Soil and Crops -

- Different kinds of soils are found in different regions because of the following factors that decide the soil structure of that place:
    - temperature
    - humidity
    - rainfall
    - sunlight
    - winds

- **Wheat and gram require clayey and loamy soil for growth.**
- **Rye grows in sandy loam.**

Wheat field

Rye cultivation in sandy loam soil

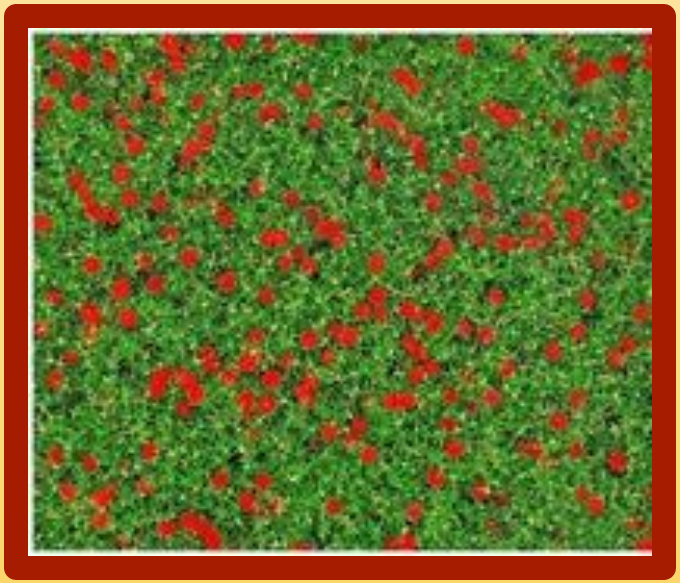
AKA RICE

- **Paddy requires clayey and soil rich in organic matter which have a good water retention property.**
- **Loamy soils are required to cultivate lentils and other pulses.**

paddy field

Lentils AKA Corn

- **Clayey soils are rich in humus and very fertile and hence ideal for the growth of rose, wheat.**
- **Sandy loam soils which can hold large amount of water are ideal for the cultivation of cotton, potato, asparagus.**



Rose cultivation

Cotton, potato, asparagus cultivation in sandy loam soils

What is soil erosion?

- When the top layer of soil gets removed it is called soil erosion.
- The soil erosion mainly occurs when the soil is left loose without vegetation or when deforestation occurs.
- In such a situation, strong winds and flowing water or rainwater takes away the topsoil and therefore decrease its quality.
- Also, this kills the organisms living inside the soil.

- **The roots of the plants and trees keep the soil together and allow several microorganisms to grow and survive there. Therefore, it is always advised to plant more trees and avoid deforestation.**

PLENARY -

Q. Continuously water-logged soils are disadvantageous for plant growth. Why?

A. Roots although underground possesses living cells that require oxygen for respiration and production of energy. They absorb oxygen that is present in the spaces between soil particles. But in water-logged soils, water occupies spaces between soil particles and pushes the oxygen out into the atmosphere. Thus, roots are deprived of oxygen and this affects the plant growth.

Q. Gardeners gently dig up the soil around the roots of garden herbs (plants) frequently. Give reasons.

A. A gardener often gently digs up the soil around the roots of garden plants or herbs for following reasons

- **It enables easy root growth.**
- **For easier percolation of water.**
- **For aerating the soil enabling air to get into deeper layers of soil.**
- **For removing the weeds.**

ASSESSMENT / EVALUATION

Q. Is it a good practice to remove grass and small plants that are growing in an open, unused field? Give reason to support your answer.

A. No, it is not a good practice to remove grass and small plants growing in an open, unused field because the plants cover the soil surface. Their roots bind the soil particles, holding and adhering them in place. It helps in preventing the topsoil from being washed off during heavy rain, floods and winds.

In this way, soil erosion is prevented and topsoil layer is preserved for growing more plants.

Q. Why is soil erosion relatively less in dense forests as compared to barren, open fields?

A. In dense forests, the tree cover (canopy) prevents rainwater from directly falling on the ground/soil. Also roots of the vegetation bind the soil particles and hold them together. As a result, soil erosion is minimised.

But in barren, open fields, the soil is exposed to the falling rain. The soil particles become loose due to the impact of raindrops and the flow of water carries them away. The flowing water further erodes the soil surface aggravating erosion.