

1

Crop Production and Management

Let us Learn about

- Crop and crop seasons
- Basic agricultural practices
- Food from animals



Previous Connect

Farmers grow crops in field. They grow different crops in different seasons and soils. They irrigate the fields, add fertilizers and manures to ensure good produce.

All living things require food to stay alive. You have already learnt that plants and animals are the two main sources of food. Animals are **domesticated** and raised to obtain food from them. Different types of plants give us different types of food. To fulfil our needs, each of these plants is grown on a large scale. The cultivation of plants in farms is called **farming**. The branch of science that deals with growing plants and raising livestock for human use is called **agriculture**. Agriculture is the largest occupation in our country.

CROP AND CROP SEASONS

The same kind of plants grown and cultivated at one place on a large scale are called **crop**. The product which is obtained from a crop is called **produce**. Crops can be classified either on the basis of the products obtained or on the basis of the season in which they grow.

domesticated: tame and kept as a pet or on a farm

FACT FILE

India is the world's second biggest producer and consumer of grain after China.



Crop



1

Various crops and their produce

Crops	Crop plants	Products they provide
Cereal or Grain crops	Rice, Wheat, Barley, Maize, Oats	Carbohydrates
Pulses or Legume crops	Peas, Beans, Gram, Soya bean, Lentil	Proteins
Fibre crops	Cotton, Hemp, Jute	Fibres for cloth
Oilseed crops	Mustard, Sunflower, Groundnut, Coconut	Oils
Tuber crops	Potato, Tapioca	Starch
Sugar crops	Beetroot, Sugar cane	Carbohydrates in the form of sugar
Root crops	Carrot, Sweet potato	Starch, Vitamins
Beverage crops	Tea, Coffee	Beverages

FACT FILE

The Green Revolution contributed to increase food production. The White Revolution led to the availability of good quality milk.

Classification of crops on the basis of the seasons in which they grow

In India, there are two main crop seasons –

Rabi crops: The crops which are sown in the month of October/November and harvested in March/April are called **rabi crops**. These crops are also called **winter crops**. Wheat, mustard, barley, gram, pea are some of the examples of rabi crops. These crops do not depend on monsoon rains because the water requirement of these crops is less.

Kharif crops: The crops which are sown in June/July and harvested in September/October are called **kharif crops**. These crops are also called **summer crops**. Rice (paddy), maize, pulses, cotton, groundnuts are some examples of kharif crops. These crops require plenty of water and largely depend on monsoon rains.



Rabi crop



Kharif crop



Time to Answer

Fill in the blanks.

- _____ crops depend on monsoon rains for growth.
- _____ is the largest occupation in our country.
- Rice and wheat are examples of _____.
- Mustard is a source of _____.
- Beetroot is a source of _____.

BASIC AGRICULTURAL PRACTICES

The various activities that a farmer performs to produce a good crop are called **agricultural practices**.



The basic agricultural practices are listed below:

- Preparation of soil
- Sowing of seeds
- Manuring
- Irrigation
- Protection of crops
- Harvesting
- Storage

Preparation of soil

The first step for growing a crop is to prepare the soil. The preparation of soil involves **ploughing** and **levelling**. The soil needs to be loosened so that the roots can penetrate deep into the soil and can breathe easily. The process of loosening and turning the soil is called ploughing, or tilling. **Plough**, **hoe** and **cultivator**, driven by tractors, are used for ploughing. Its advantages are:

- It helps to bring the nutrient-rich soil from the lower layers to the top, making it available to plants.
- It also helps to retain moisture for a longer period.

After ploughing the soil, some big pieces of soil, called crumbs, remain in the soil which may cause difficulty in sowing seeds. To break the big pieces of soil, levelling of soil is required. It is done with the help of a wooden or iron plank.

Agricultural implements

Farmers need some special tools to grow a good crop. The tools used by farmers during farming are called **agricultural implements**. Some of the implements used in ploughing are as follows:

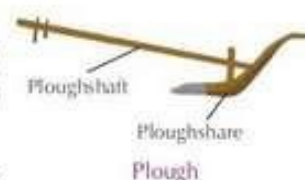
Plough— It is made of wood and iron. The strong triangular iron strip is called **ploughshare** and the long wooden part of the plough is called **ploughshaft**. In earlier times, ploughs were driven by animals like bulls and horses, but nowadays ploughing is done by cultivators driven by tractors.

Hoe— A hoe consists of a long rod of wood or iron, with a broad, strong iron plate attached to one end. The bent plate acts like a blade and is useful for loosening the soil and removing weeds.

Cultivator— A cultivator is a type of farm implement used for secondary **tillage**. Its teeth (also called shanks) pierce the soil as they are dragged through it. Cultivators are driven with the help of tractors. They stir and **pulverise** the soil, either before planting or after the crop has started growing.



Farmer ploughing the field



Different implements used for loosening the soil

tillage: the process of preparing land for growing crops

pulverise: to crush soil lumps into fine powder

Sowing of seeds

The process of putting seeds in the soil is called **sowing**. To get a good crop yield, it is important to select good quality seeds (which are disease-resistant and free of infection) and sow them properly.

Selection of good quality seeds can be done by soaking seeds in water. Soaking of seeds in water before sowing also helps in softening the hard outer coating of seeds and, thus, helps in early **germination** of seeds.



Activity I



Healthy seeds settle down

To separate healthy seeds from unhealthy ones

Take a glass bowl and fill it upto three-fourth with water. Put a handful of gram seeds in it. Leave it undisturbed for about one hour. You will observe that some seeds float on water as they are hollow and light. These are unhealthy seeds. The seeds which settle down at the bottom are healthy and are good for sowing.

A farmer should keep following things in mind while sowing the seeds:

- Seeds should be sown in the proper season and in moist soil.
- Seeds should be sown at the correct depth (which varies from crop to crop). The depth of seeds matters the most. If seeds are sown too deep in the soil, then their roots will not be able to respire while those sown close to the surface may be eaten by birds and insects.
- Seeds should be sown at proper spacing to prevent overcrowding of plants. This also allows each plant to get enough water, nutrients and sunlight.



Manual method of sowing seeds

Methods of sowing

Seeds can be sown in two ways.

- (a) Manual method or broadcasting:** This method involves scattering of seeds by hand. Seeds like maize, bajra are sown by this method. Seeds sown by this method are distributed unevenly in the field, leading to wastage and reduced crop yield.
- (b) Mechanical method:** In this method, seeds are sown using a **seed drill**. The drill makes furrows in the soil and the seeds fall into the furrows at proper depths and proper distances. Sowing seeds by seed drill is faster and saves labour.



Seed drill



germination: to cause (a seed) to grow

Crop transplantation

In some crops, like rice (paddy), and vegetables, like chillies and tomatoes, the seeds are sown in a small area called **nursery**. When they germinate into small seedlings, these are transferred to the main field. This is called **crop transplantation**.



Transplantation

Advantages of crop transplantation

- It helps farmers to select only healthy seedlings.
- It is easy to keep proper spacing between the plants.
- Crop yield increases as unhealthy plants are sorted out.

Manuring

When crops are grown continuously in the same field, the soil becomes deficient in some nutrients. This reduces the crop yield. This problem can be overcome by adding manures and fertilisers in the soil. The process of adding manure to the soil is called **manuring**.

- **Manure** is an organic substance obtained from the decomposition of plant and animal wastes. Manures are added to the soil before or after the seeds are sown. It is rich in **humus**. It improves soil texture, increases its water holding capacity, makes it porous and increases the soil-friendly microbes in it. Manure is mainly of three types as shown in the flow chart below:



- **Fertiliser** is a chemical compound that is manufactured in factories. It provides specific nutrients like phosphorus, potassium, etc. to crops. For example, **urea** supplies nitrogen, **CAN** (calcium ammonium nitrate) supplies calcium and nitrogen, **diammonium phosphate** supplies nitrogen and phosphorus. They are easy to use, transport and can be easily stored. They are also easily soluble in water and hence easily absorbed by plants and utilised immediately.

humus: material formed by decomposition of plant and animal matter

Differences between manure and fertiliser

Manure	Fertiliser
<ul style="list-style-type: none"> Manure is a natural substance. It is not nutrient-specific and is required in large quantities. It is rich in humus. It is not readily soluble in water and is slowly absorbed by plants. 	<ul style="list-style-type: none"> Fertiliser is a chemical substance. It is nutrient-specific and required in very small quantities. It does not provide any humus to the soil. It is soluble in water and readily absorbed by plants.



Activity 2

To grow seedlings with manure and fertiliser

Take three equal-sized vessels. Fill the first vessel with soil upto half mark and add a little amount of manure in it. (You can use any type of manure). Mark it as 'A'. Now, take the second vessel and again fill it with soil upto half mark and add a little amount of urea in it. You can also use any other fertilizer. Mark it as 'B'. Similarly, fill the third vessel only with soil and mark it as 'C'. Now plant a seedling and pour equal amount of water in each of them. Keep them at a safe place where sunlight is available in plenty. Water them regularly and observe them for 10–15 days. Note down the height of each plant after 15 days and fill in the table given below:



Height of plant in vessel A = _____ cm

Height of plant in vessel B = _____ cm

Height of plant in vessel C = _____ cm

Despite the advantages, fertilisers also have some disadvantages. They reduce soil fertility if used regularly. They also cause water and soil pollution.

As an alternative to fertilisers, nutrients in the soil can be replenished naturally by practising various methods as:

- **Field fallow**– Leaving the land free for one or more seasons to regain nutrients
- **Crop rotation**– It is the practice of growing a series of different types of crops in the same area in sequential seasons. This practice is generally used for the replenishment of nitrogen by growing a leguminous crop, that adds nitrogen and organic matter to the soil in sequence with cereals and other crops.
- **Mixed cropping**– Sometimes two or more crops are grown together in the same field. This method is called **multiple** or **mixed cropping**. The crops to be grown together are chosen in such a way that the waste materials from one crop help in the growth of the other.





Time to Answer

Fill in the blanks.

- Seed drill is a device used for sowing _____.
- The preparation of soil involves ploughing and _____.
- _____ is rich in humus while fertilisers are not.
- To get a good crop yield, it is important to select _____ of good quality.
- _____ manure consists of green plants which are ploughed along with the soil.
- Broadcasting is the method of scattering seeds by _____.

Irrigation

The process of watering crops in the field at different intervals is called **irrigation**. In India, farmers cannot depend on rain for irrigation because it may not rain when the crops require water. To get a good produce, crops need to be irrigated properly. The time and frequency of irrigation differs from crop to crop and soil to soil. The various sources of irrigation are wells, ponds, tube wells, lakes, rivers, canals and dams.

Methods of Irrigation

Traditional methods: Irrigation can be done by **traditional methods** like *dhekli*, *rahat*, moat and chain pump. In these methods, water available in wells and canals is distributed in the fields by using cattle or human labour. These methods are cheaper as they do not require the use of electricity but are less efficient.



Moat



Chain pump



Dhekli



Rahat

Traditional methods of irrigation

Modern methods: These methods of irrigation are more efficient than the traditional methods. In these methods, water is equally distributed to all parts of the field. These methods are generally aimed at conserving water. **Some of the most commonly used modern methods of irrigation are as follows:**

- **Sprinkler system** – This is one of the most commonly used methods of irrigation. It involves installing vertical pipes at equal distances with rotating nozzles on the top. The pipes are connected to the main pipeline, that supplies water under pressure to be spread on the crop through the rotating nozzles. This method is recommended for



Sprinkler system



Drip system

sandy soil and uneven land where sufficient water is not available at every part of the field.

- **Drip system** – This involves providing water drop by drop near the roots of the plants. This system helps plants to get regular water supply and involves no wastage of water.

Advantages of irrigation

- Irrigation helps seeds to germinate.
- It is also essential for absorption of nutrients by plants from the soil and for the elongation of roots.
- Water also protects crops from frost and dry hot air currents.

Disadvantages of excessive irrigation

It is important to provide plants with right amount of water at the right time. Excessive water can cause the following problems:

- **Waterlogging** occurs in the soil that inhibits germination of seeds.
- Roots do not hold the crop upright.
- Plants which cannot resist strong winds fall down.

Crop protection

For protection of crops, farmers use several methods, some of which are as follows:

Scarecrows

These are the images of human forms placed in fields that can keep birds away from a field.



Scarecrow

Use of pesticides

After replenishing the soil with adequate nutrients, it is important to protect the crop from damage by pests (insects and rodents), microbes and fungus. For this purpose, chemical substances known as **pesticides** are used. Pesticides are poisonous in nature; they kill the pests but do not harm the plants. Pesticides include **insecticides** (kill insects), **fungicides** (destroy fungi) and **rodenticides** (kill rats and mice). Some commonly used pesticides are DDT, BHC, malathion, gamaxene, heptachlor, methyl parathion, etc.



Using pesticides in fields

Weeding

Some unwanted plants grow along with crop plants and compete with the crops for water, minerals and sunlight. These plants are called **weeds**. *Amaranthus (chaulai)* and wild oat (*javi*) are some examples of weeds.



Khurpi

They need to be removed at regular intervals otherwise crop yield is badly affected. The process of removing weeds from a field is called **weeding**. It can be done by the following methods:



waterlogging: filled or soaked with water

- (i) **Mechanical method:** In this method, weeds are removed by hand or by using implements like a *khurpi* or a **harrow**.
- (ii) **Chemical method:** These methods involve removal of weeds by using chemicals called weedicides. 2,4-D and MCPA are examples of **weedicides**.
- (iii) **Biological method:** In this method, natural enemies of weeds like insects are released in the field which feed on weeds and destroy them. For example, cochineal insect is used to eliminate prickly pear.

Harvesting

When a crop is fully grown, the next stage is to cut it down from the fields. The process of cutting and gathering of crops is called **harvesting**. It can be done manually with a sickle or by machine called harvester. The harvested grain is then stored. In case of cereal crops, harvesting is followed by **threshing**.

Threshing

The process of separating grain seeds from the **chaff** in the harvested crop is called **threshing**. It can be done manually or by a machine called **thresher**. A machine called 'combine' is used for both harvesting and threshing.

Winnowing

Farmers that have small land holdings separate grain from chaff by dropping the harvested crop on the ground from a height by the use of blowing wind. This is called **winnowing**. The chaff which is lighter is blown away upto some distance whereas the heavier grains fall directly to the ground below.

Storage

The harvested food grain needs to be stored very carefully to protect it from insects, pests, rodents and fungal diseases. As moisture promotes the growth of bacteria and fungi, so the grain is dried in the sun and then stored in gunny bags and silos.

Types of Storage

There are two types of storage – dry storage and cold storage.

Dry storage is a method used for storing non-**perishable** food materials like food grains. On **small scale** or at **domestic level**, grain is stored in jute bags or metallic bins. On **large scale** or at **commercial level**, grain is stored in gunny bags, silos or granaries.

Cold storage is a method used for storage of perishable food materials. Since these food materials have a very short shelf life, they are stored at low temperature. Vegetables and fruits are stored by this method.

chaff: the seed coverings and other debris
perishable: likely to spoil or decay quickly

Crop Production and Management



Harrow



Manual threshing (beating)



Mechanical threshing



Combine



Winnowing

FACT FILE

Some stocks of grains must be maintained to compensate for the shortage due to failure of monsoon in a particular year. This is known as a buffer stock.





Dry storage of food grains



Food granaries



Cold storage for fruits and vegetables



Time to Answer

Answer the following.

- Define irrigation.
- What is winnowing?
- What is weeding?
- What type of food is stored in cold storage?
- Name any two pesticides.



Meat



Fish



Milk



Honey



Egg

Foods obtained from animals

FOOD FROM ANIMALS

Animals are also an important source of food. For example,

- Cows, buffaloes give us **milk**.
- Ducks and hens are a source of **eggs**.
- Honeybees give us **honey**.
- Fish, goat, hen are sources of **meat**.

Food obtained from animals is also important for health. Milk, eggs and fish are rich sources of proteins. Meat is rich in fats and proteins. Cod liver oil, which is obtained from fish, is rich in vitamin D.

Animal husbandry

The domestication of animals on a large scale is called **animal husbandry**.

- All domestic and useful animals constitute **livestock**. Livestock are domesticated animals raised in an agricultural setting to produce commodities such as food, fibre and labour. Livestock are generally raised for profit.
- The practice of raising birds like chicken, ducks and fowls is called **poultry farming**.



- Honeybees are reared for honey. The rearing of honeybees on a large scale is called **apiculture**.
- The breeding, hatching and rearing of fish under controlled conditions on a large scale is called **pisciculture**.



Activity 3

Make a list of food items obtained from different animals and complete the table given below:

Food item	Animal from which it is obtained



Time to Answer

Write True or False for the following statements.

- Pisciculture is the rearing of honeybees.
- Cod liver oil is rich in Vitamin-D.
- Ducks and cows give us milk.
- Goat and hen are sources of meat.



Key Terms

- Agriculture:** the science or practice of farming and rearing of animals
- Crop:** one kind of plants grown on a large piece of land
- Agricultural practices:** the various activities that a farmer performs to produce a good crop

Ploughing:	the process of loosening and turning the soil
Manure:	the substance that is added to the soil for growing healthy crops
Irrigation:	the process of watering crops in the field at different intervals
Weeds:	unwanted plants that grow along with crops
Weeding:	the process of removing weeds from a field
Harvesting:	the process of cutting and gathering crops
Threshing:	the process of separating grains from the chaff
Winnowing:	the process of separating grains from chaff by blowing air
Animal husbandry:	rearing of animals on a large scale



New I Know

- The plants that are grown in large quantities are called crop plants.
- There are two kinds of crops based on the season of sowing – rabi crops and kharif crops.
- Rabi crops are sown in October/November and harvested in March/April.
- Kharif crops are sown in June/July and harvested in September/October.
- The tools used for agricultural practices are called agricultural implements.
- Various tasks performed by a farmer to produce a good crop are called agricultural practices.
- The basic agricultural practices are – preparation of soil, manuring, sowing, irrigation, weeding, harvesting and storage.
- Preparation of soil involves ploughing and levelling of soil.
- Good quality seeds should be sown at appropriate distance and proper depth in the field to obtain a good yield.
- Nutrients in the soil are replenished by adding manures and fertilisers.
- Crop rotation is the natural method of replenishing nutrients in the soil.
- Weeds should be removed as they compete with the crop for nutrients, space and sunlight.
- Harvesting can be done manually (using a sickle) or by using a machine (harvester).
- In case of cereal crops, harvesting is followed by threshing.
- The harvested grain needs to be stored to protect it from insects, pests and rodents.
- Animals are also an important source of food for humans. They provide us with milk, eggs, honey, fish, etc.





Let us Practise

1. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

- (a) Tuber crops are a source of
- | | | | |
|----------------|--------------------------|---------------|--------------------------|
| (i) starch | <input type="checkbox"/> | (ii) sugar | <input type="checkbox"/> |
| (iii) proteins | <input type="checkbox"/> | (iv) vitamins | <input type="checkbox"/> |
- (b) The advantage of ploughing is/are
- | | |
|---|--------------------------|
| (i) it allows the penetration of roots | <input type="checkbox"/> |
| (ii) it helps in proper aeration of roots | <input type="checkbox"/> |
| (iii) it eradicates weeds | <input type="checkbox"/> |
| (iv) all of these | <input type="checkbox"/> |
- (c) Which of the following crops is transplanted?
- | | | | |
|------------|--------------------------|--------------|--------------------------|
| (i) Rice | <input type="checkbox"/> | (ii) Wheat | <input type="checkbox"/> |
| (iii) Gram | <input type="checkbox"/> | (iv) Brinjal | <input type="checkbox"/> |
- (d) Which of the following is an example of a weed?
- | | | | |
|------------------|--------------------------|-------------------|--------------------------|
| (i) Peas | <input type="checkbox"/> | (ii) Mint | <input type="checkbox"/> |
| (iii) Amaranthus | <input type="checkbox"/> | (iv) All of these | <input type="checkbox"/> |
- (e) The process of removing chaff from grains is called
- | | | | |
|------------------|--------------------------|---------------|--------------------------|
| (i) threshing | <input type="checkbox"/> | (ii) weeding | <input type="checkbox"/> |
| (iii) harvesting | <input type="checkbox"/> | (iv) manuring | <input type="checkbox"/> |
- (f) An example of a traditional method of irrigation is
- | | | | |
|-----------------------|--------------------------|-----------------------|--------------------------|
| (i) <i>dhekli</i> | <input type="checkbox"/> | (ii) sprinkler system | <input type="checkbox"/> |
| (iii) drip irrigation | <input type="checkbox"/> | (iv) all of these | <input type="checkbox"/> |

2. Fill in the blanks.

- (a) **Moat** : _____ :: Furrow irrigation : Modern method of irrigation
- (b) _____ : Rich in humus :: Fertiliser : Not rich in humus
- (c) Fibre crop : Cotton :: _____ : Mustard
- (d) _____ : Scattering seeds by hand :: Seed drill : Sowing seeds using vertical pipes

(e) Weeding : *Khurpi* :: _____ : Harvester

(f) Ducks : _____ :: Honeybees : Honey

3. Match the following.

- | | |
|---------------------------|----------------------------------|
| (a) Drip irrigation | (i) Broadcasting |
| (b) Fertiliser | (ii) Pea |
| (c) Sowing seeds by hands | (iii) Summer season crop |
| (d) Groundnut | (iv) Modern method of irrigation |
| (e) Kharif crop | (v) Urea |
| (f) Ploughing | (vi) Loosening the soil |

Answers	
(a)	
(b)	
(c)	
(d)	
(e)	
(f)	

4. Rewrite the statements correctly by changing the underlined words.

- The first step in crop production is sowing of seeds.
- Crop rotation reduces soil fertility.
- To save time, sowing of seeds is done with a cultivator.
- The field is levelled with help of a hoe.
- Sprinkler system is a traditional method of irrigation.
- Compost is prepared from farmyard wastes.
- Breeding, hatching and rearing of honeybees on a large scale is called pisciculture.

5. Study the pictures given alongside and answer the questions.

- (a) Name the agricultural implement. What is it used for?



- (b) Which system of irrigation does the picture show? In which kind of soil is this system of irrigation very useful?



- (c) Which method of sowing seeds is shown here? List one disadvantage of this method.



6. Very short answer type questions.

- Name any two winter crops.
- Which machine is used for the separation of grain from stalks and husks?
- Name the organic substance obtained from the decomposition of plant and animal waste.
- What is the process of putting seeds in soil called?
- Name any two methods of weeding.



7. Short answer type questions.

- (a) What is threshing?
- (b) Define harvesting.
- (c) What is livestock?
- (d) Define crop transplantation.
- (e) Why should weeds be removed from a field?

8. Long answer type questions.

- (a) What are the advantages of ploughing?
- (b) What is the proper way of sowing seeds?
- (c) Why is it important to irrigate crops?
- (d) What are the disadvantages of excessive irrigation of crops in a field?
- (e) What is animal husbandry? How is it useful?

9. Distinguish between

- (a) Kharif crops and rabi crops
- (b) Manure and fertiliser
- (c) Dry storage and cold storage
- (d) Drip irrigation and sprinkler irrigation
- (e) Crop rotation and multiple cropping



HOTS (Higher Order Thinking Skills)

- 1. Why is it necessary to water crops frequently in summers?
- 2. Rice cannot be grown in winters. Is it true? If so, why?

PROJECT WORK

- Collect some useful plants from a garden or part of field. Dry them in the folds of an old newspaper. Paste them on drawing sheets or your scrapbook. Write their names and uses.
- Take two pots filled with different soil and sow seeds of any plant in both the pots. Observe the growth in both pots and write a report on it.
- Find out more about pisciculture from books and Internet. Prepare a report on it.

SCIENCE EXCURSION

Plan a visit to a nearby field. Study all the agricultural implements used by farmers. Find out the crops grown and identify them as rabi or kharif crop. Find out the manure/fertiliser used by the farmers.

BRAIN TWISTER

Solve the crossword puzzle with the help of given clues:

Down

1. Rearing of animals on a large scale
2. An implement used to harvest crop
3. A natural substance used to replenish nutrients in the soil
4. Chemical used to destroy weeds
5. An example of a fertiliser

Across

6. The process of watering crops
7. Winter season crops
8. The process of putting seeds into the soil
9. Rearing of honeybees on a large scale
10. An implement used to sow seeds
11. An implement used for ploughing



Value-Based Questions

1. When Vishu went to his native village, he saw his grandfather ploughing the field using plough pulled by oxen. He told his grandfather to adopt new techniques for farming. Why? What values did Vishu exhibit?
2. Ramlal is a farmer. He always collects dry leaves and remains of harvested crops. Why do you think he does so? What values does Ramlal exhibit?

[Hint: He believes in recycling]



Life Skill

Fruits and vegetables that we eat contain traces of pesticides, which are harmful to our health. Remember the following while eating raw fruits and vegetables.

- ☐ Wash raw fruits before eating them.
- ☐ Vegetables should also be washed thoroughly before cutting them. The chances of contamination is more in leafy vegetables.



Web Reference

<http://gardening.about.com/od/gardenprimer/qt/WaterTransplant.htm>



GURU GOBIND SINGH PUBLIC SCHOOL

BIOLOGY ASSIGNMENT

CLASS=8

(Study materials= Irrigation, Method of irrigation, Traditional method and modern method, Weeding, Harvesting, Threshing, Storage of grains, Method of storage of grains, Dry storage and cold storage, Poultry farming, Apiculture, Pisciculture)

Irrigation: Supply of water in the field to grow crops.

Traditional method: Rahat, Moat, Chain pump



Moat



Chain pump



Dhekli



Rahat

Modern method:

1. Sprinkler:



2. Drip irrigation:



Weeding: Removing unwanted plants



Harvesting: Cuttings and gathering the crops.



Threshing: Loosing the edible part of the grains.



Winnowing: Separating grains from the chaff.



Storage of grains: Proper storage of grains is important to protect against moisture, microorganisms and insects.

Methods of storage of grains:

1. Dry storage:



2. cold storage:



Poultry farming: Rearing the birds to get eggs and meat.



Apiculture:



Pisciculture:



ASSIGNMENT

(Before doing the assignment read study materials)

1. What is harvesting?
2. Define threshing.
3. Explain modern method of irrigation.
4. Why should weeds be removed from the field?
5. Why is it important to irrigate field?
6. What is animal husbandry? How is it useful?
7. What are the differences between crop rotation and mixed cropping?
8. Why is it necessary to water crops frequently in summer season?
9. Draw traditional methods of irrigation.
10. Project: Collect different types of leaves from your garden. Keep in newspapers, after one week paste in your biology notebook.

Ranjana Bharti