

# Agricultural Practices and Animal Husbandry

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We all need food to survive. Food is the basic need for all living beings, as it provides energy for doing work, and raw material for building and repair of various parts of the body. You know that our country has a large population, and therefore, we need to produce a lot of food. You also know that to produce such a large amount of food we need a large area of land. However, our land availability is limited. Indian scientists have experimented and researched and suggested ways and means by which more food can be grown than before, on the same piece of land. Improved methods of agriculture have led to the production of about 360m tonnes of plant food products and about 88m tonnes of animal food products.

## OBJECTIVES

After completing this lesson, you will be able to:

- state reasons for human dependence on plants and animals for food;
- define and differentiate between agriculture and horticulture;
- list and explain the various steps for raising an improved crop;
- differentiate between manures and fertilizers with the help of examples;
- explain various agricultural practices adopted for improvement of food such as, crop rotation and multiple cropping;
- state the need for protection of crops;
- explain the terms and give examples of weedicides and insecticides;
- suggest methods of storage of agricultural produce;
- explain the meaning of green revolution;
- state the need for animal husbandry;
- cite examples of three groups of domesticated animals;
- explain methods adopted for management of live stock for better production;
- state common diseases of domestic animals and their prevention.

## 32.1 HUMAN DEPENDENCE ON PLANTS AND ANIMALS FOR FOOD

Our food items are either plant products, such as grains, vegetables and fruits or animal products like milk, egg, mutton, chicken etc.

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We eat various parts of plant as food. For example, grains of rice, wheat and corn are seeds; radish and carrot are roots; potatoes and ginger are the stem. We also eat leaves and stem of spinach and plenty of fruits.

Thus, human beings depend on plants and animals for food.

### 32.2 AGRICULTURE AND AGRICULTURAL PRACTICES

The branch of science which deals with methods of food production is known as **agriculture**. Besides studying the new methods of food production, in this branch of science we also study about how new and better varieties of crops can be grown, how animals and birds like cows, hens, etc. can be reared well and made to give more milk or better quality eggs?

All these new methods which scientists develop come under **agricultural practices**.

We need vegetables, fruits, cereals, pulses, etc. as food. For our clothes, we need the fibre of plants or animals. We get all these foods and fibres by farming or agriculture.

#### ACTIVITY 32.1

Make a list of things which you use every day. Categorise those items which you get directly or indirectly from agriculture. Does your list look like the one given below?

For easy reading, agricultural products have been divided into the following groups as given in the table 32.1.

**Table 32.1: Various categories of food items**

Category	Examples
<b>Millets</b>	Sorghum (Jowar), Ragi (finger millet) and Bajra (pearl millet)
<b>Pulses</b>	Arhar ( <i>Tur</i> ), Black gram ( <i>Urad</i> ), Green gram ( <i>Moong</i> ), and Bengal gram ( <i>Channa</i> )
<b>Beans</b>	Peas, Soyabean, Cowpea, Lentil
<b>Oilseeds</b>	Mustard, Groundnut, Soyabean, Sunflower, Linseed, Castor and Cotton seed
<b>Root crops</b>	Carrot, Turnip, Sweet potato
<b>Tuber crops</b>	Potato, Tapioca, Ginger and Turmeric
<b>Sugar crops</b>	Sugarcane and Beet root
<b>Plantation crops</b>	Coffee, Tea, Rubber and Coconut

### 32.3 HORTICULTURE

Did you observe that something is missing from the list of food items which we eat every day. What is it that we have not listed here in table 32.1? Yes, we have neither included vegetables nor fruits in this list. Vegetables and fruits are essential items of our diet and their growth and production are studied under a branch of agriculture called horticulture.

**Horticulture** is derived from two latin words: *hortus* which means garden, and *culture* which means cultivation.

The branch of agriculture that deals with growing and production of vegetables, fruits, ornamental plants and management of orchards is called horticulture.

Horticulturists research to find new ways by which better varieties of fruits and vegetables can be grown in large quantities.

### 32.4 STEPS IN RAISING IMPROVED AGRICULTURAL PRODUCE

To increase our food production we can sow good quality seeds and improve the methods of sowing. We can make the soil more rich and even use better techniques for harvesting the crops. Some of the agricultural practices which scientists have developed and which our farmers have started are explained here.

#### 1. Preparation of soil

This is an important practice which helps to enrich the soil and make it more fertile and aerated. It involves addition of manure followed by turning, loosening and levelling of the soil, using agricultural implements like spade, plough or mechanical farm implements.

#### 2. Seed treatment

Seeds can easily be attacked by micro-organisms. The crops that grow out of diseased seeds will also be unhealthy. So farmers treat these seeds by dipping them in certain chemicals like *cerosan* or *agrosan*. These chemicals do not allow the microorganisms to attack the seeds and damage them. Such chemicals are called **Fungicides**. Once the seeds are treated, they can be sown.

#### 3. Preparing the seed bed and care of the seedlings

In certain crop plants like paddy and some of the vegetables, seeds are not sown directly in the main field. First these seeds are sown in a nursery bed. Once they grow to a certain age they are transferred and planted in the main field. These small plants are called **seedlings**. When the farmers prepare a nursery bed they take care of the following:

- The soil of the bed should be soft and loose so that the tender roots of the seedlings can grow well. This can be achieved by digging or ploughing the field well.
- The seed bed or where the seedlings are planted should be even so that when we water the plants, the water distributes itself uniformly all over the field.
- All weeds or unwanted plants in the field must be removed. Do you know why? It is because these weeds also take water and nutrients from the soil and as a result the desired plants cannot get enough of the nutrients. The seedlings also need to be protected from diseases and pests. This is done by spraying chemicals like *Parathion*, *Sevin*, *Dimecron* and *Rogor* on the seedlings.

#### 4. Transplanting

The process of removing the seedlings from the nursery bed and planting them in the main field is called **transplanting**.

When we transplant, we must select those seedlings which have 4 to 5 healthy

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leaves. These are sowed at proper distance from each other.

The main field must be ploughed and manured before transplanting. Generally rice and vegetables like tomato and brinjal are sown by transplanting.

Transplanting of seedlings is a very important practice. This enables us to select good and healthy seedlings and get a better crop. Besides, when we transplant seedlings, their roots are able to go deep into the soil and get more nutrients. When seedlings get good food, they grow into healthy plants and give a better yield.

### 5. Adding fertilizers

Crops need nutrients like phosphorus, calcium, nitrogen etc. for their growth and pick up these nutrients from the soil. It is very important to add fertilizers to the soil. They provide nutrients to the soil and help to obtain a better crop yield. Depending on the type of soil and the crop to be grown, we use different fertilizers. The way we use a fertilizer also depends upon what type of fertilizer is being added to the soil. A fertilizer which contains nitrogen (**nitrogenous fertilizer**) is generally given in two or three doses. Other fertilizers are **phosphatic** and **complex fertilizers**. Some fertilisers are added to the soil before transplanting. You must have heard about the most commonly used fertilizer 'NPK'. The letter N stands for nitrogen, P for phosphate and K for potassium. While fertilizers are manufactured from chemicals in factories, manure is made from organic substances and contains nutrients in small quantities. Some of the commonly used manure are:

*Farmyard manure*, as the name suggests is a mixture of decomposed cattle dung (excreta) and urine, left over fodder (cattle feed) and litter (bedding provided to cattle in the farm).

*Compost* is manure made from vegetable and animal refuse collected from domestic waste, straw, weeds etc., dumped in a deep pit to decompose.

*Vermicompost* is compost broken down by earthworms. Like fertilizers manures too add nutrients to soil.

### 6. Use of plant growth regulators

Plant growth regulators are certain chemicals which regulate the growth of plants. All plants have growth regulators which determine how tall the plant would be, how big its fruit will be, etc. We can now add some plant growth regulators like *auxins*, *gibberellins*, *cytokinins*, *abscisic acid* etc. to get a better yield of crops. You will learn more about these plant growth regulators in higher classes.

### 7. Irrigation

Irrigation is necessary for proper development of plants. Roots fail to develop and penetrate in the dry soil. The crop is irrigated according to its requirement and soil characteristics. Irrigation is essential during the seedling, flowering and grain filling stages of the crop. Rice crop needs standing water.

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## 8. Harvesting

Harvesting machines have now replaced the back breaking job of hand harvesting with the sickle and scythe. Harvesting machines cut or dig out the plant or its parts as required. The machines gather the plant parts, separate desired parts and eliminate parts not needed. Certain harvesting machines may even load the crop for transport. However, the above mentioned functions of harvesting machines depend on kind of crop, plant parts to be harvested, crop use, stage of maturity, etc.

## 32.5 SOME OTHER DIFFERENT AGRICULTURAL PRACTICES

### 32.5.1 Rotation of crops

If you stay in a village you must have seen that the wheat crop is planted during the month of November and harvested in March and April. The rice crop is planted in June-July and harvested in October and November. The land that lies fallow in between these two cereal crops, can be used by the farmers for sowing a leguminous crop at this time. A leguminous crop does not take as long as wheat or rice to grow. So by the time the farmer has to plant the cereal crops (rice, wheat etc.) the pulse is ready to be harvested.

Leguminous crops include pea, beans, grams and pulses. They harbour nitrogen fixing bacteria in nodules of their roots (Fig. 32.1). These bacteria convert free nitrogen from atmosphere into usable form. Thus, after the leguminous crop is harvested, the soil is left fertile for other crops.

The process of growing a different crop preferably a leguminous crop in between raising of two similar crops is called **rotation of crops**.

Crop rotation has a lot of benefits, (i) the land gets utilized, (ii) the pulse crop uses up different nutrients from the soil but it fixes the nitrogen from the air and makes the soil richer in nitrogen and so more fertile. This way the next cereal crop gives a better yield. If we do not practice crop rotation by growing different crops on a piece of land, but continue to grow the same crop, year after year, they will keep on using the same nutrients from the soil till all the nutrients in the soil get used up. The newly grown plants get poor nourishment from the soil and grow up to be weak and of bad quality. When plants are weak the insects can easily attack them and destroy them. Thus, crop rotation restores the fertility of



*Fig. 32.1 Nitrogen fixing bacteria in the root nodules*

the soil, it gives better yield, prevents crop from diseases and pests and reduces the dependence on chemical fertilizers.

### 32.5.2 Multiple cropping

Growing two to four crops one after the other in a year in the same field is called **multiple cropping**. Multiple cropping is possible, when we make use of crop varieties that grow for a short period of time. However, to get best results there must be a properly managed field. In fact, multiple cropping is the best solution for a country with food problem because same piece of land is used to grow different kinds of crops.

#### ACTIVITY 32.2

Here is something you can do. Visit a nearby agricultural farm or vegetable garden. Observe and note down the agricultural practices being used there.

All the above mentioned practices are meant to ensure that plants have a healthy growth and yield a good crop. Along with these developments in our country we have also brought under cultivation more and more land. The increased cultivation of agricultural crops is in order to meet requirements of a growing population.

### 32.5.3 Improving the variety of seeds

You must have often heard or read advertisements which encourage farmers to buy new and better varieties of seeds. Some of these new varieties are resistant to diseases and give a very good crop. Some of the improved high-yielding crop varieties which our scientists have developed are given in table 32.2.

**Table 32.2 Improved high-yielding varieties of crops**

Crop	Variety
Rice	I R-8, Jaya, Padma, Bala
Wheat	Sarbati sonara, Sonalika, Kalyan sona, Hira-moti, RR-21 and UP 301
Maize	Ganga 101, Rankit and Deccan hybrid
Lady's finger ( <i>Bhindi</i> )	Pusa savani
Brinjal	Pusa purple, Pusa kranti and Muktabeshi

Do you know what name is given to scientists who develop such new varieties of seeds? They are called **plant breeders**.

Plant breeders have not only raised better quality seeds but also better quality fruits. Mango has been named the 'king of fruits' and in our country we grow many varieties of mangoes. Some of them are Alphonse, Langra, Chausa, Saroli, Dussehri, Himsagar, Safeda, Sinduri, Mulgoba, Amini.

## 32.6 PROTECTION OF CROPS IN THE FIELD

As crops grow in the field, they have to be protected such that they produce a healthy yield. The weeds growing along with crops have to be removed and growing crops have to be saved from the attack of pests especially insects pests.



### 32.6.1 Weed control

The undesirable plants that compete with the main crop for sunshine, water and space in the field are called weeds. Weeds must be removed as they use up the nutrients in the soil and thereby make them unavailable for the crop itself. Weeds can be divided into two groups: (i) graminaceous (Monocotyledonous), and (ii) non-graminaceous (Dicotyledonous). *Hariali* or *Doob* grass is a graminaceous weed, while *Choulai* is a non-graminaceous weed.

Before sowing or transplanting seedlings, weeds are removed by hand or with the help of a plough or harrow. If some of these weeds start growing again during the crop growth they must be removed. They can be removed by hand or by spraying weed killing chemicals called weedicides like 2, 4-D; MCPA and Simazine.

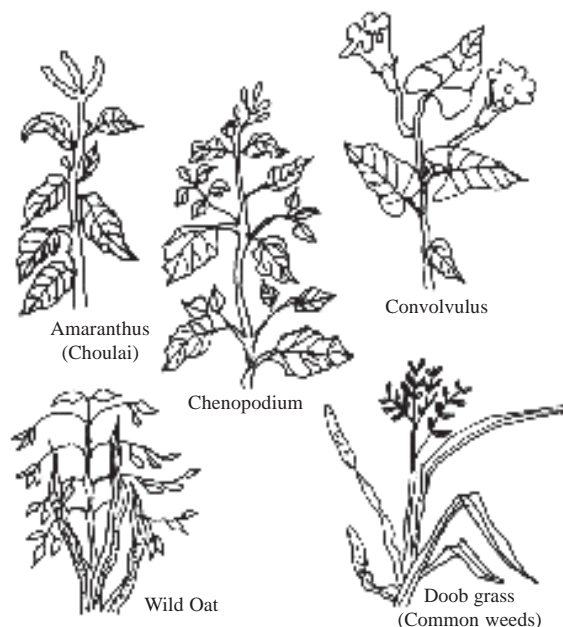


Fig. 32.2 Some common weeds

### 32.6.2 Control of plant diseases and pests

A lot of plants die due to some diseases and pests which attack and damage them. Generally plant diseases are caused by fungi, bacteria, and viruses. These diseases are transmitted either through the seed itself (seed-borne) or by air (air-borne) or soil (soil-borne). Rust of wheat and Blast of rice are two common fungal diseases of plants. Insects are generally pests which eat and destroy crops (Fig. 32.3). To control plant diseases and pests we can spray fungicides and pesticides on the crops or on the soil. Apart from chemical methods, biological control methods are also used. For example aquatic weeds are eaten up by certain fish. Some insect pests are controlled by introducing their predator insects.

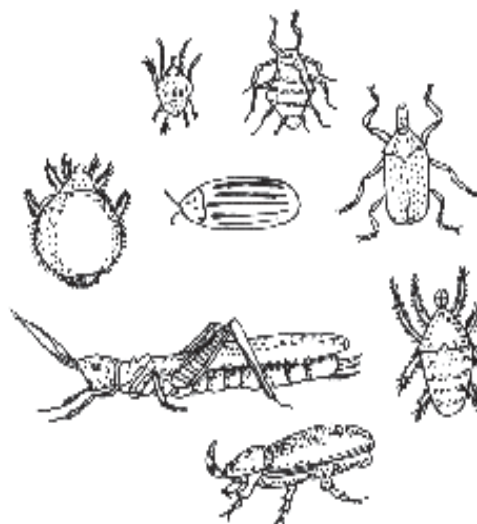


Fig. 32.3 Some insect pests of crops

## 32.7 PRESERVATION AND STORAGE OF AGRICULTURAL PRODUCTS

Once harvested, food grains have to be safely stored. They have to be saved from being attacked and eaten up by rodents, birds or insects. Also they have to be

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protected from spoilage due to improper temperature and moisture in the storage place or due to growth of fungi.

Some of the methods to prevent loss and spoilage of agricultural products are as follows:

- **Drying:** The grains can be dried in the sun or by blowing hot air on them.
- **Maintaining storage containers:** Godowns or gunny bags or tanks or earthen pots used for storage should be free of the cracks and holes and should be clean.
- **Chemical treatment:** Spraying or fumigation (insecticide solution converted into fumes) of godowns and containers with insecticides and fungicides should be done before storage. Care should be taken to ascertain that the grains for

consumption by human beings are not treated with chemicals poisonous to human beings. Grains are often treated with neem kernel powder or pepper or mineral oil which prevent laying of eggs by insect pests.

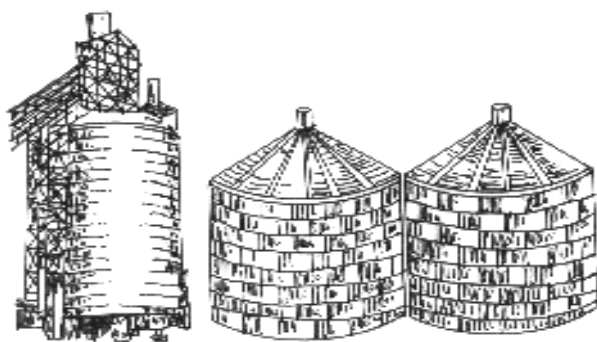


Fig. 32.4 Silos

- **Use of improved storage structures:** Structures which are airtight, rat proof, moisture proof and can maintain a steady temperature are now used for storage. Few of them are named Pusa bin, Pusa cubicle and Pusa kothar. Fig. 32.4

shows a type of storage structure called 'silos'.

### 32.8 GREEN REVOLUTION

A general improvement in crop yield and food production occurred in our country between 1960 and 1980 and marked a turning point in Indian agriculture. This is commonly referred to as the golden era of agriculture or the *green revolution*. As a result of this we have become self-sufficient in food. In fact we are able to have surplus crop to stock and use in natural calamities like drought and floods.

The credit for green revolution goes to a great agricultural scientist of our country, Dr. M. S. Swaminathan. He is the recipient of World Food prize for fighting against hunger.

Thus, we find that modern agriculture needs the support of:

- industries to produce farm implements, pumps, fertilizers and pesticides;
  - irrigation and power projects to provide timely supply of water and power; and
  - research and development institutions to breed newer, sturdier, pest resistant and better yielding varieties of crops and animals.
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### CHECK YOUR PROGRESS 32.1

#### 1. Fill in the blanks.

- i) The branch of science which deals with the study of the cultivation of land, and breeding and management of crops is called \_\_\_\_\_
  - ii) The branch of agriculture, which deals with growing and production of vegetables, fruits, ornamental plants and management of orchards and parks is called \_\_\_\_\_
  - iii) The improved varieties of plants are resistant to diseases and give high \_\_\_\_\_
  - iv) 2, 4-D is a \_\_\_\_\_
  - v) A nitrogenous fertilizer is applied in \_\_\_\_\_ doses.
2. Name two improved varieties of wheat.
  3. Name three kinds of organisms, which cause diseases in plants.
  4. Give one point of difference between crop rotation and multiple cropping.
  5. Give two examples of weeds.
  6. Name any two plant growth regulators.

### 32.9 ANIMAL HUSBANDRY

The branch of science, which deals with the study of various breeds of domesticated animals and their management for obtaining better products and services from them is termed animal husbandry (the term husbandry comes from 'husband' which means one who takes care).

- **Milk giving (milch) animals:** Cows, buffaloes and goats who give us milk.
- **Meat and egg giving animals:** Pigs, cattle, goat, sheep, fowls and ducks which are the main source of meat. From hens and ducks we get eggs.
- **Working (draught) animals:** Bullocks, buffaloes, camels and horses are draught animals used for doing work in the field and for transportation of goods and human beings. Mules are also used especially by the army to take things from one place to another in the hilly areas.

We also get horns, feathers and leather from some of these animals which can be used for making various things. Their urine and droppings help to make the soil fertile by acting as manure.

#### 32.9.1 Need for animal husbandry

We have a large number of animals in our country. Yet we do not get as much food from these animals as we possibly can and need for our large population. Besides the food, which we get from animals, we need them to do a lot of our work. In India, we have about 80.4 million cattle, which work in the fields. If we take the ratio of working cattle to the area of land, which is being used for cultivation we find that only two individuals of cattle are available to plough 3.8 hectares of land.

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You all know that cattle wastes like urine and faeces are natural manure which enrich our soil. Unfortunately, in India we do not use all the cowdung available and a lot of it goes waste. Gobar gas plants have been developed so that we can make use of the cattle dung both for fuel as well as to make manure.

Thus, we find that animal husbandry is a very important field which helps us to improve our livestock and other useful animals and make the maximum use of them.

### **32.9.2 Management of livestock**

When we study about improving our livestock we learn how they must be sheltered, fed, and mated, what kind of drinking water should be given to them and how the sick and diseased animals ought to be treated? This way we learn to manage our livestock for better production and utilization.

#### **1. Feeding of animals**

All animals must be fed properly. The food should contain the requisite nutrients i.e. carbohydrates, proteins, fats, minerals, vitamins and water.

The food which is given to cattle can be divided into two categories:

- **Concentrates** like cotton seeds, oilcakes, cereal grains, bran etc. They are very rich in most of the nutrients.
- **Roughage** includes fibrous and rough food like straw and stems of cereal crops. Generally roughage has a low nutrient content.

An average Indian cow eats about 15-20 kg of green fodder and 4 to 5 kg dry-grass, which is mixed with a sufficient amount of grain. A cow drinks about 32 litres of water. Goat and sheep eat grass, herbs and waste products from the farms. Pigs are usually given cereals and their products to eat. Poultry birds are given a mixed feed consisting of cereals, bone meal, minerals and vitamins.

#### **2. Housing of animals**

We must protect our animals from too much heat, rain and cold. We must, therefore, be careful where we house them. Their houses should have proper sanitation and ventilation. Too many animals should never be kept in a small space.

Different animals require different types of houses. Hens and fowls are kept in cages while sheep and goats stay in open yard, which is partially covered with roof made of straw. This open yard should have a hedge of iron wires all around to prevent the animals from running away.

#### **3. Water and its supply**

To keep these animals healthy they should be given clean water to drink and in sufficient quantities. For example, on an average a cow consumes about 27-36L of water, pigs require 5-23L, camel 8-90L and poultry birds require about 240mL of water. Besides this we must also bathe the cattle with clean water.

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#### 4. Some common diseases of animals and vaccination

Sometimes domestic animals may be afflicted by diseases. Some of the common diseases of animals are listed below.

**Viral diseases:** Pox in cattle, goats, sheeps, and fowls; dermatitis in goats and sheep; foot and mouth disease in cattle.

**Bacterial diseases:** Tuberculosis in cattle and poultry birds; cholera in fowls; diphtheria in calf; diarrhea in chicks; foot rot in sheep.

Most of these diseases can be prevented by proper sanitation, a controlled diet, proper housing and also by vaccinating the animals against these diseases at the proper time and age.

#### 5. Animal breeding

Breeding means to reproduce. In case of animals, breeding is done to obtain animals with desired characters. The two individuals of desirable characters can be selected as parents. These are then crossed to obtain new breeds of animals, e.g. by cross breeding a cow of low milk yielding breed, we can get breeds of cow which produces more milk.

**Artificial insemination** is an important and effective method of breeding. The process involves injecting the semen obtained from desired bull belonging to high milk yielding breed into the reproductive tract of female during heat period.

It generally gives important breeds, and is widely used to improve the qualities of cow, buffaloes, poultry, horse and goat etc.

##### Important breeds of cow

In India, improved breeds of dairy cows have been developed at National Dairy Research Institute (NDRI), Karnal, Haryana. Some examples are:

Karan Swiss (Crossbreed of brown Swiss and Sahiwal)

Karan Fries (Crossbreed of Tharparkar and Holstein-Friesian)

Frieswal (Crossbreed of Holstein-Friesian and Sahiwal)

Over the last two decades, improved practices of raising animals have resulted in the development of new breeds of dairy animals, poultry and pigs. This has substantially increased our milk, egg and meat production.



Holstein-Friesian cow



Murrah



Sahiwal cow

Fig. 32.5 High yield breeds of cows

There is no dearth of milk, the most wholesome food in the country. The credit for increased milk production goes to Dr. V. Kurien. Dr Kurien is the founder chairman of National Dairy Development Board which designed and implemented “Operation flood” – the programme which led to the “white revolution” or self sufficiency of the country in dairy products.

### **CHECK YOUR PROGRESS 32.2**

1. Write the importance of domesticated animals.
2. Define management of livestock.
3. Name any two diseases that are caused by virus in cattle?

### **LET US REVISE**

- To increase food production we must use improved agricultural practices, have proper knowledge of animal husbandry and prevent soil erosion.
- Various agricultural practices which we can use to increase our food production are preparation of soil, improving the seed variety, seed treatment, preparation of seed bed, transplanting, use of fertilizers, irrigation, weed control, control of plant diseases, use of plant growth regulators, rotation of crops, and multiple cropping.
- Green revolution through use of improved techniques has led our country to attain self sufficiency in food.
- Domestic animals are very useful for us. They give us milk, meat and eggs. They also help in ploughing our fields and for transporting things. We must look after them properly, make proper houses for them, give them good food and water and keep them free from diseases.
- Management of livestock involves proper feeding, housing, vaccination and breeding of animals.
- Artificial insemination is an important breeding activity to improve high yielding animals.

### **TERMINAL EXERCISES**

#### **A. Multiple choice type questions.**

**Select the most correct answer of the following:**

1. Corosan or agrosan are chemicals belonging to a group of  
(a) pesticide      (b) fungicide    (c) weedicide    (d) fertilizer
  2. Which of the following is the proper sequence of agricultural steps?  
(a) Seed treatment, preparation of soil, addition of fertilizers, preparation of seed bed  
(b) Preparation of soil, seed treatment, preparation of seed bed, addition of fertilizers  
(c) Preparation of seed bed, preparation of soil, seed treatment, addition of fertilizers
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- (d) Addition of fertilizers, preparation of soil, seed treatment, preparation of seed bed
- 3. Choose the high yielding variety of wheat
  - (a) IR-8, Jaya, Padma
  - (b) Ganga 101, Rankit, Deccan hybrid
  - (c) Sarbati sona, Sonalika, Hira moti
  - (d) Pusa purple, Pusa savani, Muktabeshi
- 4. Credit of 'Green revolution' in our country goes to,
  - (a) Aryabhatta (b) Dr V. Kurien
  - (c) Dr M.S. Swaminathan (d) Dr. H.G. Khorana
- 5. Food items such as cotton seeds, oil cakes, cereal grains and bran belong to which of the following category?
  - (a) Roughage (b) Concentrate (c) Minerals (d) Vitamins

**B. Descriptive type questions.**

1. Define the terms agriculture and horticulture.
2. Why is it advisable to cultivate pulse crops in between two successive cereal crops?
3. Give one improved variety of each of the following crops—wheat, rice, maize, and lady's finger.
4. Give names of two viral diseases of domesticated animals.
5. To meet increased demand of food, what steps would you suggest?
6. List and briefly discuss major aspects of animal husbandry.

**ANSWERS TO CHECK YOUR PROGRESS**

**32.1**

1. (i) agriculture (ii) horticulture (iii) yield (iv) weedicide (v) split
2. Any two of the wheat varieties as given under varietal improvement.
3. (i) Seed borne (ii) Air borne (iii) Soil borne
4. Crop rotation means growing a pulse crop between two cereal crops.
5. *Doob grass* and *Chaulai*
6. Auxin, Gibberellin, Cytokinin, Absciscic acid (any two)

**32.2**

1. (i) They provide milk
    - (ii) They provide meat and eggs
    - (iii) They are used for work
  2. Taking proper care of the livestock.
  3. Pox, Foot and mouth disease.
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## GLOSSARY

**Agriculture:** Branch of Science dealing with methods of production of food crops.

**Agricultural practices:** Methods used in agriculture for growing better quality and high yield varieties of crops.

**Animal husbandry:** Branch of Science dealing with study of various breeds of domesticated animals and their management for obtaining better products and services from them.

**Biological control:** Killing insect pests by predators.

**Dermatitis:** Disease of skin.

**Draught animals:** Animals used to carry goods or working in the fields.

**Fungicides:** Chemicals that kill fungi or moulds growing on crop plants.

**Horticulture:** Branch of Science dealing with production of vegetables, fruits and ornamental plants.

**Multiple cropping:** Growing two to four crops one after the other in a year in the same field.

**Plant breeders:** Scientists who develop new varieties of plants and seeds.

**Seedlings:** Plantlets growing out of seeds.

**Transplanting:** Process of removing seedlings from the nursery bed and planting them in the main field.

**Weed:** Undesirable plants growing in the same field as the main crop and competing for nutrients, water and sunshine with the main crop.

**Weedicide:** Chemicals, which can kill weeds.

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