown in the field by any of the three methods described below.

- ◆ **Broadcasting** : Seeds are sown manually by directly scattering them into the soil. This process is called broadcasting.
- ◆ **Seed Drills** : The other method is to use a seed drill. A simple seed drill consists of an iron tube with a funnel at the top attached to the plough. Seeds are introduced into the funnel opening and then released into the soil furrows made by a plough. By this method seeds are sown at the correct depth and interval. It saves time and labour also.



Fig. Seed drill

- ◆ **Transplantation** : There are certain crops like paddy and some vegetables for which seeds are not directly sown in the field. They are first germinated in nurseries and then the seedlings are transferred to the main field. This process is known as transplantation.

Applying manures and fertilisers

Crops absorb various nutrients from the soil through their roots. They are required for their growth and development. Unless the depleted elements are replenished from time to time, the growth of the subsequent crops would be poor. This replenishment is done by adding manures and fertilisers to the soil. This process is called manuring.

◆ Manures

Manures are natural, organic substances obtained by the decomposition of animal wastes and plant residues. They supply essential nutrients and humus to the soil and make it fertile. Manures are of the three kinds : farm yard manure, compost and green manure.

- ◆ **Farm Yard Manure** : It consists of cattle dung, urine, straw, leaves and other farmyard wastes.
- ◆ **Compost** : It is the manure obtained by the decomposition of dead plants and animal wastes, sewage waste, etc. It is made by burying all available organic material in a pit with alternative layers

of soil and leaving it to rot.

- ◆ **Green Manure** : Green manure is formed by the decomposition of fast growing leguminous plants like guar and sunhemp. These plants are grown and ploughed back into the soil.

◆ Advantages of Manure

- ◆ It enriches the soil with nutrients.
- ◆ It adds organic matter to the soil which improves the quality of soil.
- ◆ It increases water-holding capacity in sandy soil and drainage in clay soil.
- ◆ It increases the population of useful microorganism in the soil
- ◆ It improves and maintains the quality of the soil for a long time.

◆ Fertilisers

A fertiliser is a man-made inorganic compound which supplies specific nutrients to the soil. The most commonly used fertilisers are the NPK fertilisers which are rich in nitrogen, phosphorus and potassium. Chemical fertilisers have become popular with farmers because most of them are soluble in water and can be easily absorbed by plants. They are also easy to store and handle.

Fertilisers are applied either by broadcasting in the field or by spraying or through irrigation channels. Some examples of commonly used fertilisers are urea, ammonium sulphate, superphosphate and potassium nitrate.

Table gives the differences between manures and fertilisers

Table
Common Agricultural implements and Their Uses

Manure	Fertiliser
1. Manures are natural substances. They are formed from dead, decaying organic matter and animal wastes like cow dung, plant residues and bird droppings.	1. Fertilisers are salts or inorganic compounds. They are produced in factories from chemicals.
2. Manures contain all the essential nutrients required for plants but in small amounts.	2. They are rich in plant nutrients like nitrogen, phosphorus and potassium.
3. They are very slow-acting on soil.	3. They are quick in action.
4. They provide humus to the soil and also improve its quality.	4. They do not improve the quality of the soil.
5. Manures are not absorbed quickly by the plants as they are not easily soluble.	5. They are soluble in water and can be readily and directly absorbed by the plants
6. These are not nutrient specific.	6. These are nutrient specific.
7. Manures are required in large amount.	7. They are concentrated and hence required in small quantities.
8. These are inconvenient to store, transport or apply.	8. They can be conveniently transported, supplied and stored.
9. They take long time to show results and require long time for their preparation.	9. They show immediate results and take less time in their manufacturing.
10. If applied in large quantities, they do not harm the plants.	10. If applied in large quantities, they may kill the plants.

◆ Natural methods of Replenishing the Soil with Nutrients

- ◆ **Leaving the Field Fallow** : It is the process of leaving the field uncultivated (fallow) for one or more seasons. Fallow land will regenerate the lost nutrients. However, due to high demand of foodgrains this method is no longer followed.

- ◆ **Crop Rotation** : It is the method of growing different crops alternately on the same land. Earlier, farmers in northern India used to grow legumes as fodder in one season and wheat in the next season. This practice was helpful in the replenishment of the soil with nitrogen. Farmers should be encouraged to adopt this practice.

- ◆ **Multiple Cropping** : Sometimes two or more crops are grown together in the same field. This practice is called mixed cropping or multiple cropping. The crops are chosen in such a way that the products and waste materials from one crop help in the growth of the other. Cotton and groundnut crops are often grown together for this reason.
However, these methods alone are not enough to maintain soil fertility and farmers have to add manures and fertilisers from time to time.

Irrigation

Plants need water for proper growth and development. Seeds need water for germination. Plants need water to draw nutrients from the soil and for making food by photosynthesis. Water helps the plant to translocate food from one part to other parts of the body. It also protects the crop from frost and extremely hot air currents. Thus water plays an important role in the life of plants right from the germination stage to the maturity stage.

◆ **Sources of Irrigation**

The main sources of irrigation in our country are rivers, reservoirs, lakes, ponds, wells, tubewells, dams and canals. Water from these sources is delivered by irrigation canals or pumped by using electric or diesel pumps.

◆ **Traditional methods of Irrigation**

In our country traditional systems of irrigation like the pulley system (moat), chain pump, lever system (rahat) and dhekli have been in use for centuries to lift water from water reservoirs and supply it to the field for irrigation. These methods are cheaper but less efficient.

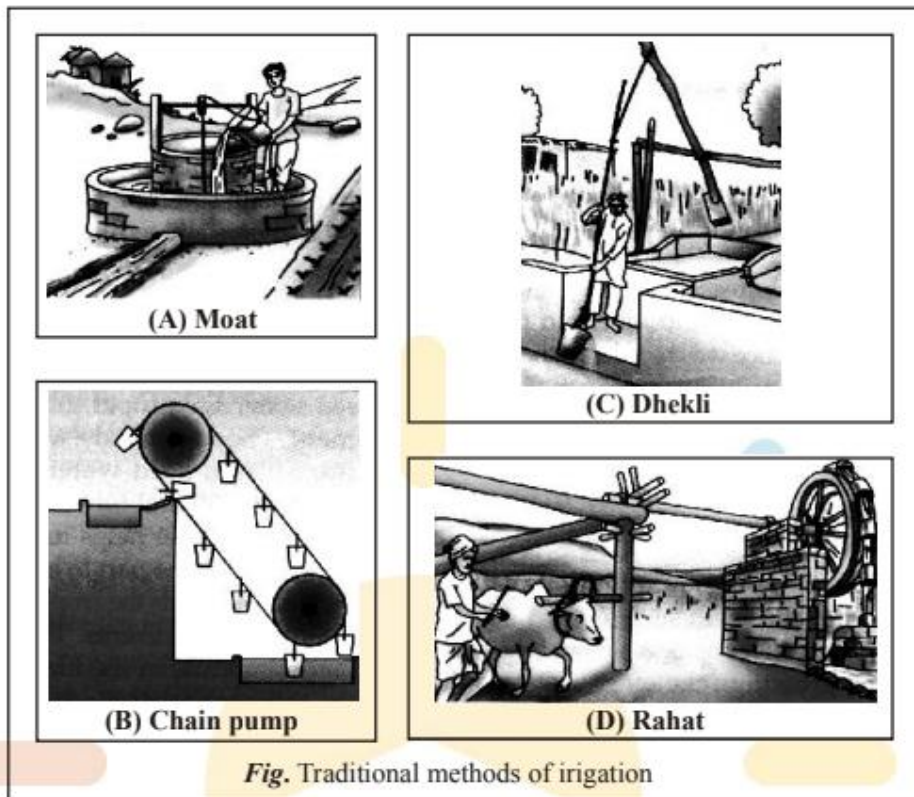


Fig. Traditional methods of irrigation

◆ **Modern methods of Irrigation**

There are four modern methods of irrigation commonly used in India

- ◆ **Furrow Irrigation** : In this method of irrigation, water is allowed to enter the field through channels or furrows made between two rows of crop
- ◆ **Basin Irrigation** : In this method of irrigation, the field is just filled with water as in the case of paddy
- ◆ **Sprinkler Irrigation** : This type of irrigation is used where the soil cannot retain water for a long time. Here the water is sprinkled by sprinklers.
- ◆ **Drip Irrigation** : Drip irrigation is also called trickle irrigation or micro-irrigation. In this system water falls drop by drop just at the root zone. The system minimises the use of water and fertilisers by allowing water to drip slowly to the roots of plants, either onto the soil surface or directly onto the root zone through a network of valves, pipes, tubes and emitters. Drip irrigation is used by farms, commercial greenhouses and residential gardens. Drip irrigation is adopted extensively in

areas of acute water scarcity and especially for crops such as coconuts, grapes, bananas, brinjal, citrus, sugarcane, maize and tomatoes.

◆ **Disadvantages of Excessive or Untimely Irrigation**

All crop plants require water at different stages of their development. Plants require the right amount of water at the right time.

- ◆ Excess of water (waterlogging) in the soil inhibits the process of germination of the seeds as the seeds do not get sufficient air to respire.
- ◆ Roots do not grow well if there is waterlogging in the field.
- ◆ If the crop is irrigated when fully mature, it gets damaged. The plants, which are unable to resist the strong winds, fall down, affecting the yield. The falling down of the crop due to untimely irrigation is termed as lodging. The excess water from the field then has to be drained off immediately.

Weeding

Weeds are the unwanted plants which grow along with the main crops. They are undesirable because they compete with the main crop for nutrients, space, air, light and water, etc. and reduce the crop yield. They also spread pests onto the crops and sometime produce poisonous substances which are harmful to animals and humans.

The process of removing weeds from the field is called weeding.

◆ **Time for weeding**

The best time for the removal of weeds is before they produce flowers and seeds.

◆ **Some Common Weeds**

Some of the most common weeds found in crop fields are :

- ◆ Wild oats (Javi).
- ◆ Grass
- ◆ Amaranthus (Chaulai)
- ◆ Chenopodium (Bathua)
- ◆ Convolvulus (Hiran Khuri)

◆ **Methods of Weeding**

- ◆ **Manual Weeding** : Weeds may be removed manually either by uprooting them or by cutting them with the help of tools like handfork, khurpa and harrow.
- ◆ **By Using weedicides** : The chemical substances which destroy (kill) weeds but do not harm the crop are called weedicides or herbicides. Some common weedicides in use are : Dalapon, Metachlor,

Siniazine and Butachlor. These weedicides are diluted in water and sprayed in the field with a sprayer.

Weedicides must be used with care as they are poisonous and have side effects if consumed. Farmers should cover their nose and mouth with a piece of cloth during spraying to protect themselves from the harmful effects of the chemicals.

- ◆ **Biological Method** : Weeds can also be controlled by biological methods. For example, cochineal insects are used to control the growth of the weed called opuntia.

Protection of crops

Pests are organisms that attack and damage crops. They may be rodents (rats), insects (locusts, weevils, termites), stray animals and birds. It is estimated that 10% of our crop is destroyed every year by these pests.

Crops are also attacked by bacteria, fungi and viruses by causing several diseases. These diseases reduce the quality and quantity of the produce. these diseases get transmitted through seeds, air, soil or through insects

◆ Pesticides

The chemical substances which kill pests without harming the crops are called pesticides. These chemicals are sprayed by using a sprayer or by a low flying aircraft. The following chemicals are used to kill these pests.

- ◆ **Insecticides** : These are used to destroy insects. *Examples* : DDT, BHC,, Malathion.
- ◆ **Fungicides** : These are used to destroy fungi. *Examples* : sulphur, lime sulphur
- ◆ **Rodenticides** : These are used to kill rodents. *Examples* : zinc phosphide, warfarin.

Insecticides, Fungicides and rodenticides are collectively called pesticides
Birds can be scared away by putting scarecrows in the fields as shown in Fig.

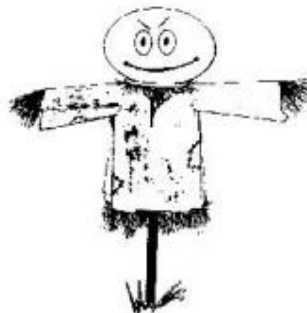


Fig. Scarecrow to keep birds away from the crop

Harvesting

Once the crop has matured, it has to be gathered. The process of cutting and gathering a matured crop is known as harvesting.

All over the world harvest season is celebrated with excitement. Baisakhi, Holi, Pongal, Diwali, Nabanya and Bihu are some of the harvest festivals celebrated in India.

◆ Harvesting of grain Crops

Most of the grain crops are reaped close to the ground with the help of a sickle.

◆ **Threshing** : The process of separating the grain from the harvested stalks of hay is known as threshing. This is done by spreading the harvested crop on the ground and walking over them. Animals such as bullocks, buffaloes or camels are also used on a large scale for this purpose.

◆ **Winnowing** : The process of separating the grain from the chaff is known as winnowing. Farmers hold the mixture of grains and chaff at a height and allow them to fall in a gentle stream. The wind blows away the chaff which is lighter. The heavier grains fall directly on the ground below and are thus separated.

Big farms use huge machines called combines which cut, thresh as well as separate the grain from the chaff, all at one go.

◆ **Harvesting of other crops** : Besides grain crops, all other crops like vegetable crops, cash crops, etc. are harvested through different processes and techniques. Plucking, gathering, packing, storing of crops, etc. are the different steps in the process of harvesting some specific crops.

Storage

There are two types of food materials: perishable and non-perishable.

◆ **Perishable food materials** : Perishable food materials are those which get spoiled easily when kept for sometime at room temperature, for example, vegetables, fruits, fish, meat and milk.

◆ **Non-perishable food materials** : Non-perishable food materials are those which do not get spoiled even when kept for a long time at room temperature, for example, wheat flour, food grains, spices and sugar.

◆ Modes of storage

There are two different modes of storage : dry storage and cold storage.

◆ **Dry storage** : This method is used for storage of non-perishable food materials. Foodgrains are

dried in the sun to bring down the moisture content below 14% by weight to prevent the attack by pests. The dried foodgrains are then weighed, packed in gunny bags and transferred to properly ventilated halls called godowns or granaries.

The gunny bags in the godown should be kept about 60 to 70 cm away from the walls and on wooden platforms about 10 to 15 cm above the ground. The godown must be kept free from pests by spraying various pesticides from time to time.

Farmers store foodgrains for their personal use in metal bins. Dried neem leaves are added in the bin to prevent pest infestation.

Grain silos are specially designed tall cylindrical structures for bulk storage of foodgrains. These silos can store different stocks of foodgrains at different levels. The required foodgrain can be taken out from the openings provided in the silo.

Granaries and silos should be inspected from time to time to check for infestation of any kind. In our country foodgrains are stored in large godowns by agencies like Food Corporation of India, State Warehousing Corporation, etc.

- ◆ **Cold storage** : This method is used for storage of perishable food materials. These food materials have very short shelf-life so that these are usually stored at low temperature.

Icebox or refrigerator is used at home to store fruits, vegetables, milk, milk products, fish, etc. On commercial scale, the perishable food materials are stored in either a deep freezer or a cold storage.

◆ **Advantages of Food Storage**

- ◆ It prevents the food from being spoiled by the action of enzymes and microorganisms.
- ◆ It increases the storage period of food materials.
- ◆ It helps in the availability of seasonal fruits and vegetables round the year.
- ◆ It makes the transportation of food materials easier.
- ◆ It helps to maintain prices in the market.
- ◆ It helps in maintaining buffer stock to meet any emergency in the country.

Food from animals

Animals are useful to us in many ways. A number of domestic animals like cows, buffaloes, goats, ducks, hens, fish and honeybees provide us with foodstuff like milk, meat, eggs and honey.

The keeping of animals for specific purpose is called domestication. All domesticated and useful animals constitute livestock. The breeding, feeding and caring of livestock for food and other useful purpose is known as animal husbandry.

Animal husbandry

The branch of agriculture which deals with the management, breeding, feeding, weeding and care of

domestic animals is called animal husbandry.

Important components of animal husbandry as follows :

- Proper feeding and clean drinking water.
- Clean and ventilated shelter.
- Prevention and care of animal diseases from spreading.
- Proper breeding of animals.

Animals that provide food for human consumption may be listed as :

◆ Dairy animals :

They include animals that provide milk e.g. cow, buffalo, goat, camel etc. India has the largest population of milk producing animals but the total quality of milk produced by them used to be comparatively low as compared to some other countries. But in recent years, with the efforts of **National Dairy Development Board (NDDB)**, it has greatly increased.

Milk is a highly nutritious food. It contains nearly all the nutrients required by us, that is why it is called complete food. Cow's milk contains 3.6% fat, 4% protein, 4.5% sugar, 0.70% minerals and 87.20% water.

Milk is mostly obtained from cows and buffaloes.

In order to get more milk, the cows and buffaloes have been brought from other countries. There are called exotic breeds while Indian breeds are called indigenous breeds. Efforts are being made to produce better breeds of cows and buffaloes which produce more milk.

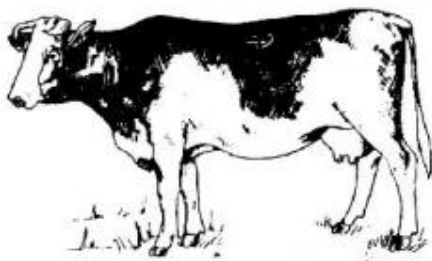


Fig. Holstein-Friesian cow

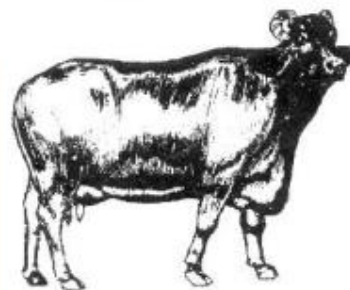


Fig. Murrah, a high milk yielding breed of buffalo

◆ Poultry animals :

Eggs and meat are obtained from birds hen, duck and turkey. Over the years, the demand of eggs and meat has increased considerably. Hence efforts are being made to improve the egg and meat production.

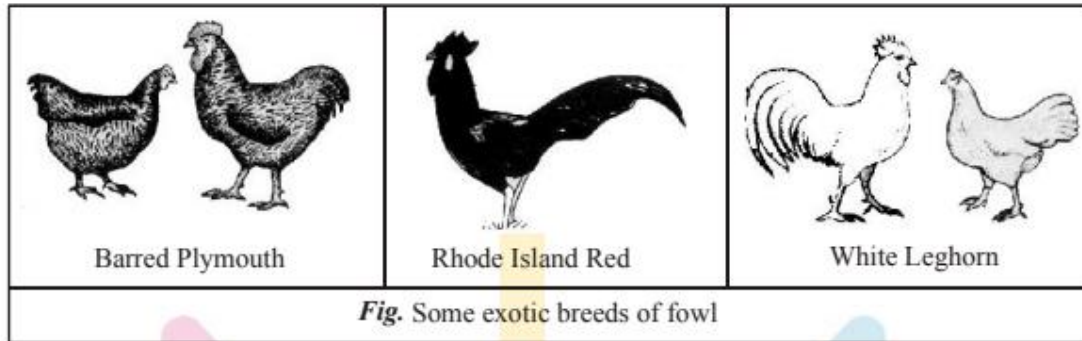


Fig. Some exotic breeds of fowl

◆ Fish farming :

Fish and other varieties of sea food constitute a good source of nutritious food. The meat of fish contains fat 2.6%, protein 19%, minerals 1.3% and water 77.20%. Fish provide nutritious food, oil, fertilizers and many other useful products. The term fisheries includes fish and all other edible aquatic animals like crabs, shrimps, lobsters etc.

Both fresh water and marine (sea water) fish are used as food. Some fresh water fish are *catla*, *rohu*, *singhara*, *calbasu*, *malli*, *magur* etc. Some popular sea water fish are *hilsa*, *pomfret* and *Bombay duck*.

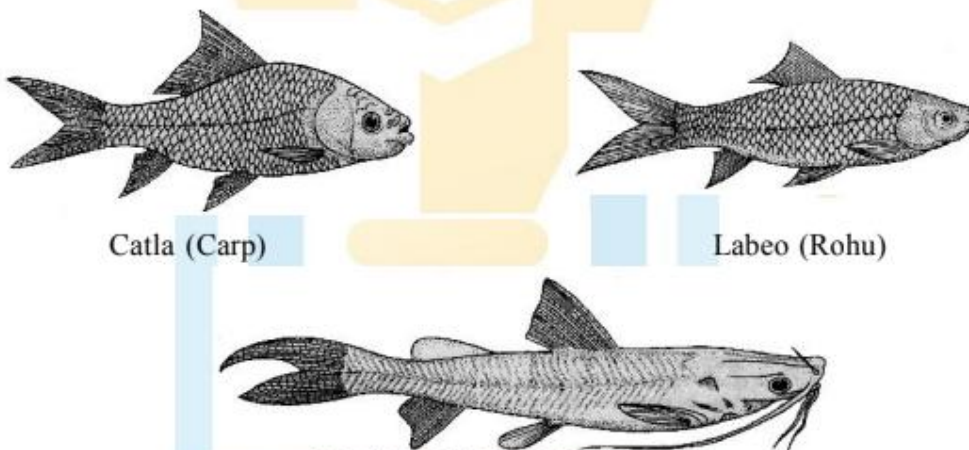


Fig. Some fresh water fishes

◆ **Meat providing live stock :**

The main meat providing animals are goat, sheep, pig and broilers. Goat's meat is in great demand.

◆ **Honey bees :**

Honey bees produce honey from the nectar of flowers. Its constituents are water, sugar, minerals and enzymes. Honey is used in various medicines. Rearing of honey bees on a large scale is known as apiculture. Honey is a highly nutritious product.

The revolutions

- ✓ **Green revolution :** Production of good quality grains (wheat etc.) in the country (wheat etc.) in the country to make it self sufficient.
- ✓ **Silver revolution :** Production of eggs by using high yielding breeds of hens.
- ✓ **White revolution :** For the enhancement of production of milk.
- ✓ **Blue revolution :** For the production of fish and food from water resources.

Some breeds of Indian Cattle

Milch Breeds	Draught breeds	General utility breeds
Gir	Malvi	Ongole
Deoni	Nagari	Haryana
Sahiwal	Hallikar	Kankrej
Red Sindhi	Kangayam	Tharparkar

Some exotic breeds of Fowl

White Leghorn	Plymouth Rock	New Hampshire
Rhode Island Red		

Some breeds of Indian Cattle

	Fresh water Fishes		Marine Fishes
1	Rohu (Labeo rohita)	1	Bombay duck (Harpodon sp.)
2	Calbasu (L. calbasu)	2	Eel (Anguilla sp.)
3	Catla (Catla catla)	3	Hilsa (Hilsa)
4	Singhara (Mystus singhala)	4	Pomphret (Stromateus)
5	Magur (Clarius batrachus)	5	Salmon (Aluitheronema)
6	Singhi (Heteropneustes)	6	Sardine (Sardinella)
7	Malli (Wallago attu)		

Major Animal Diseases

Cattle Diseases

Anthrax	Tuberculosis	Mastitis	Brucellosis
Salmonellosis	Blue tongue	Rinderpest	Mouth and foot diseases

Bacterial diseases

Pathogen	Disease
Pasteurella	Fowl cholera
Salmonella pullorum	Pullorum
Mycoplasma gallisepticum	Mycoplasmosis
Spirochaete	Spirochaetosis

Viral diseases :

Ranikhet disease	Fowlpox
Infectious bronchitis	Lymphoid leukosis

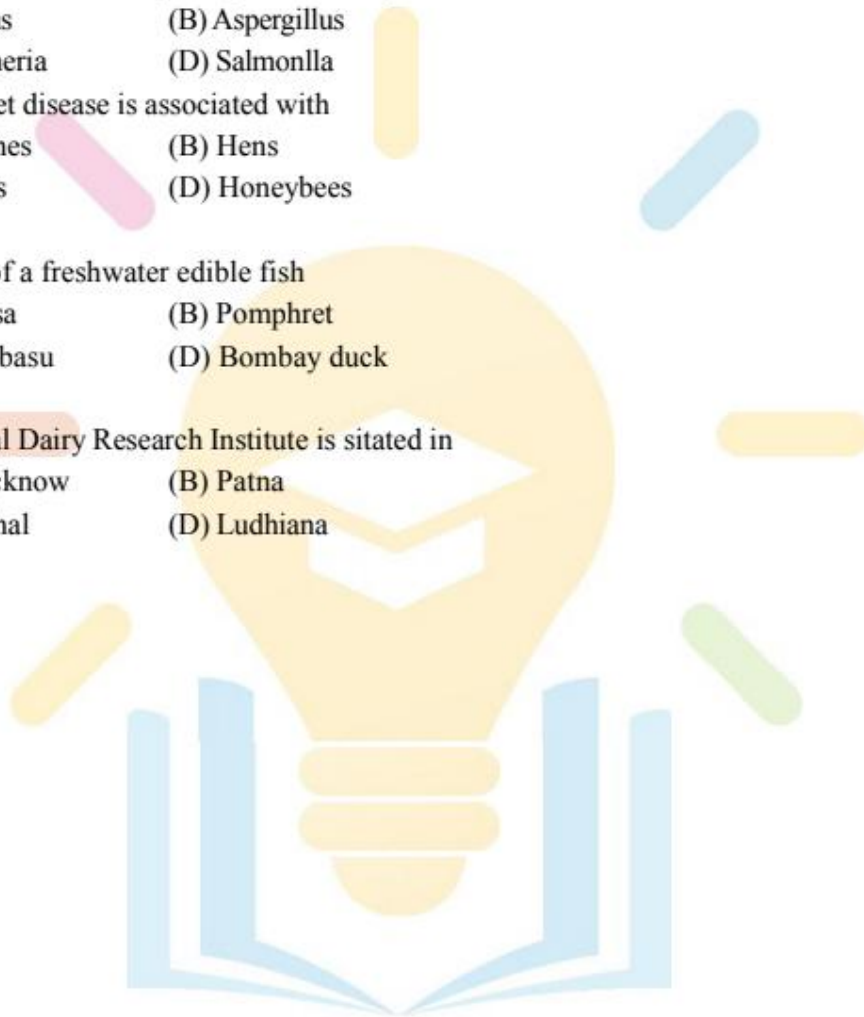
EXERCISE - 1

SINGLE CORRECT ANSWER TYPE QUESTIONS

- Q.1** The process of separating grains from the chaff is known as
(A) threshing (B) winnowing
(C) harvesting (D) weeding
- Q.2** DDT is used to kill
(A) weeds (B) Insects
(C) pests (D) rodents
- Q.3** Ditches made between the two rows of a crop are
(A) furrows (B) canals
(C) lines (D) none
- Q.4** Transfer of seedlings from nursery to the main field is
(A) Transplantation (B) Sowing
(C) weeding (D) none
- Q.5** Which one of the following is a weed ?
(A) wheat (B) Chenopodium
(C) maize (D) rice
- Q.6** Pullorum is caused due to -
(A) Pasturella (B) Mycoplasma
(C) Salmonella (D) Spirochaete
- Q.7** Murrah is a high-yielding breed of
(A) cow (B) hen
(C) buffalo (D) sheep
- Q.8** Catla and Rohu are examples of
(A) marine fish (B) freshwater fish
(C) brackish water (D) none of these
- Q.9** The production and management of fish is called
(A) aquaculture
(B) breeding
(C) pisciculture
(D) insemination
- Q.10** White revolution is related to the increase in the production of
(A) egg (B) milk
(C) meat (D) wool

- Q.11** Silver revolution is related to the increase in the production of
(A) egg (B) milk
(C) meat (D) grains
- Q.12** The process of cross-breeding two individuals of different varieties is
(A) artificial insemination
(B) feeding
(C) hybridization
(D) none of these
- Q.13** Buffalo's milk does not contain
(A) vitamin C (B) Vitamin E
(C) protein (D) carbohydrate
- Q.14** One of the following is a disease of poultry :
(A) Anthrax
(B) Pebrine disease
(C) Ranikhet disease
(D) Foot and mouth disease
- Q.15** Bombay duck is :
(A) Hilsa ilisha
(B) Harpodpn neherius
(C) Pediceps ruficolis
(D) Coreochromis mossambicus
- Q.16** Jaffrabadi is a breed of :
(A) Sheep (B) Cattle
(C) Horse (D) Buffalo
- Q.17** Pashmina is obtained from a variety of :
(A) Sheep (B) Goat
(C) Yak (D) Rabbit
- Q.18** Which of the following is popularly called 'Ship of the desert'
(A) Yak (B) Camel
(C) Donkey (D) Horse
- Q.19** Lohi is a breed of
(A) Goat (B) Sheep
(C) Horse (D) Buffalo

- Q.20** Fish liver-oil is rich in vitamins
(A) A and B (B) B and C
(C) A and E (D) A and D
- Q.21** The young chicken raised specially for meat are called
(A) Hen (B) Broilers
(C) Pullets (D) Ducklings
- Q.22** Pullorum disease of poultry is caused by
(A) virus (B) Aspergillus
(C) Eimeria (D) Salmonella
- Q.23** Ranikhet disease is associated with
(A) Fishes (B) Hens
(C) Pigs (D) Honeybees
- Q.24** Name of a freshwater edible fish
(A) Hilsa (B) Pomphret
(C) Calbasu (D) Bombay duck
- Q.25** National Dairy Research Institute is situated in
(A) Lucknow (B) Patna
(C) Karnal (D) Ludhiana



EXERCISE - 2

TRUE / FALSE TYPE QUESTION

- Q.1 Sandy soil can retain more water than clayey soil
- Q.2 Foodgrains can be safely stored just after threshing.
- Q.3 Manures are nutrients specific.
- Q.4 Winnowing can be done to separate grain from hay
- Q.5 Wheat and gram are rabi crops.

FILL IN THE BLANKS

- Q.6 Weedicides are the chemicals that are used to kill
- Q.7 and are common sources of water for irrigation.
- Q.8 Process of separating grain from harvested stock is
- Q.9 Process of separating grain from chaff is

VERY SHORT ANSWER TYPE QUESTIONS.

- Q.10 Which agricultural task has to be completed before sowing ?
- Q.11 What do you mean by the term 'agricultural practices' ?
- Q.12 Name the implement used for sowing seeds.
- Q.13 What is FYM ?
- Q.14 Name two rabi and kharif crops.

SHORT ANSWER TYPE QUESTIONS

- Q.15 Define manure. What purpose is served by a manure ?
- Q.16 Why are seeds treated before sowing ?
- Q.17 How would you protect crops from pests and diseases ?
- Q.18 Give two functions of soil.
- Q.19 What type of food materials are usually stored in cold storages ?

LONG ANSWER TYPE QUESTIONS

- Q.20** List the advantages of manure over fertilizers
- Q.21** What are manures. Explain its types
- Q.22** Explain the storage of food materials.
- Q.23** What is aquaculture. Explain
- Q.24** What is meant by white revolution ?

ANSWER KEY

EXERCISE -1

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	B	A	A	A	B	C	C	B	A	B	A	C	A	C	B
Ques.	16	17	18	19	20	21	22	23	24	25					
Ans.	D	B	B	B	D	B	D	B	C	C					

EXERCISE -2

TRUE / FALSE TYPE QUESTION.

Sol.1 False

Sol.2 False

Sol.3 False

Sol.4 False

Sol.5 True

FILL IN THE BLANKS

Sol.6 Weeds

Sol.7 River, Wells

Sol.8 Threshing

Sol.9 Winnowing

VERY SHORT ANSWER TYPE QUESTIONS.

Sol.10 Preparation of soil

Sol.11 All the activities which are involved in cultivation of crops, from sowing to harvesting, are known as agricultural practices.

Sol.12 Seed drill

Sol.13 Farm Yard Manure

Sol.14 Rabi - wheat, gram kharif - Rice maize