



BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034

SUBJECT:-BIOLOGY- Class 8

CHAPTER:-Crop Production and Management

TOPIC:- Manures and Fertilisers

Guidelines:

Dear Students,

- Please refer to the following content as these notes will help you understand the chapter's concept and enable you to attempt the assignment that follows. This assignment will be graded on submission.
- You may follow the given link to refer to Class 8 Science NCERT
http://ncertbooks.prashanthellina.com/8_Science.html

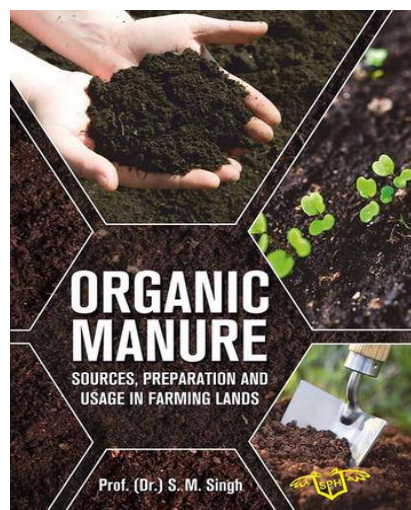
Sub Topics:

1. Manures
2. Fertilisers
3. Field Fallow
4. Crop Rotation
5. Significance of Water
6. Sources of Irrigation.
7. Traditional Methods of Irrigation.
8. Modern Methods of Irrigation.

❖ Adding Manure and Fertilisers

Why are manures and fertilisers added to the soil?

When crop after crop is grown in the same field, the soil becomes poor in certain nutrients. Manure and fertilisers are added to the soil to replenish it with nutrients to ensure healthy growth of plants.



How a farmer prepares manure

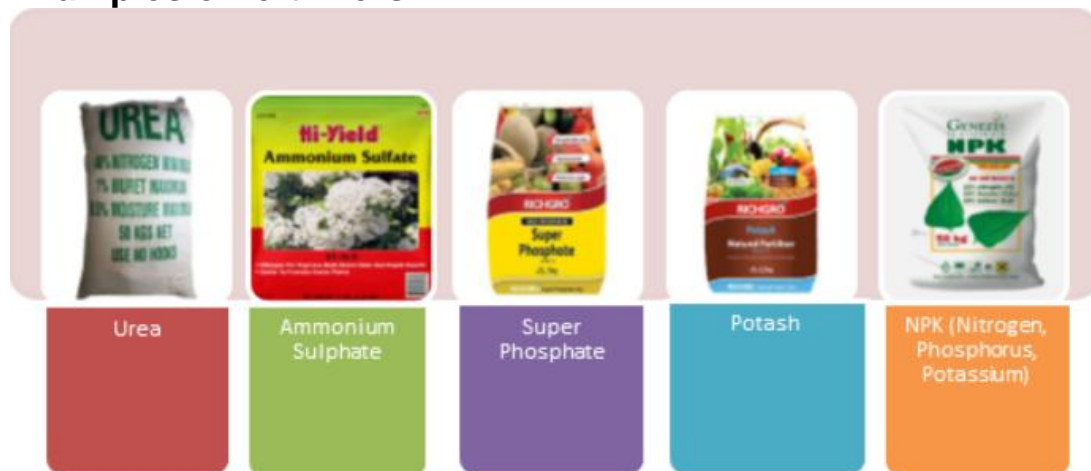
Manure is an organic substance obtained by the decomposition of plant or animal waste.

Farmers dump plant and animal waste in pits at open places and allow it to decompose. The decomposition is caused by some microorganisms. The decomposed matter is used as **organic manure**.

Please refer to the link given below and watch the video twice for better understanding :

<https://www.youtube.com/watch?v=E5CU5o-Mekg&list=PLHOGBLPrsnMqXUAo7knGRBcBSfcPEms08&index=6>

Examples of fertilizers :



Difference between Manure and Fertilisers

BBP

Manure	Fertilizers
1. Manure is a natural substance. It is obtained by the decomposition of animal waste and plant residue.	1. Fertilizer is a human-made substance. It is inorganic salt or an organic composition.
2. A manure contains small amount of essential plant nutrient.	2. Fertilizers are very rich in plant nutrients.
3. A manure adds a great amount of organic matter in the form of humus in the soil.	3. A fertilizer does not add any humus to the soil.
4. Manure is insoluble in water and thus the nutrients present in manure is absorbed slowly by plant.	4. Being soluble in water, a fertilizer is readily absorbed by the crop plants.
5. A manure is not nutrient specific and tends to remove the general deficiency from the soil.	5. A fertilizer is nutrient specific. It can specifically provide nutrient to the soil according to the crop need.
6. A manure is voluminous and bulky so it is inconvenient to store, transport, handle and apply to the crops.	6. A fertilizer is compact and concentrated so it is easy to store, transport and apply to the crop.
7. A manure is cheap and is prepared in rural homes or field.	7. A fertilizer is costly and is prepared in factories.

Pros and Cons of using fertilisers

Pros: They are chemicals, rich in particular nutrients and help farmers get better yield of crops like wheat, paddy and maize.

Cons: Excessive use of fertilisers makes soil less fertile and also causes water pollution.

Why is Manure better than Fertilisers?

Organic Manure is better than Fertilisers because:

- It adds humus to the soil and increases its water holding capacity
- Improves soil texture
- Makes soil porous which makes exchange of gases easier
- Increases the number of friendly microbes.

An example of Crop Rotation

In North India, farmers used to grow legumes in one season as fodder and wheat in the next season. This helped the soil to get replenished with nitrogen*.

*Root nodules of leguminous plants have Rhizobium bacteria that fix atmospheric nitrogen and make it usable by plants.

Please refer to the link and look at the video twice for better understanding –

<https://www.youtube.com/watch?v=lcR9i1spjN4&list=PLHOGBLPrsnMqXUAo7knGRBcBSfcPEms08&index=7>

https://www.youtube.com/watch?v=21Y_vHNBfJI&list=PLHOGBLPrsnMqXUAo7knGRBcBSfcPEms08&index=8

❖ **Irrigation** means supplying water to crops in the field.

Significance of water :

- Water is vital for the growth of plants. There can be no plants or crops if they do not have access to water in some form.
- Water is essential because germination of seeds does not take place under dry conditions. Nutrients dissolved in water get transported to each part of the plant.
- 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 watered regularly. Thus it is crucial to supply water to crops and plants in time, as per their need.
- **Sources of irrigation:** The supply of water to plants comes from various water resources. For example wells, ponds, lakes, canals, dams and reservoirs.

Modern Methods of Irrigation

Modern methods of irrigation help us to use water economically.

The main methods used are: (i) Drip Irrigation System (ii) Sprinkler System

i) Drip Irrigation System: In this system, the water falls drop by drop just at the position of the roots. So it is called drip system.



Advantages:

1. The system provides water to plants drop by drop .Water is not wasted at all.
- 2.It is a boon in regions where availability of water is poor.

Disadvantage:It is costly.

2. Sprinkler System



Sprinkler System:

1. Perpendicular pipes, having rotating nozzles on top, are joined to the main pipeline at regular distance. When water is allowed to flow through the main pipe, it gets sprinkled on to the crop as if it is raining.

Advantages: 1. Sprinkler is very useful for sandy soil .

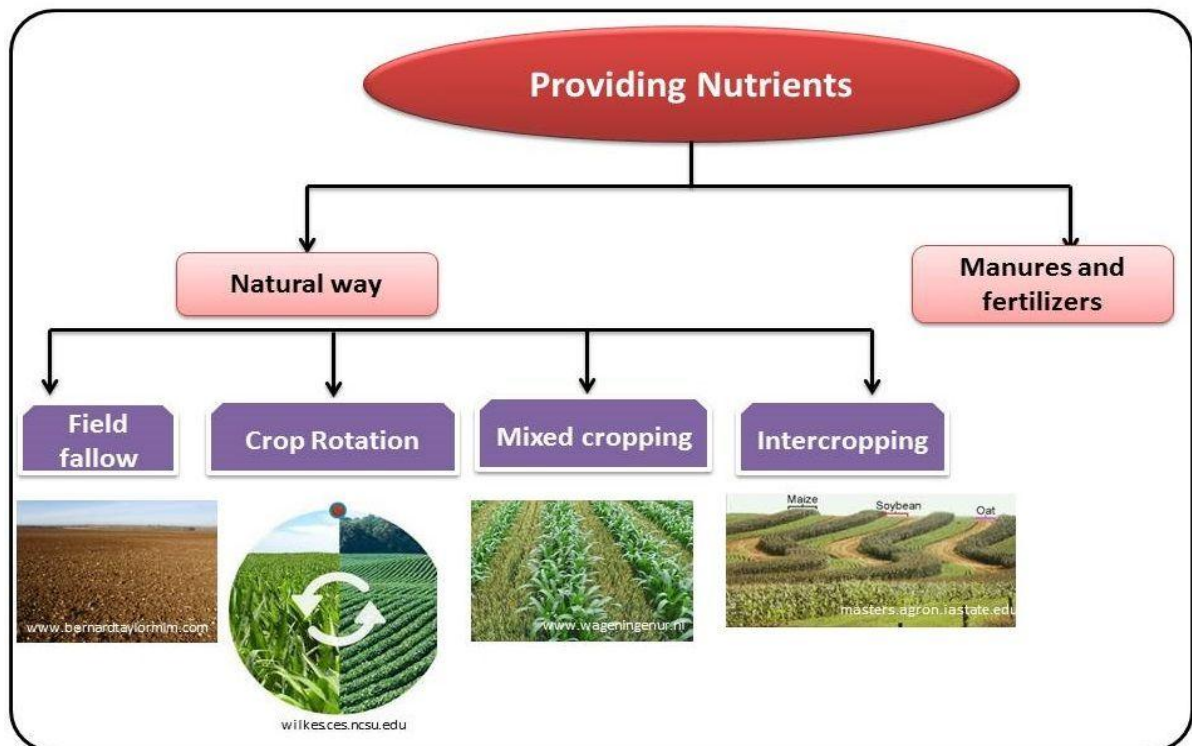
2. This system is more useful on the uneven land where sufficient water is not available.

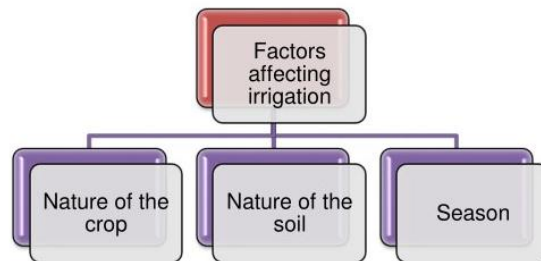


What are the three methods of replenishing the soil?

The different methods of replenishing the soil are:

- Adding **organic manure** to the soil
- Adding **chemical fertilizers** to the soil
- Leaving the field uncultivated (or **fallow**) between two crops
- **Crop rotation** in which different crops are grown alternately to allow the soil to get replenished with different nutrients.





Dhekli

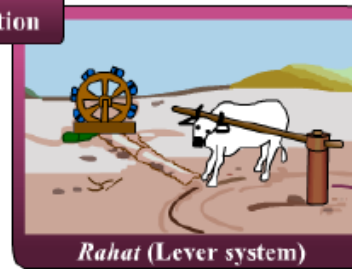


Chain pump

Traditional
methods of
irrigation

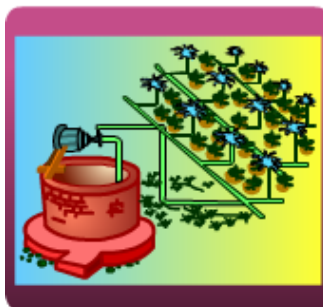


Moat (Pulley system)



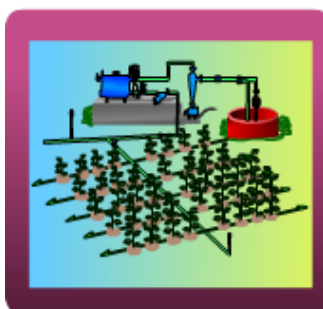
Rahat (Lever system)

Modern Methods of agriculture



Sprinkler System

This system consists of perpendicular pipes, which have a rotating nozzle on top. These pipes are joined to the main pipeline at regular intervals. Water in these pipelines flow at a high pressure, and gets sprinkled on crops. This method is useful in irrigating sandy soil.



Drip system

In this system, water falls drop by drop on the position of roots. This is the best technique to water plants as it prevents wastage of water.

ASSIGNMENT :-

Q1. Briefly describe three natural methods of replenishing the nutrients of the soil.

Q2. If soil has all the nutrients, why do we need to replenish it?

Q3. Crop rotation has helped the farmers to increase the crop yield . Comment on this statement.

Q4. A farmer leaves his field uncultivated for a few months. State the significance of this practice .

Q5. Compare and contrast:

a) Manure and fertilizers b) Crop Rotation and Field Fallow

Q6. Choose the correct option.

A)The system of irrigation where in water is supplied drop by drop near the roots of plants, is called

(a) pulley system (b) drip system (c) sprinkler system (d) lever system

B)Which of the following is not the traditional method of irrigation?

a)Sprinkler system b) Moat c) Drip irrigation

Q7. Drip irrigation saves wastage of water because it supplies water directly to the roots. Why is drip irrigation not used by all the farmers?

Q8. What method of irrigation will you use if you live in a dry area with shortage of water? Explain the method.