

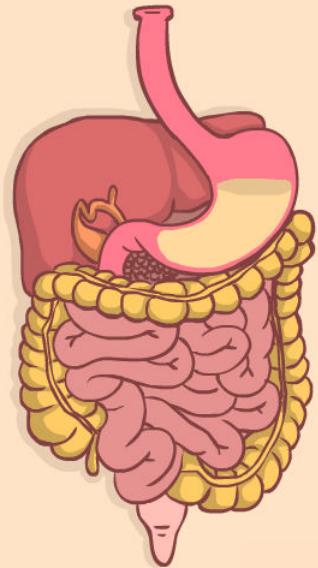
Crop Production And Management

- **Introduction**
- **Agricultural Practices**

INTRODUCTION

Growth and Sustenance

All organisms Require Food for Energy.

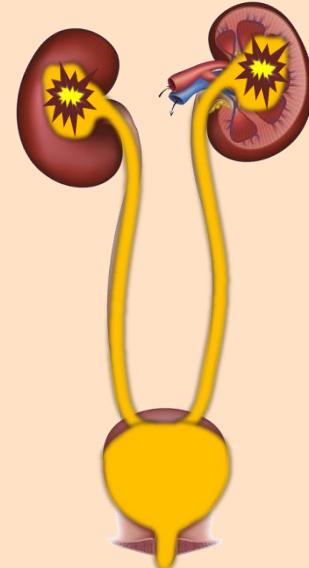


Digestion

for growth and sustenance:



Respiration



Excretion

INTRODUCTION

Plants can prepare their own food by the process of **Photosynthesis**.

While some organisms Depend On Other Organisms For Their Food.

All animals including man



INTRODUCTION

The human population is Continuously Growing.



AGRICULTURAL PRACTICES

When Plants Of The Same Kind Are Grown And Cultivated At One Place On A Large Scale, It Is Called A Crop. **CROP OF WHEAT**



AGRICULTURAL PRACTICES

You already know that crops are of
DIFFERENT TYPES like



Wheat



Rice



Ragi



**Fenugreek
(METHI)**



Vegetables



Maize



Bajra



Jowar

AGRICULTURAL PRACTICES



You already know that crops are of
DIFFERENT TYPES like



↑
Fruits

AGRICULTURAL PRACTICES



You already know that crops are of
DIFFERENT TYPES like



CHRYSANTHEMUMS



TUBEROSES



ROSES



MARIGOLD

Flowers

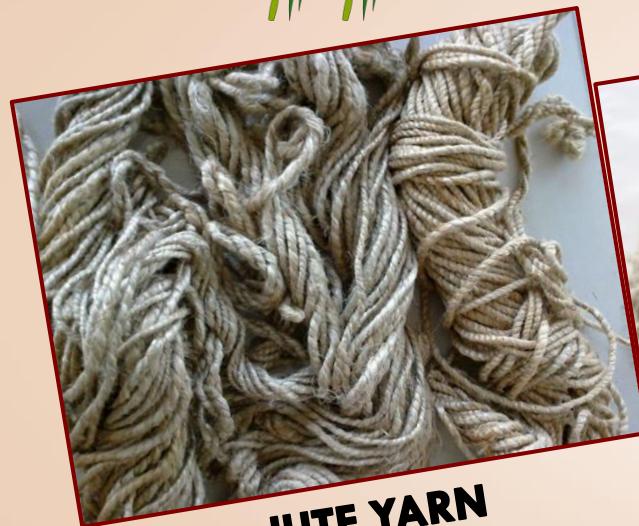
**A
S
P
A
R
A
G
U
S**



AGRICULTURAL PRACTICES



You already know that crops are of
DIFFERENT TYPES like



JUTE YARN



HEMP YARN



COTTON YARN

Fibers

AGRICULTURAL PRACTICES



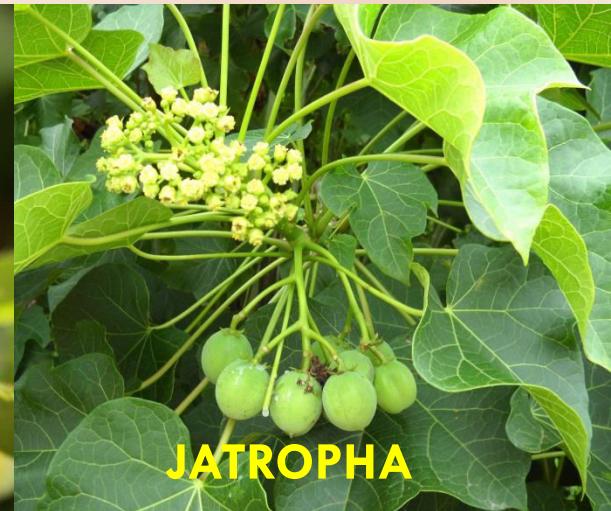
You already know that crops are of
DIFFERENT TYPES like



RAANBHENDI



PARROT TREE



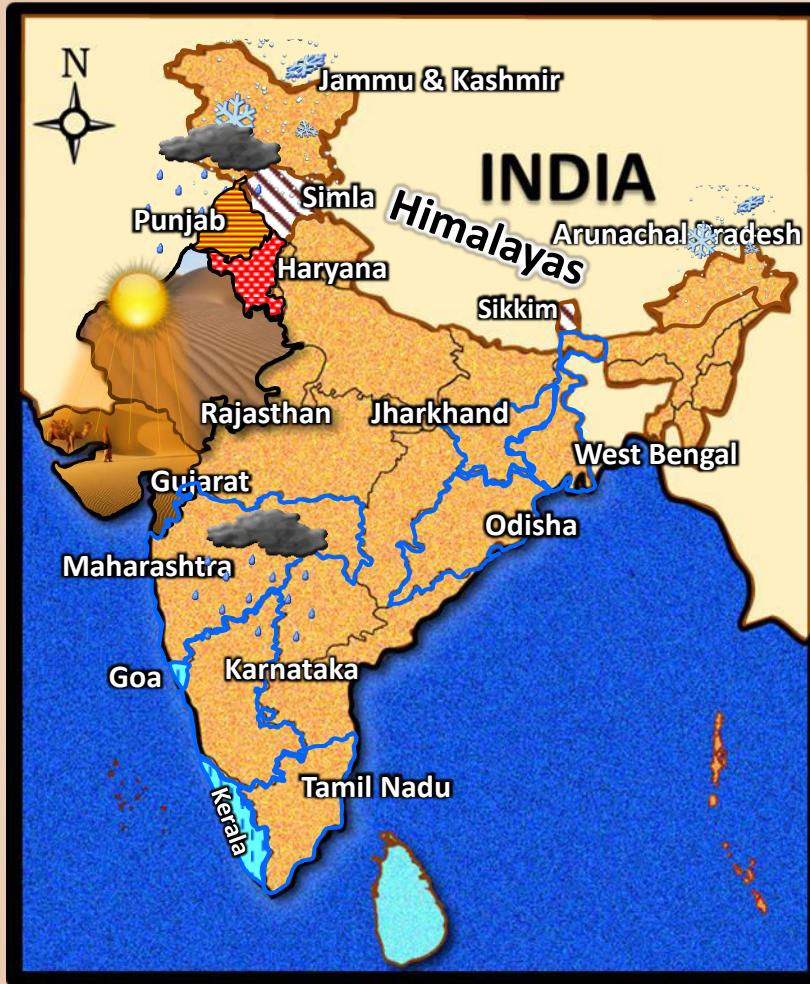
JATROPHA

Fuels

AGRICULTURAL PRACTICES

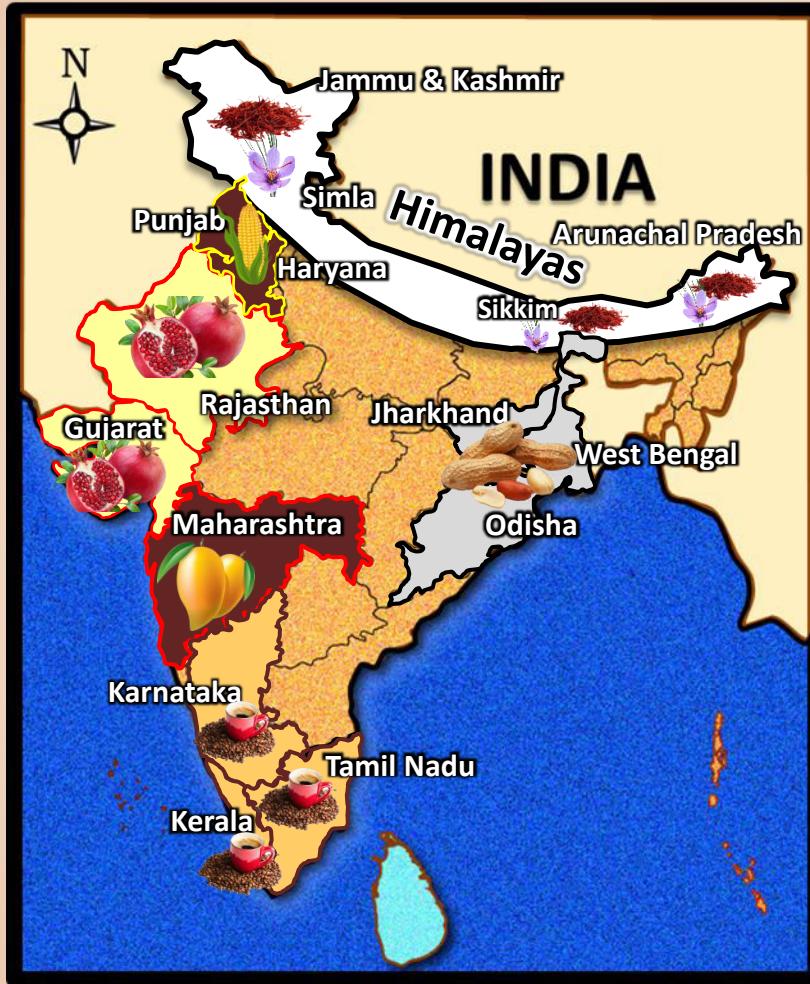
These can be classified on the basis of the season in which they grow.





India is a *Vast Country*.

**The climatic conditions like
Temperature, Humidity and
Rainfall vary from one region
to another.**



**Accordingly, there is a Rich Variety
Of Crops Grown In Different Parts Of
The Country.**

AGRICULTURAL PRACTICES



Despite this diversity, Two Broad Cropping Patterns can be identified.

(i) Kharif Crops :

The crops which are sown in The Rainy Season in India is generally From June To September, like Paddy, maize, soyabean, groundnut, cotton, etc., are kharif crops.



AGRICULTURAL PRACTICES

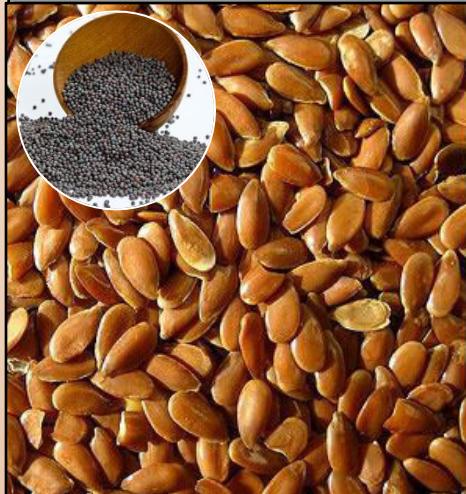


Despite this diversity, Two Broad Cropping Patterns can be identified.

(ii) Rabi Crops :

The crops grown in The Winter Season are called rabi crops. Their time period is generally From October To March, like

wheat, gram, pea, mustard, and linseed.



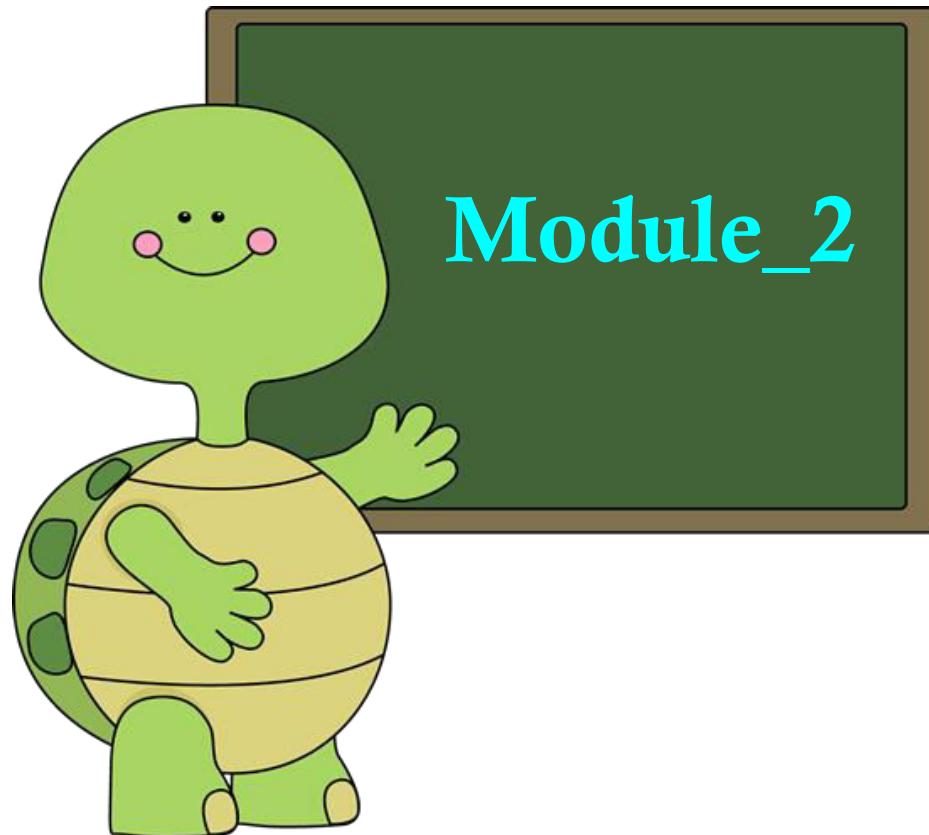
AGRICULTURAL PRACTICES



Despite this diversity, Two Broad Cropping Patterns can be identified.

Besides these, **Pulses and Vegetables** are grown **During Summer** at many places.





Crop Production And Management

- **Basic Practices of Crop Production**
- **Preparation of Soil**

BASIC PRACTICES OF CROP PRODUCTION

Cultivation **of crops involves** several activities undertaken by farmers over a period of time.



These activities or tasks are referred to as **Agricultural Practices**.

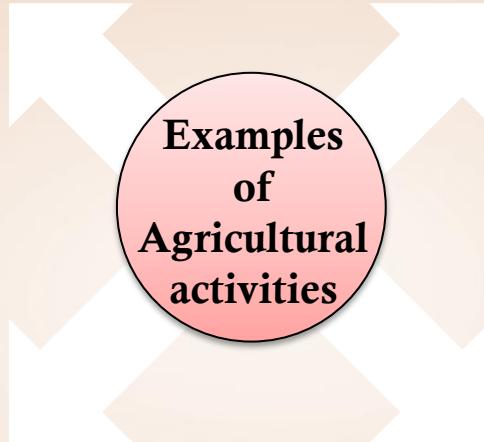
BASIC PRACTICES OF CROP PRODUCTION



Preparation of soil



Adding manure and fertilizers



Sowing

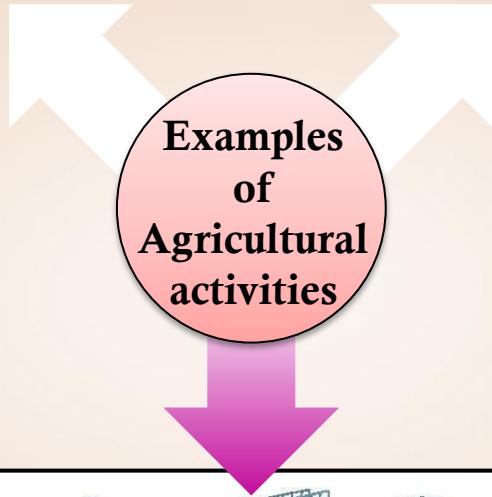


Irrigation

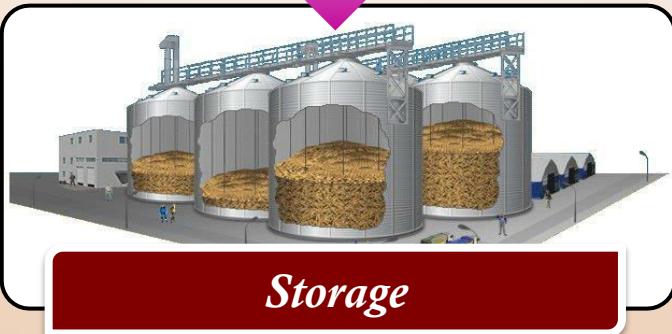
BASIC PRACTICES OF CROP PRODUCTION



Protecting from weeds



Harvesting



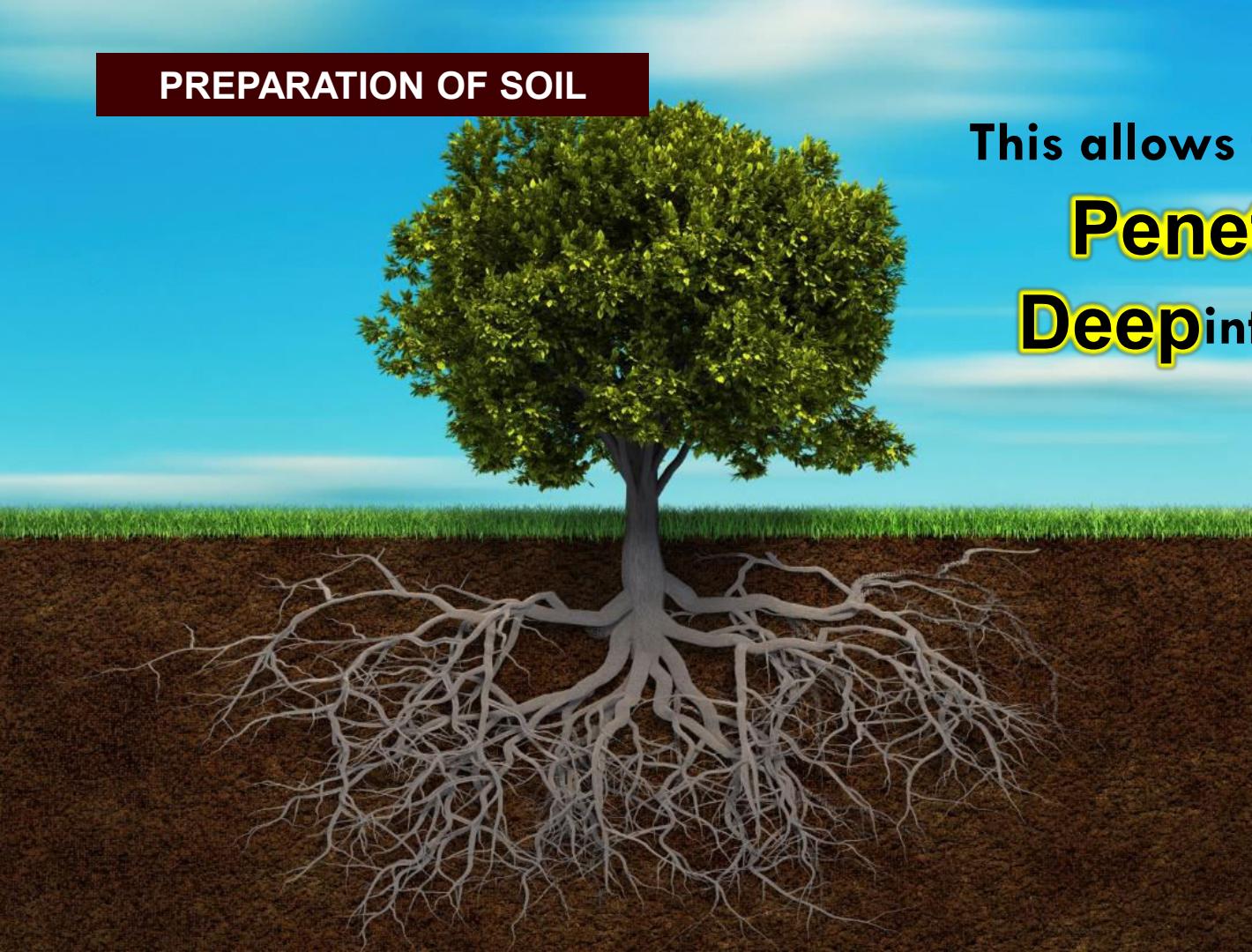
Storage

PREPARATION OF SOIL

The preparation of soil is the **First Step** before growing a crop.



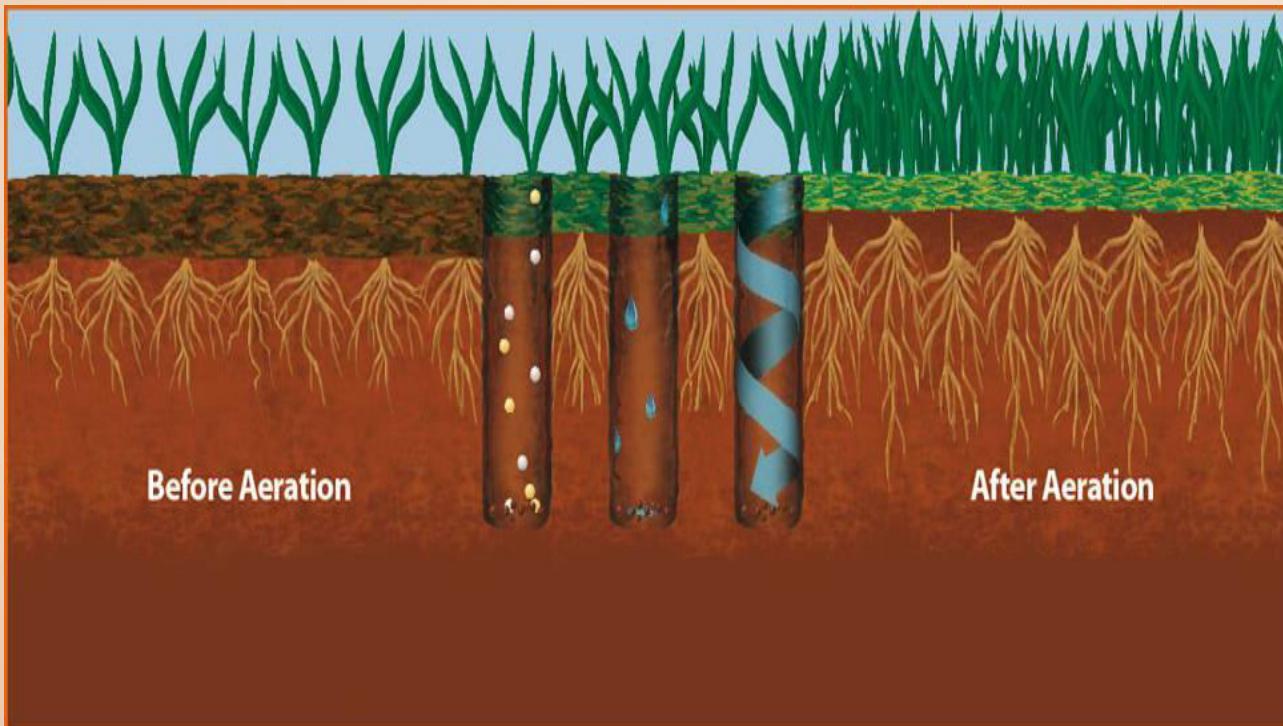
PREPARATION OF SOIL



This allows the roots to
Penetrate
Deep into the soil.

PREPARATION OF SOIL

The loose soil allows the roots to **Breathe Easily** even when they go deep into the soil.



PREPARATION OF SOIL

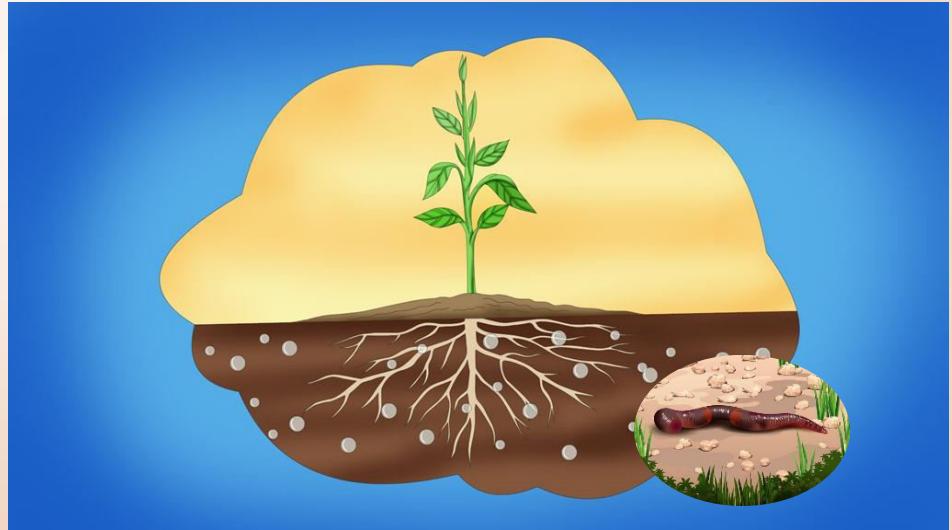
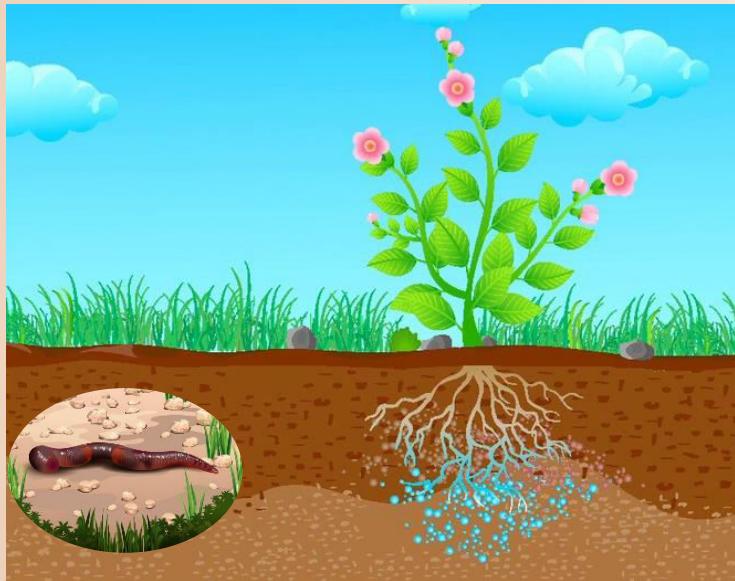
The loosened soil helps in the Growth Of Earthworms and Microbes present in the soil.

These organisms are Friends Of The Farmer since they further turn and loosen the soil and add humus to it.



PREPARATION OF SOIL

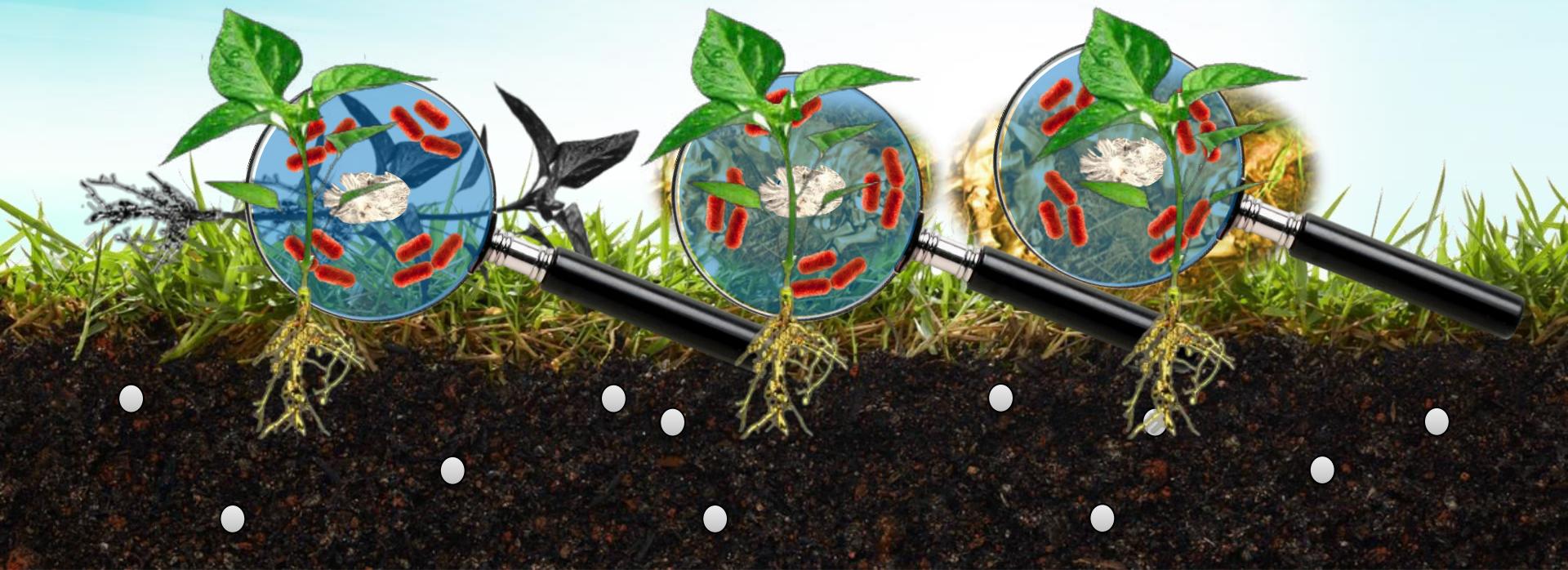
The loose soil allows the roots to **Breathe Easily** even when they go deep into the soil.



PREPARATION OF SOIL

Dethsplay Various Nutrients held in the Dead Soil Organisms are Released Back Into The Soil.

These nutrients are Again Absorbed By Plants.



PREPARATION OF SOIL

Thus, turning and loosening of soil is very important for cultivation of crops.



PREPARATION OF SOIL

The process of loosening and turning of the soil is called **Tilling** or **Ploughing**.

This is done by using a plough, that are made of **Wood** or **Iron**.





The ploughed field
may have big
Pieces Of Soil
called **Crumbs**.



The field is levelled for sowing as well as for irrigation purposes.

PREPARATION OF SOIL

The levelling of soil is done with the help of a [Leveller](#).

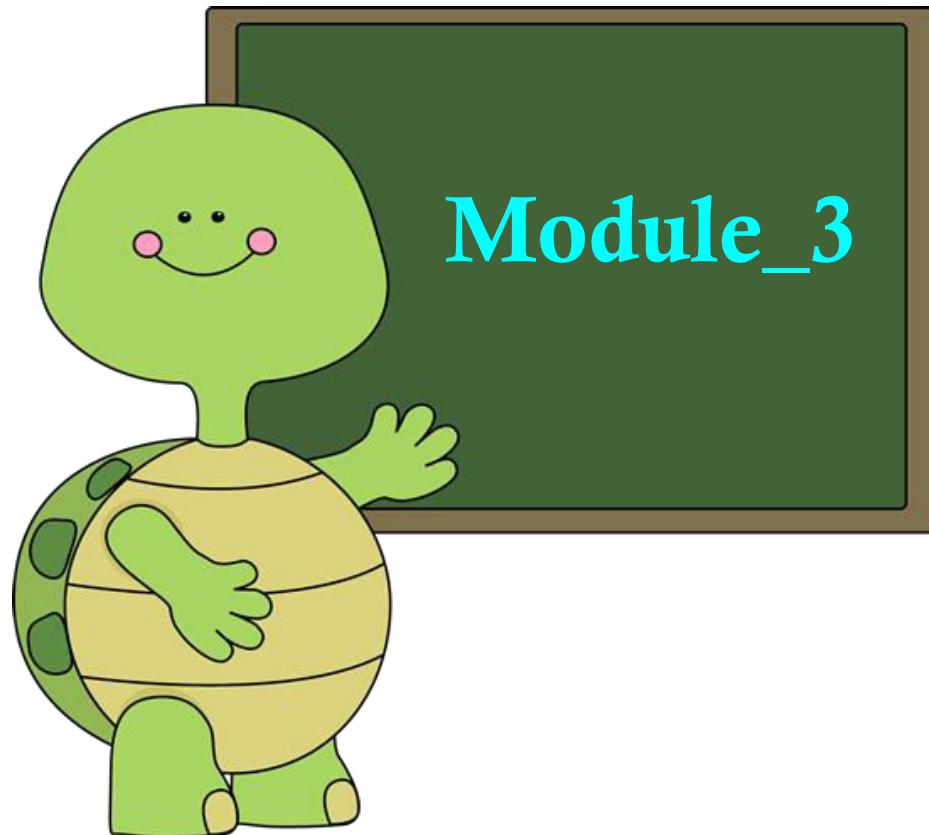


Sometimes, Manure Is Added To The Soil Before Tilling as this helps in proper mixing of manure with soil.



A photograph showing a person from the waist down, wearing a blue shirt and green pants, pouring water from a brown bucket onto a dry, brown soil surface. The water creates a small stream. In the background, there is a field with some green plants and trees under a clear sky.

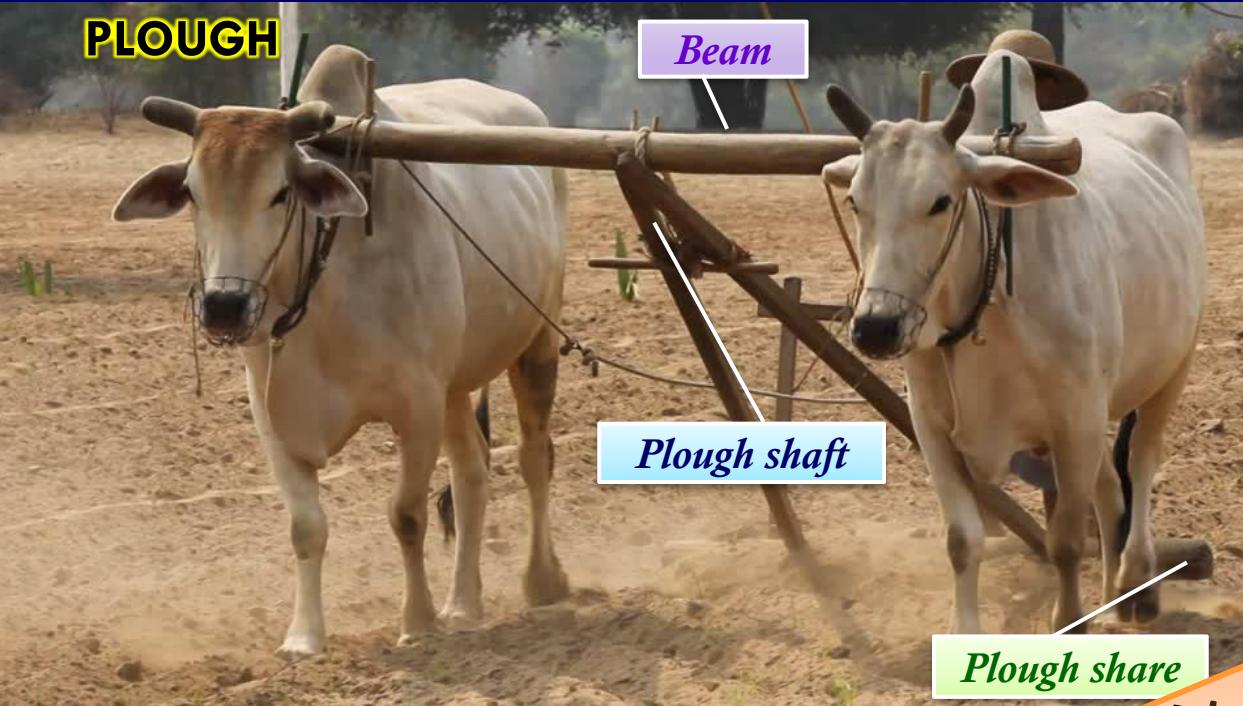
The soil is Watered Before Sowing.



Crop Production And Management

- **Agricultural Implements**
- **Sowing of Seeds**

PLOUGH



Made up of **PLOUGH** and drawn by a pair of **OXES**.

Long log of wood

Strong triangular iron strip

Handle at end of shaft, Other end attached to beam which is placed on bull's neck

USED FOR TILLING SOIL
size of grains

ADDING FERTILIZERS

REMOVING WEEDS

SCRAPING OF SOIL



Triangular
iron strip

AGRICULTURAL IMPLEMENTS

Before sowing seeds it is necessary break soil to size of grains

FOR REMOVING WEEDS

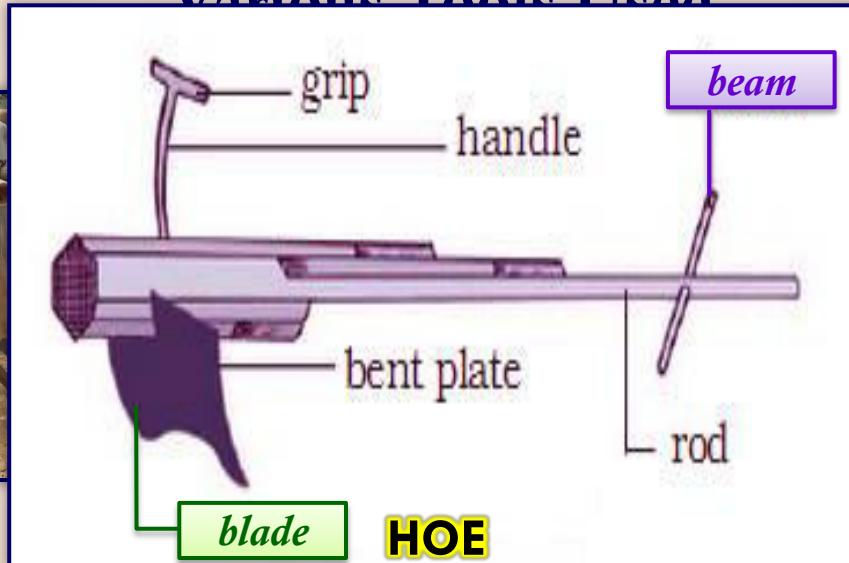
SIMPLE TOOL USED

Various Tools Used

FOR LOOSENING SOIL



PLOUGH



Long rod of wood or iron

Strong, broad and bent plate of iron works like blade

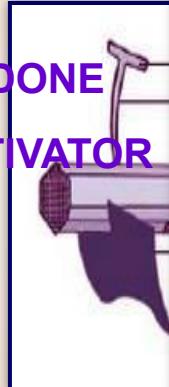


CULTIVATOR

AGRICULTURAL IMPLEMENTS

Before sowing seeds it is necessary to prepare the soil.

Various methods



PLOUGH



CULTIVATOR

Saves time and labour

SOWING OF SEEDS

Sowing is the most important part of crop production.

Farmers prefer to use **Seeds Which Give High Yield.**



SOWING OF SEEDS

An Appropriate Distance Between The Seeds is important to avoid overcrowding of plants.



SOWING OF SEEDS

This allows plants to get Sufficient Sunlight, Nutrients and Water From Soil.



SOWING OF SEEDS

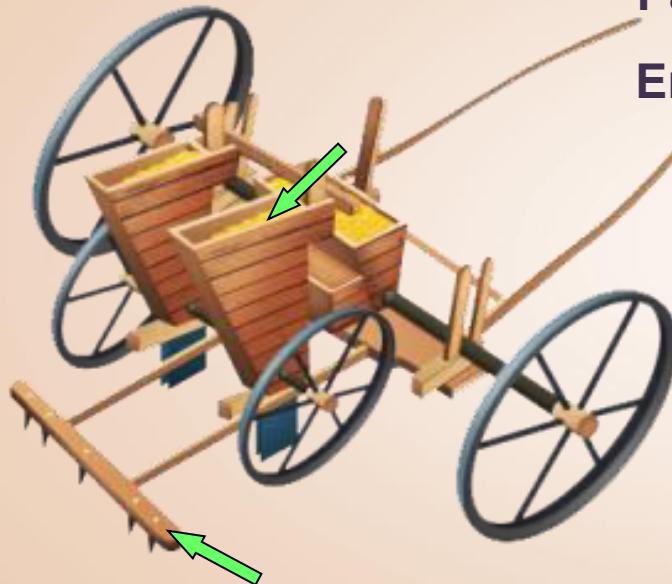
Sometimes a few plants have to be removed to prevent overcrowding.



SOWING OF SEEDS

Traditional tool for Sowing

Funnel shaped tool



Seeds are filled into a **Funnel**.

Passed through **2-3 Pipes Having Sharp Ends**.

Ends pierce into soil and Place Seeds Into Soil.



SOWING OF SEEDS

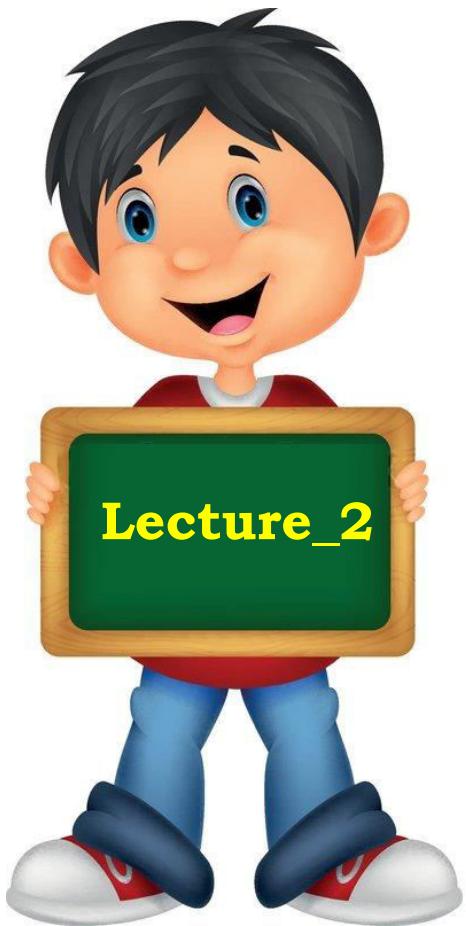
Seed drill

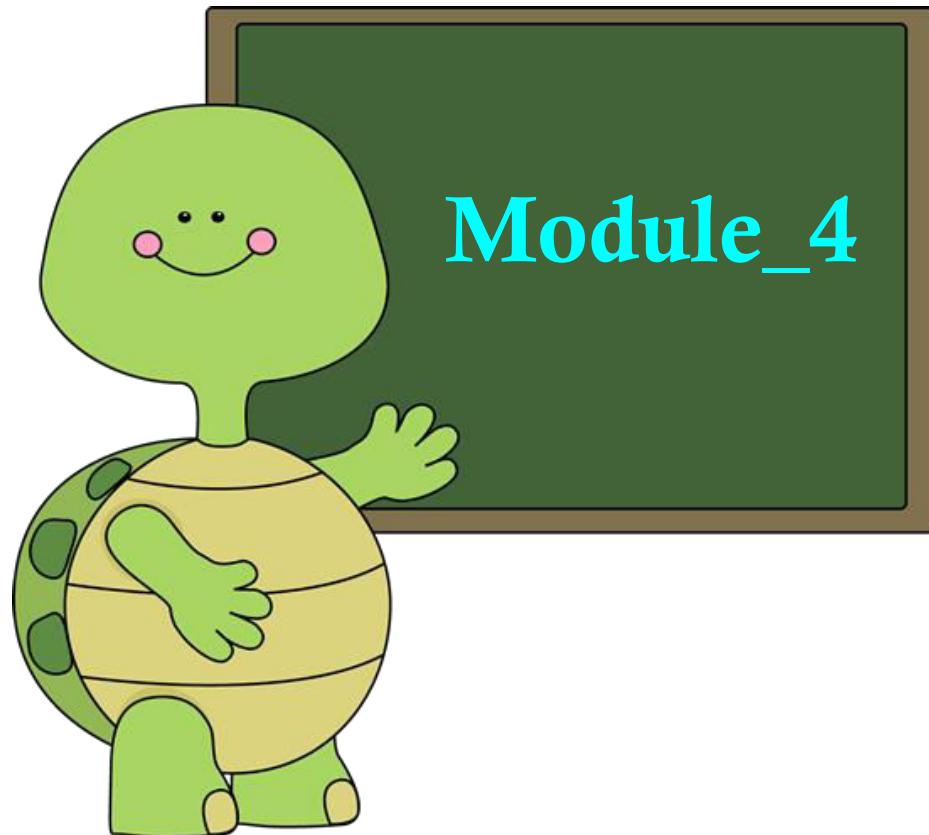
Nowadays the seed drill is used for sowing with the help of tractors.

Sowing by using a seed drill saves time and labour.
covered by the soil after
sowing.

revents damage
caused by birds.
distances and depths.







Crop Production And Management

- **Adding Manure and Fertilizers**

ADDING MANURE AND FERTILIZERS

The substances which are added to the soil in the form of nutrients for the healthy growth of plants are called **Manure** and **Fertilizers**.



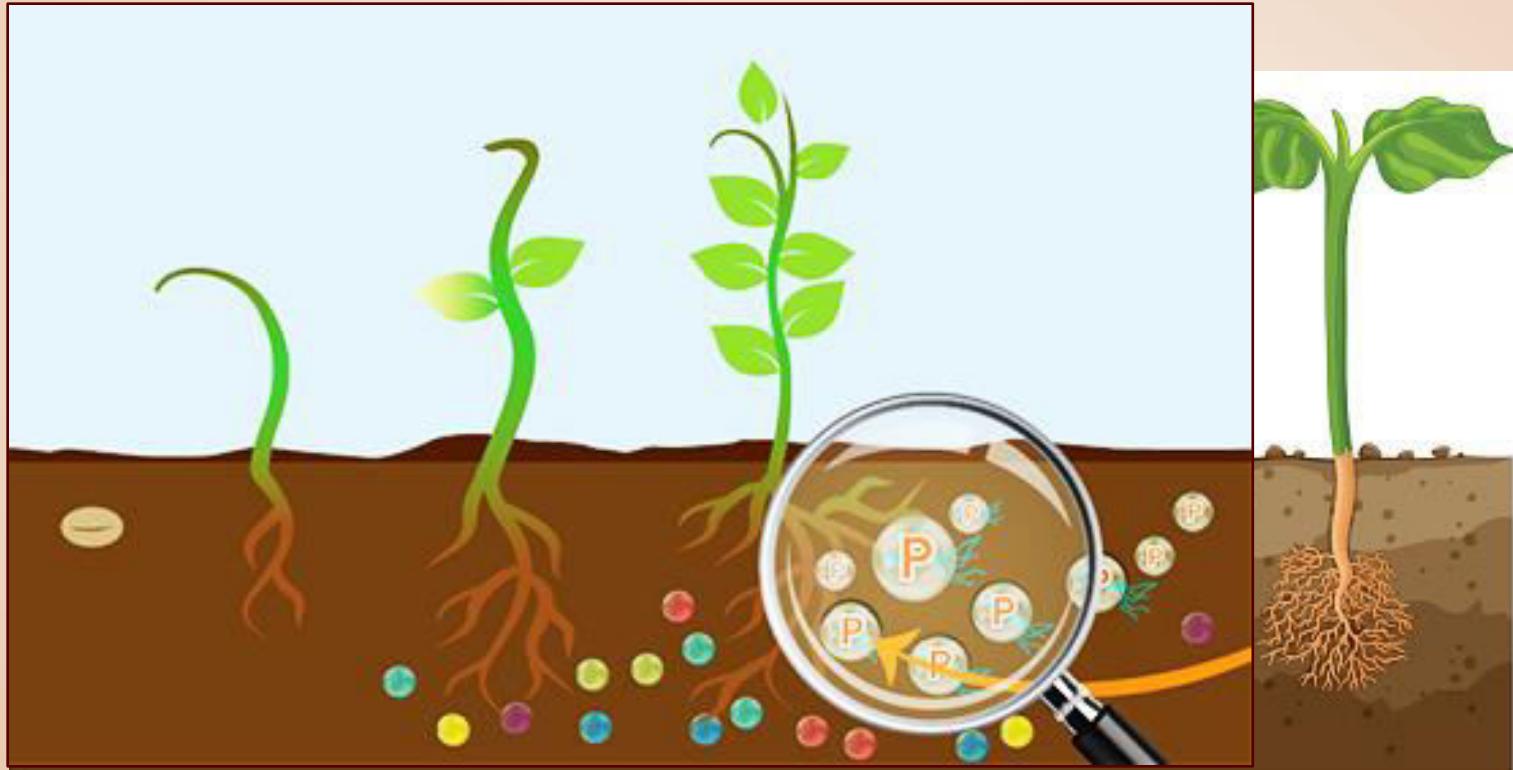
Manure



Fertilizers

ADDING MANURE AND FERTILIZERS

Soil supplies Mineral Nutrients to the crop.



ADDING MANURE AND FERTILIZERS

Improper or Insufficient Manuring
results in Weak Plants.



ADDING MANURE AND FERTILIZERS

MANURE

Manure is an Organic Substance obtained from the Decomposition of Plant or Animal Wastes.



ADDING MANURE AND FERTILIZERS

MANURE

The Decomposition is caused by Some Microorganisms.
The Decomposed Matter is used as Organic Manure.



ADDING MANURE AND FERTILIZERS

FERTILIZERS

Fertilizers are **Chemical Substances** which are Rich in a Particular Nutrient.



Urea Ammonium Sulphate,

Super Phosphate Potash NPK (Nitrogen, Phosphorus, Potassium).

ADDING MANURE AND FERTILIZERS

FERTILIZERS

The **Use Of Fertilisers** has helped farmers to get **Better Yield** of crops such as
But **Excessive Use** of fertilizers has made the soil **Less Fertile**.



ADDING MANURE AND FERTILIZERS

FERTILIZERS

Fertilizers have also become a Source Of Water Pollution.



ADDING MANURE AND FERTILIZERS

FERTILITY OF THE SOIL

Therefore, in order to **Maintain The Fertility Of The Soil**, we have to :

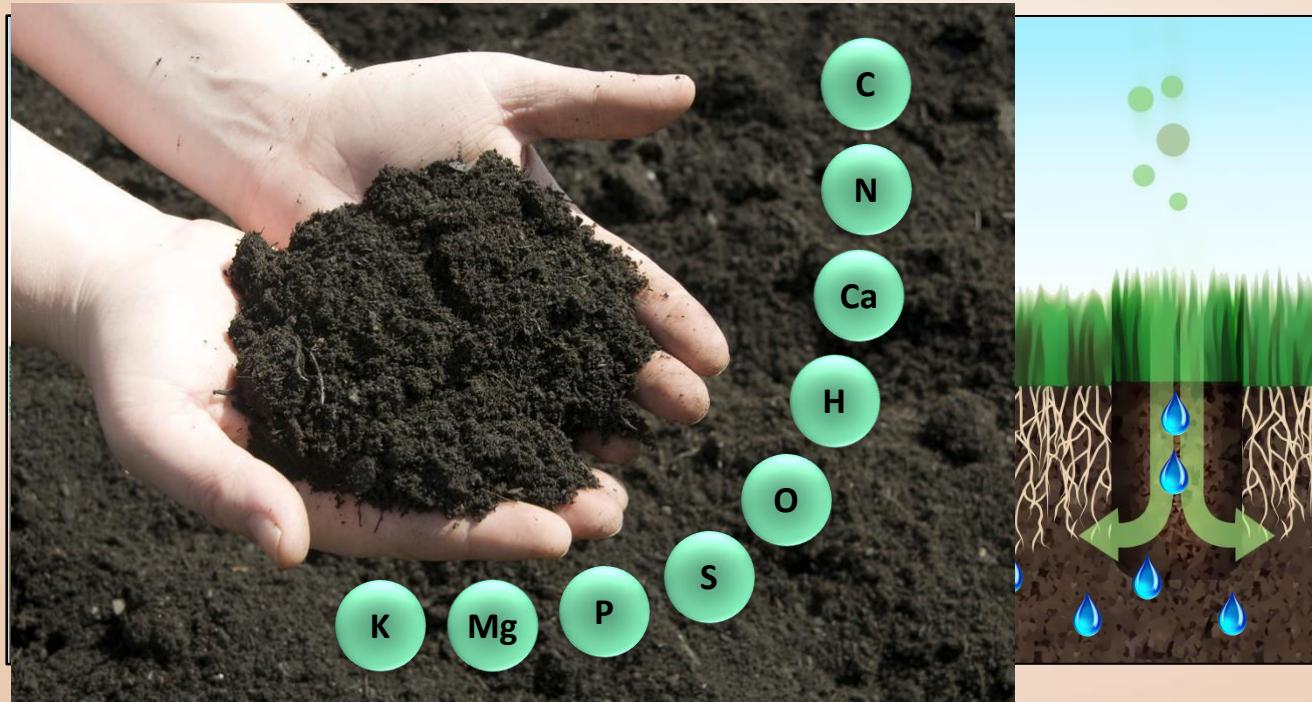
(a) Substitute fertilisers by Organic Manure



ADDING MANURE AND FERTILIZERS

FERTILITY OF THE SOIL

The use of Manure Improves Soil Texture as well as its Water Retaining Capacity. It Replenishes the soil with All The Nutrients.



ADDING MANURE AND FERTILIZERS

FERTILITY OF THE SOIL

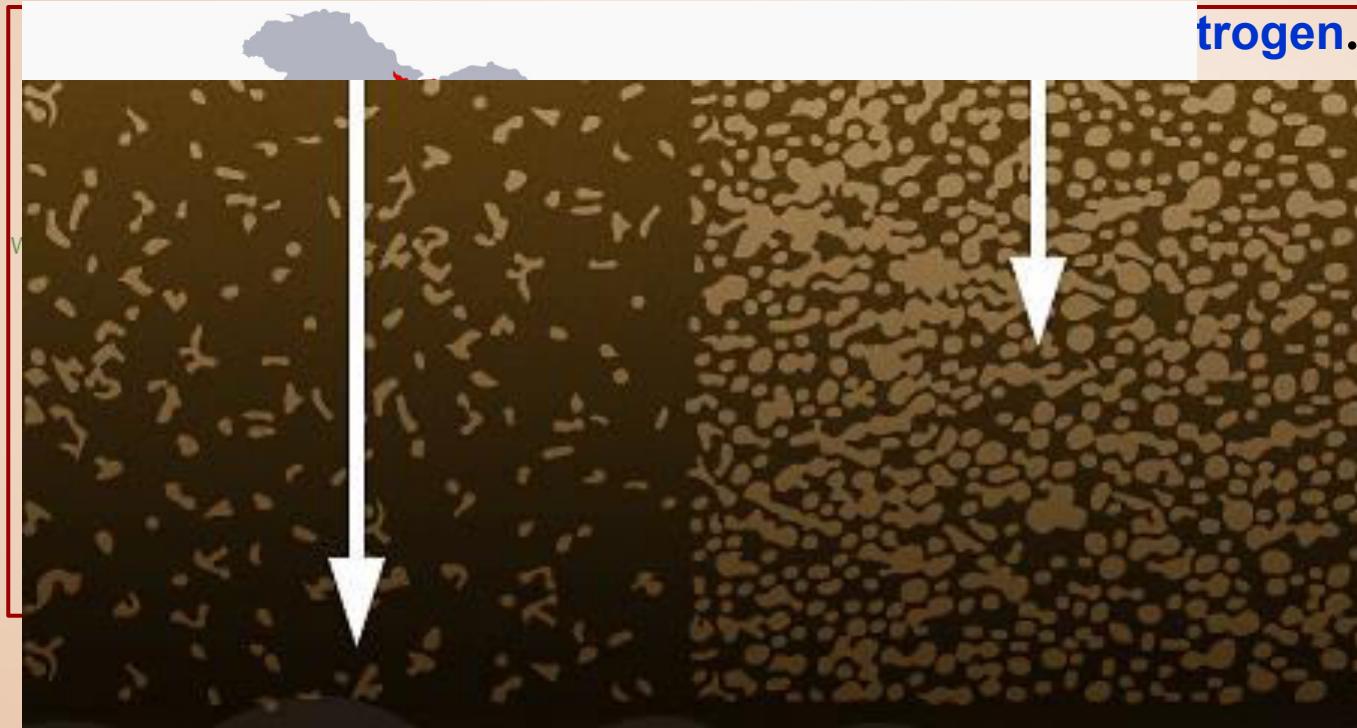
Another method of replenishing the soil with nutrients is through **Crop Rotation**. This can be done by Growing Different Crops Alternately.



ADDING MANURE AND FERTILIZERS

FERTILITY OF THE SOIL

Earlier, farmers in northern India used to
Grow Legumes As Fodder In One Season and Wheat In The Next Season.

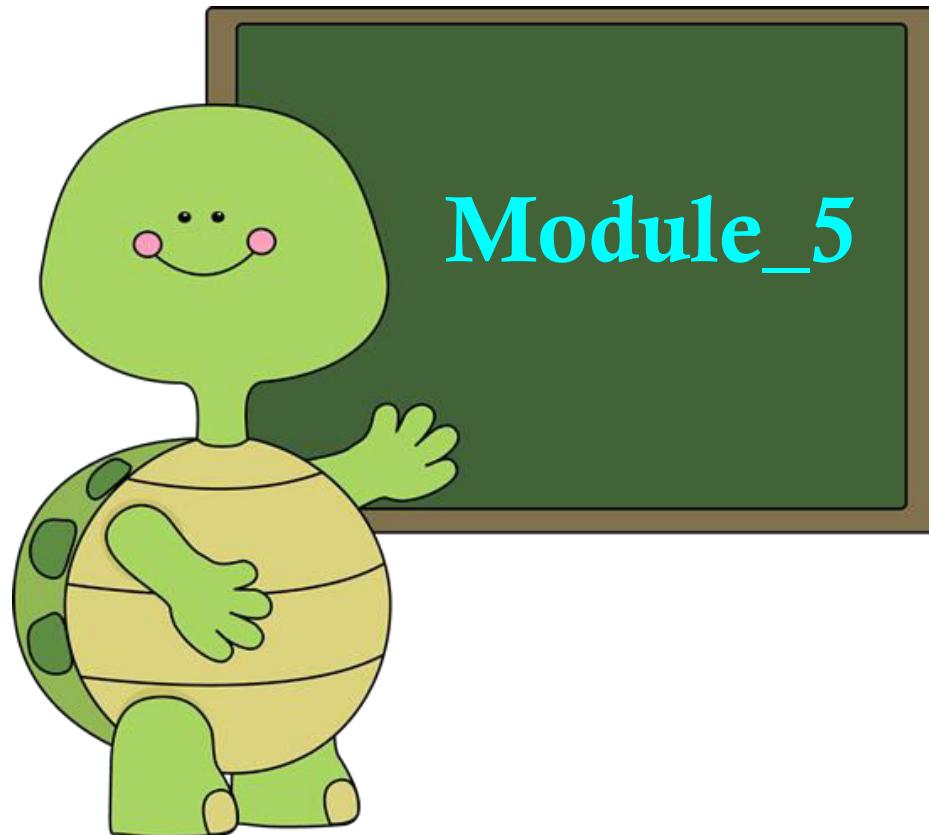


ADDING MANURE AND FERTILIZERS

FERTILITY OF THE SOIL

Rhizobium bacteria are present in the Nodules Of The Roots of Leguminous Plants. They Fix Atmospheric Nitrogen. Farmers are being Encouraged to Adopt This Practice.





Crop Production And Management

- **Differences between Fertiliser and Manure**
- **Adavantages of Manure**

DIFFERENCES BETWEEN FERTILISER AND MANURE

FERTILISER

- ❖ A fertiliser is an inorganic salt.



Fertilizers

MANURE

- ❖ Manure is a natural substance obtained by the decomposition of cattle dung, human waste and plant residues.

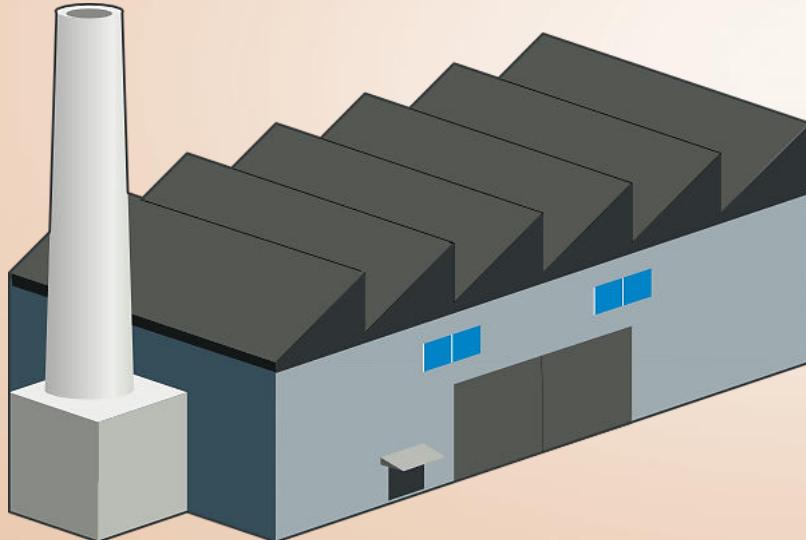


Manure

DIFFERENCES BETWEEN FERTILISER AND MANURE

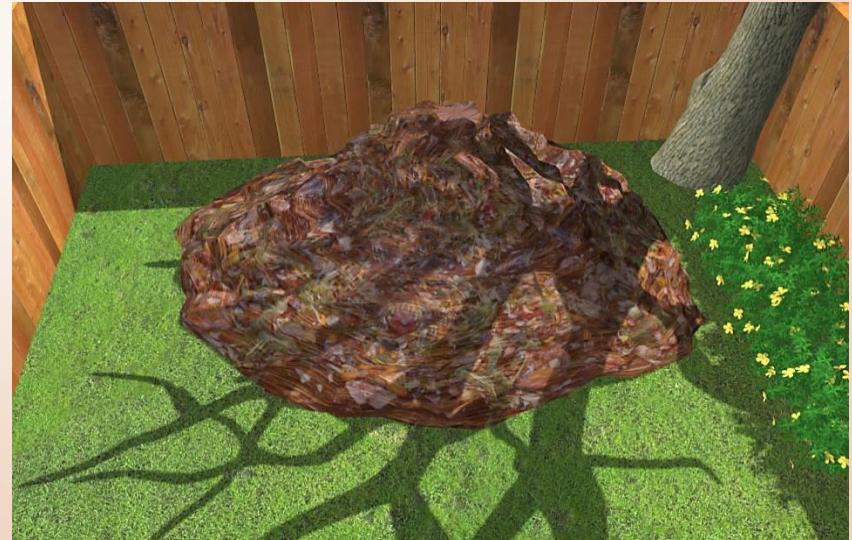
FERTILISER

- ❖ A fertiliser is prepared in factories.



MANURE

- ❖ Manure can be prepared in the fields.



DIFFERENCES BETWEEN FERTILISER AND MANURE

FERTILISER

- ❖ Fertilisers are very rich in plant nutrients like nitrogen, phosphorus and potassium.



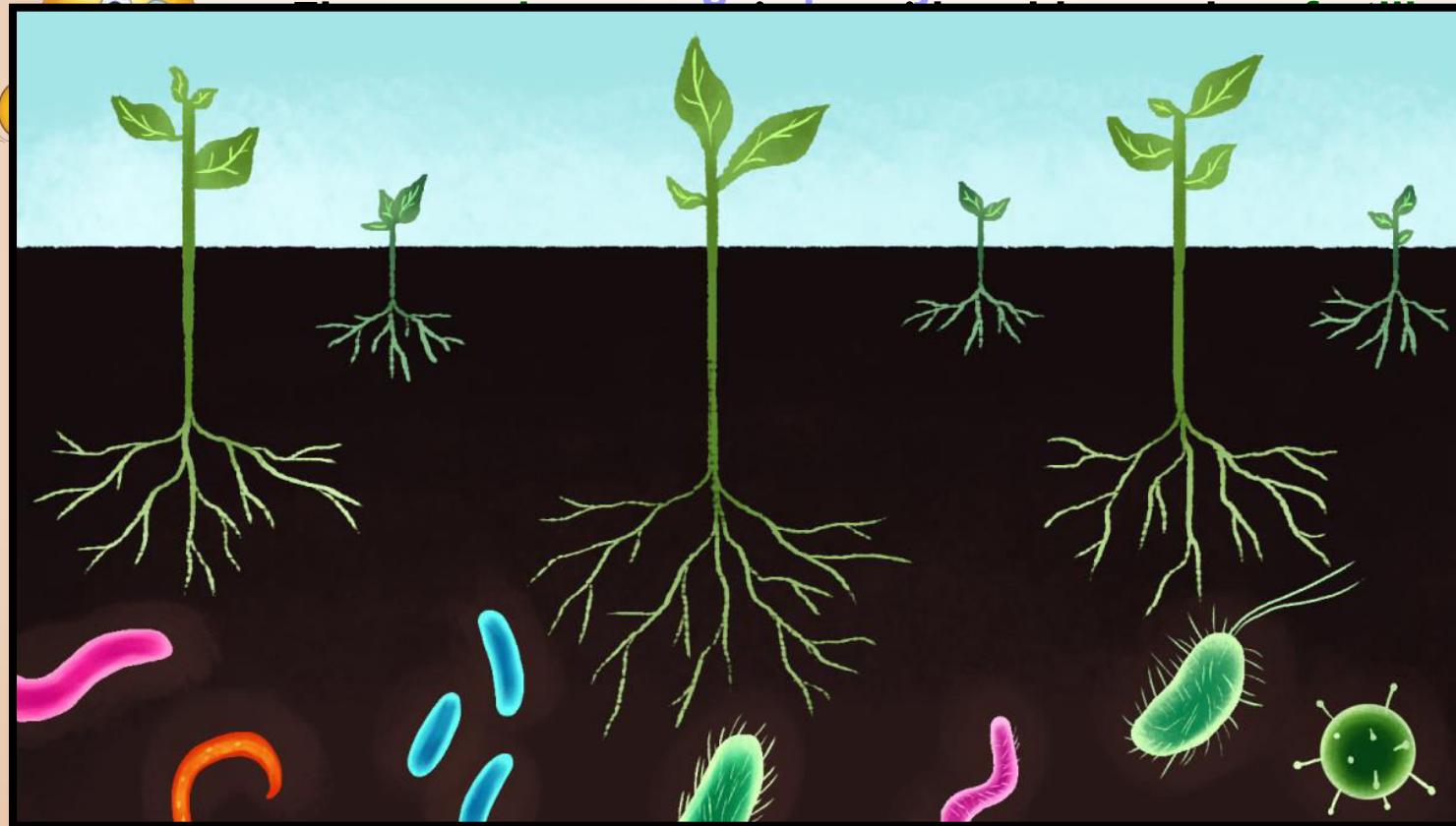
MANURE

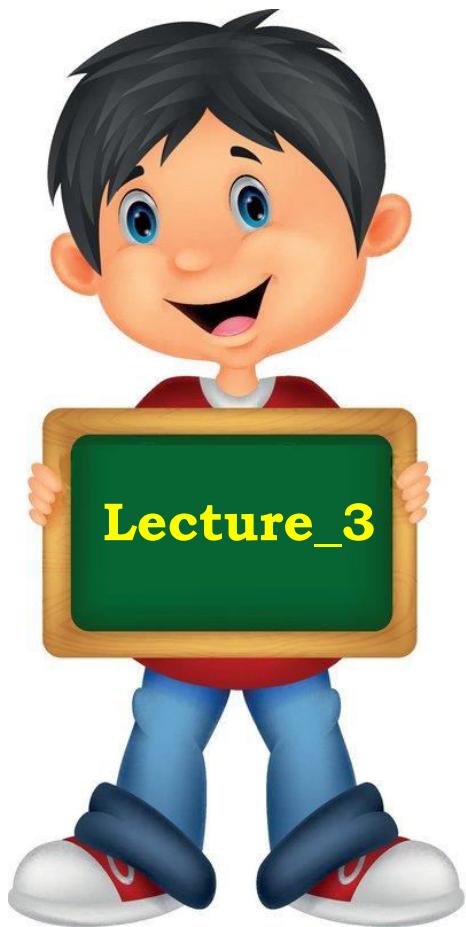
- ❖ Manure is relatively less rich in plant nutrients.

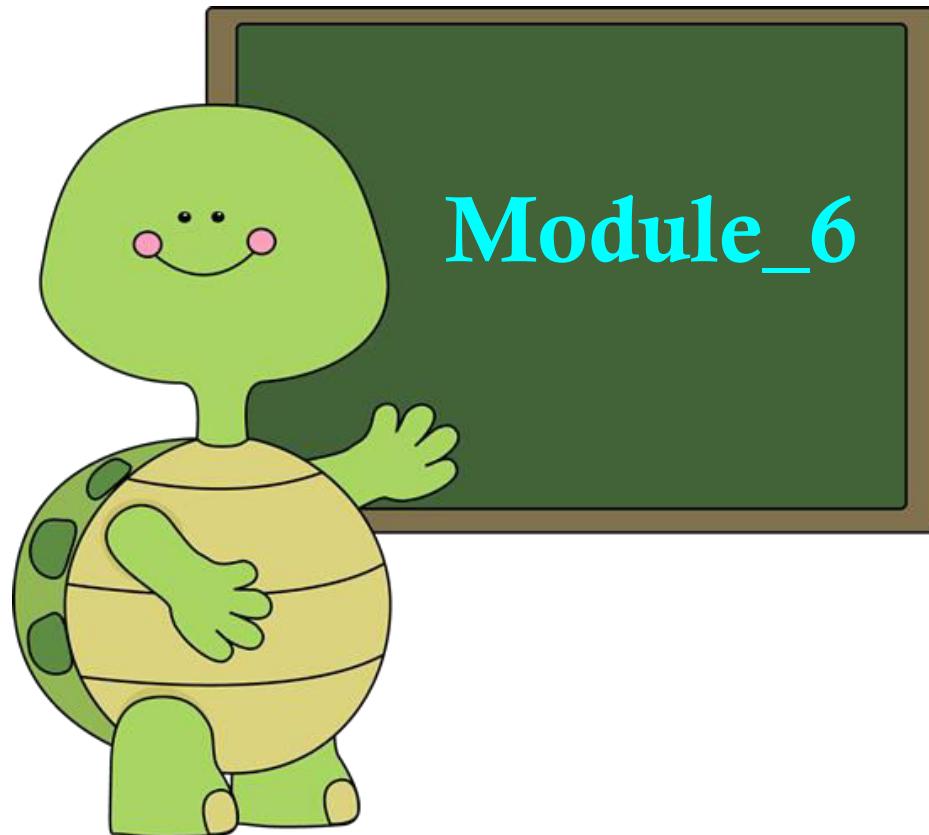


ADVANTAGES OF MANURE

It makes the Soil Porous Due To Which Exchange Of Gases Becomes Easy.
It increases the Water holding capacity of the soil.







Crop Production And Management

- **Irrigation**

IRRIGATION



All living beings
Need Water to live.

IRRIGATION



1.



2.



3.



4.



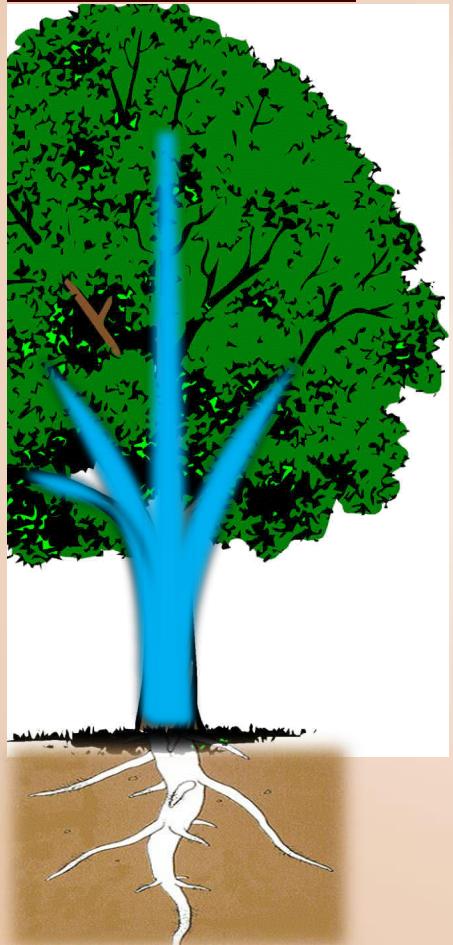
5.



6.

**Water is important for Proper Growth
And Development Of Flowers, Fruits
and Seeds Of Plants.**

IRRIGATION



Water Is Absorbed by the Plant Roots.

IRRIGATION



Along with Water Mineral nutrients and Fertilisers

are also absorbed.

Nutrients dissolved in water get Transported
To Each Part of the plant.



IRRIGATION

Water is essential because germination of seeds Does Not Take Place Under Dry Conditions.



IRRIGATION

Water also Protects The Crop from both Frost And Hot Air Currents.

To Maintain The Moisture Of The Soil for healthy crop growth fields have to be



IRRIGATION

The **Time And Frequency Of Irrigation** varies from crop to crop, soil to soil and season to season.

Morning

DEFINITE INTERVALS

Evening



SOURCES OF IRRIGATION



The sources of irrigation are

Tu|Canal's



TRADITIONAL METHODS OF IRRIGATION

Cattle Or Human Labour is used in these methods. So these methods are cheaper, but Less Efficient.



Water stored in wells and canals is Lifted Up By Cattle or Human Power for taking it to the fields.

TRADITIONAL METHODS OF IRRIGATION

Diesel, Biogas, Electricity and Solar Energy is used to run these pumps.



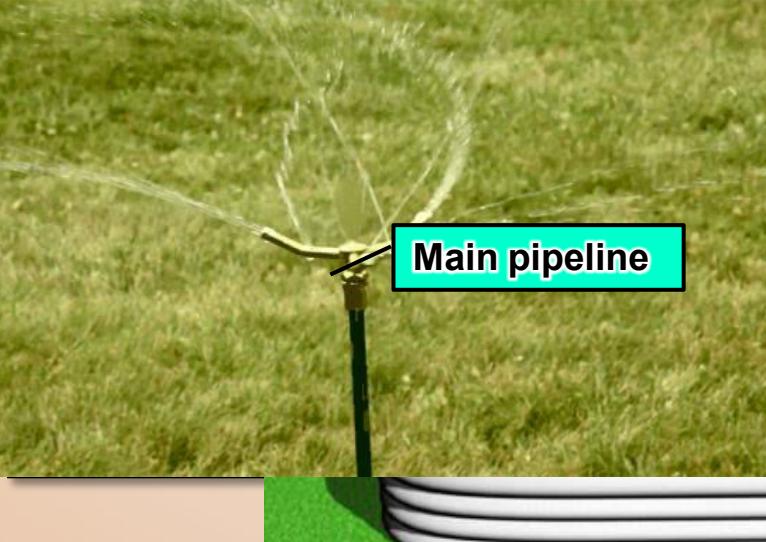
MODERN METHODS OF IRRIGATION

SPRINKLER SYSTEM

This system is more useful on the **Uneven Land** where sufficient water is not available.



joined to the main



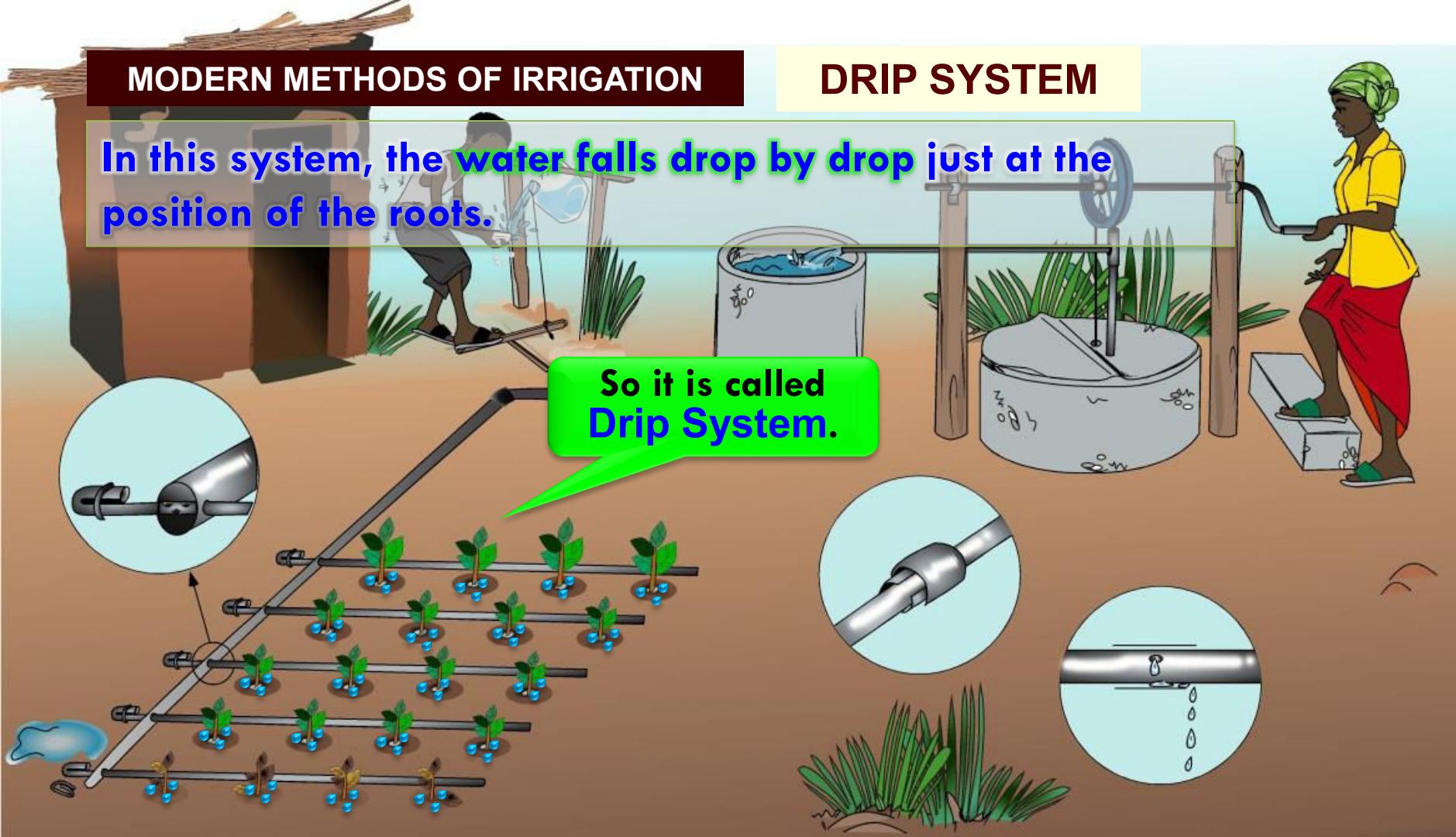
pressure with the help

MODERN METHODS OF IRRIGATION

DRIP SYSTEM

In this system, the water falls drop by drop just at the position of the roots.

So it is called
Drip System.



MODERN METHODS OF IRRIGATION

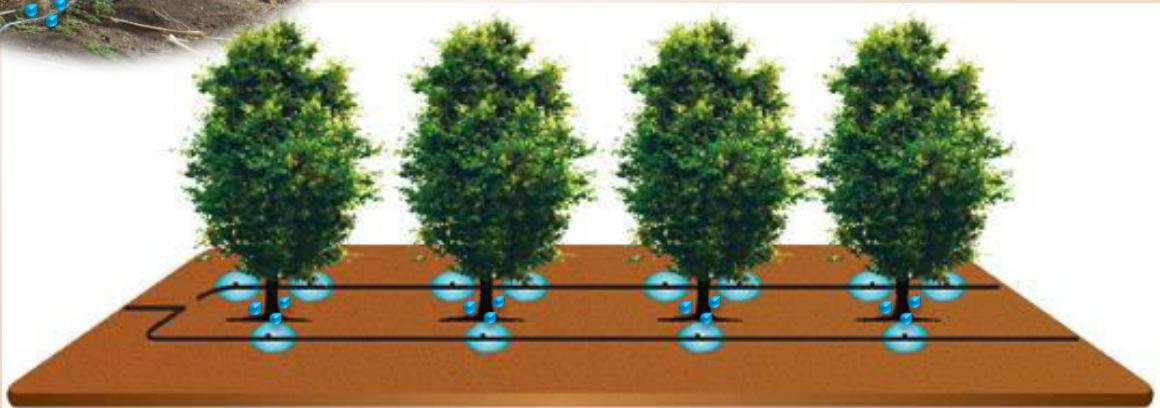
DRIP SYSTEM

It is the Best Technique for Watering Fruit plants, Gardens and Trees.



The system provides water to plants Drop By Drop.

Water is Not Wasted at all.

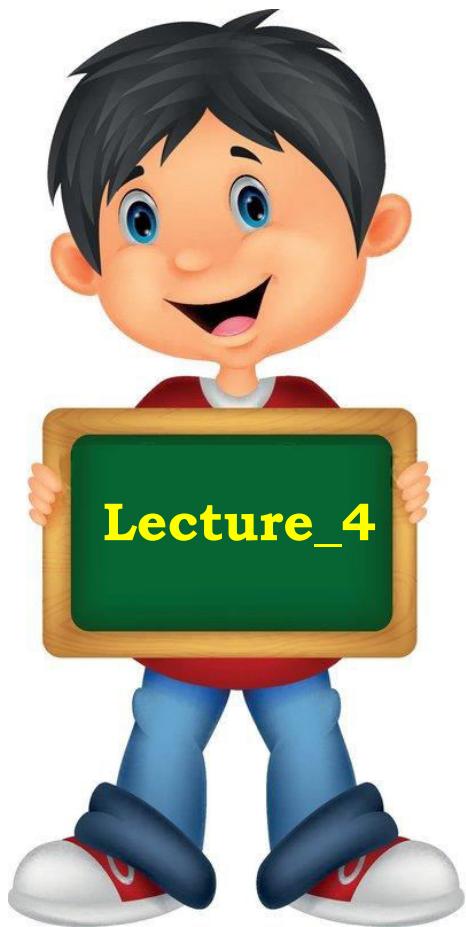


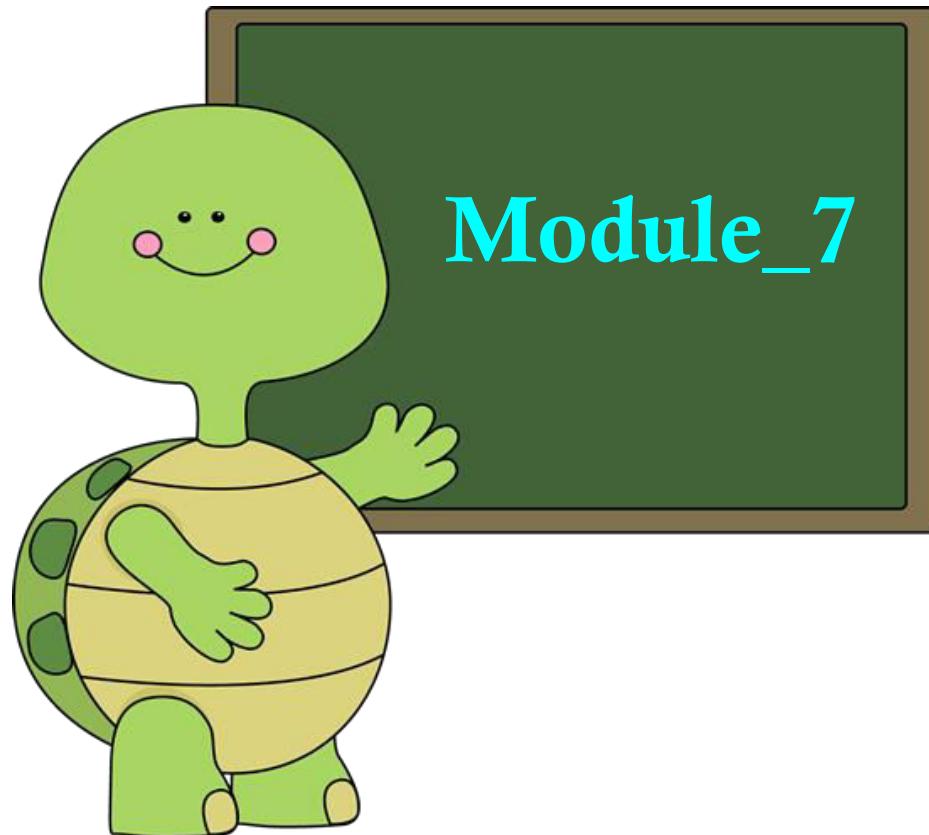
MODERN METHODS OF IRRIGATION

DRIP SYSTEM

It is a Boon In Regions where availability of Water is poor.







Crop Production And Management

- **Protection From Weeds**

PROTECTION FROM WEEDS

In a field many other Undesirable Plants may grow naturally along with the crop. These undesirable plants are called Weeds.



PROTECTION FROM WEEDS

The removal of weeds is called **Weeding**.



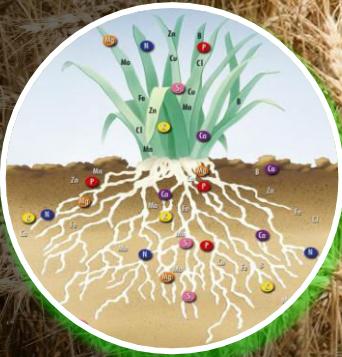
Weeding is necessary since weeds compete with the crop plants for



Water



Light



Nutrients



Space

PROTECTION FROM WEEDS

Thus, they Affect the Growth Of The Crop.



PROTECTION FROM WEEDS

**Some Weeds Interfere Even In Harvesting
and may be Poisonous For Animals And Human Beings.**



PROTECTION FROM WEEDS

Farmers adopt many ways to Remove Weeds And Control Their Growth.



PROTECTION FROM WEEDS



Tilling before sowing of crops helps in uprooting and killing of weeds, which may then dry up and get mixed with the soil.

PROTECTION FROM WEEDS

The best time for the Removal Of Weeds Is Before They Produce Flowers And Seeds.



oval of weeds by Uprooting Or
o Time.



PROTECTION FROM WEEDS

This is done with the help of a **KHURPI**.

used to Uproot Weeds.



PROTECTION FROM WEEDS

Weeds are also controlled by using certain chemicals, called **Weedicides**, like **2,4-dl**, that are sprayed in the fields to kill the weeds.



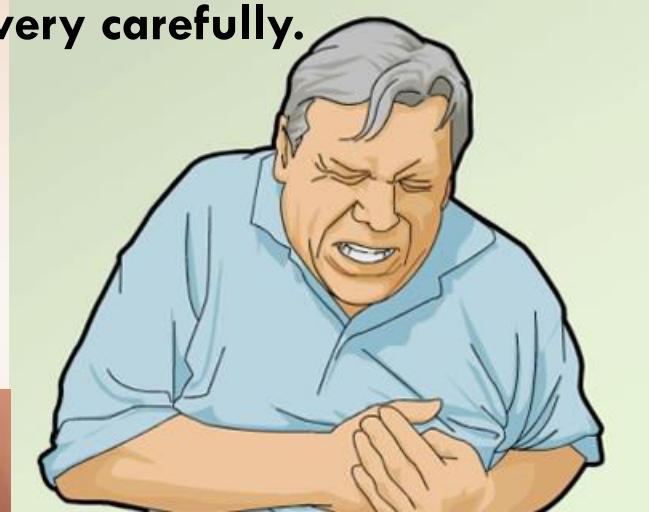
PROTECTION FROM WEEDS

The weedicides are diluted with water to the extent required and **Sprayed In The Fields With A Sprayer.**



PROTECTION FROM WEEDS

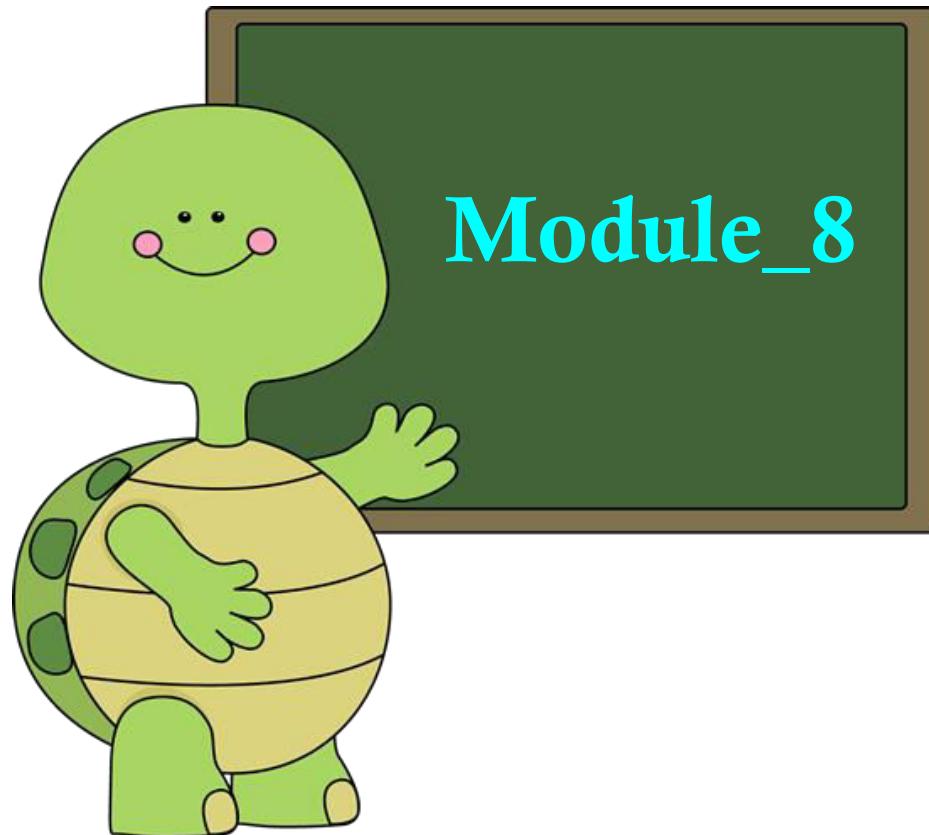
Spraying of weedicides may **AFFECT THE HEALTH OF FARMERS.**
So they should use these chemicals very carefully.



PROTECTION FROM WEEDS



They should Cover Their Nose and Mouth with a Piece Of Cloth During Spraying Of These Chemicals.



Crop Production And Management

- Harvesting
- Storage
- Food from Animals

HARVESTING

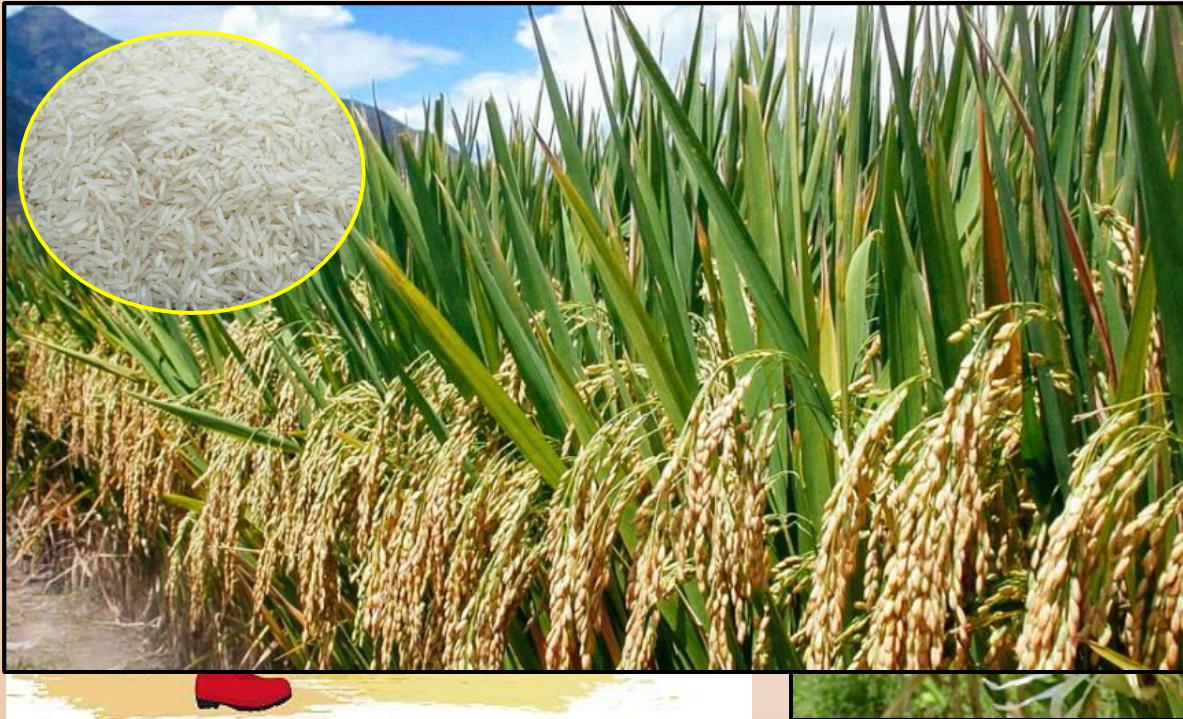
Harvesting Of A Crop is an important task.



HARVESTING

The cutting of crop after it is mature is called Harvesting.

It usually takes 3 to 4 months for a Cereal Crop To Mature



HARVESTING

Harvesting in our country is either done Manually By Sickle or by A Machine Called Harvester.

In the harvested crop, The Grain Seeds Need To Be Separated From The Chaff



HARVESTING

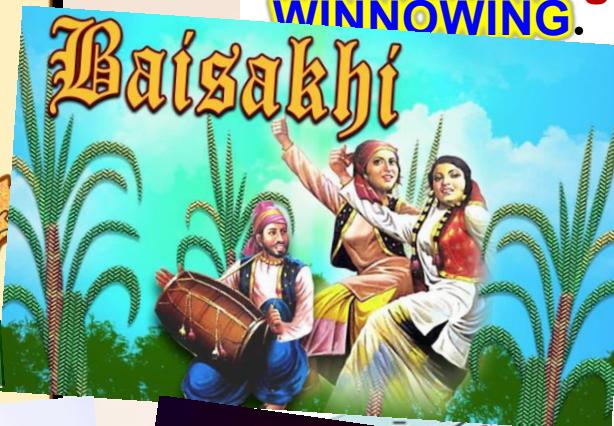
This process is called **THRESHING**.

This is carried out with the help of a machine called '**Combine**' which is in fact a **Combined Harvester And Thresher**.



HARVESTING

The period of Harvest is of Great Joy and Happiness in ALL PARTS OF INDIA and chaff by Special festivals associated with the harvest season are Pongal, Baisakhi, Holi, Diwali. WINNOWING.



STORAGE

Storage of grains is an important task.



STORAGE

The Fresh Crop has More Moisture.



drying, they May Get Spoilt Or
apacity.

Dried In The Sun to reduce the



STORAGE

Storage of grains is done in Jute Bags or Metallic Bins.



STORAGE

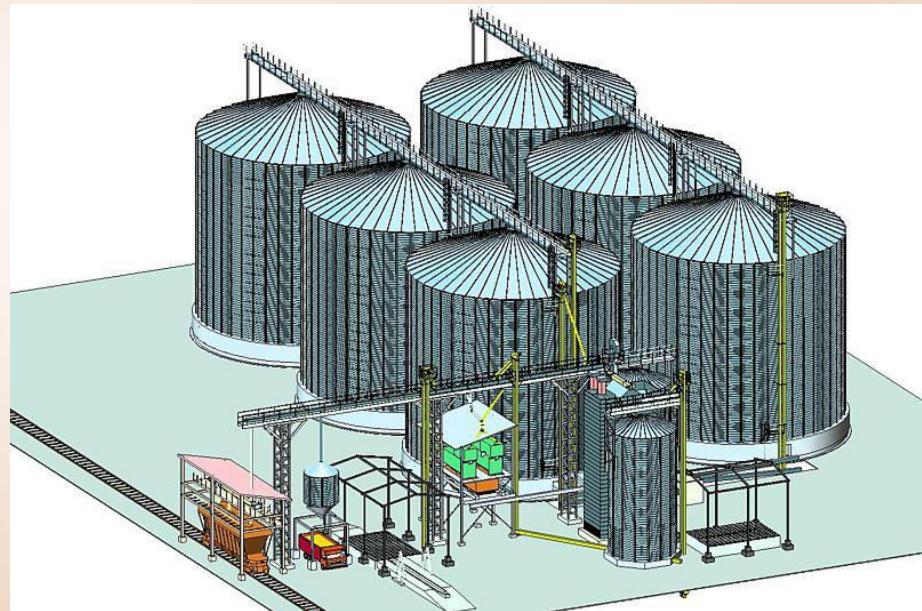
Large Scale storage of grains is done in **Silos** and **Granaries** to Protect Them From Pests like rats and insects



STORAGE

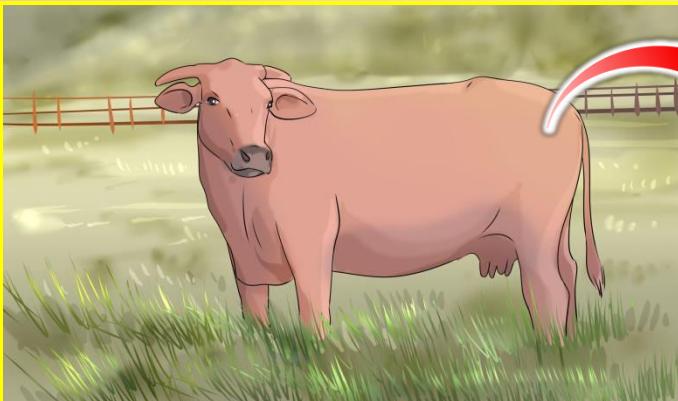
Dried Neem Leaves are used for storing food grains at home.

For storing Large Quantities Of Grains in Big Godowns, Specific Chemical Treatments are required to protect them from pests and microorganisms.



FOOD FROM ANIMALS

Like *plants*, *animals* also provide us with Different Kinds Of Food.



FOOD FROM ANIMALS

Many people living in the coastal areas consume fish as a major part of their diet.



FOOD FROM ANIMALS

Animals reared at home or in farms, have to be provided with proper

FOOD AS RATHER



FOOD FROM ANIMALS

When this is done on a
LARGE SCALE ,

it is called
**Animal
Husbandry.**



Thank You