ATOMIC ENERGY EDUCATION SOCIETY

HANDOUT MODULE 2 / 2

CHAPTER 9 SOIL

Properties of Soils

1. Percolation of water through the Soil

Percolation can be defined as the property of the soil by which it allows the flow of water through it. The rate at which water percolates or moves through soils may vary in different kind of soils. Some soils absorb water while others allow it to flow through them. The rate of percolation can be calculated by:

$$\text{Percolation Rate } \left(\frac{\text{mL}}{\text{min}}\right) = \frac{\text{Amount of water (mL)}}{\text{Percolation time (min)}}$$

2. MOISTURE IN SOIL

Moisture is the amount of water that is present in the soil. Even a dry soil has some amount of moisture in the air. However, the clayey soil has the highest content of moisture.

On a hot summer day, the vapour coming out of the soil reflect the sunlight and the air above the soil seems to shimmer.

3. Absorption

Every soil has a water absorption capacity which depends upon how porous the soil is. Clayey and loamy soils are most porous hence can retain water in large quantities. That is why crops can grow over these soils. Sandy soils, on the other hand, do not absorb water and hence do not support much vegetation.

SOIL AND CROPS:

The climatic factors, as well as the components of soil, determine the various types of vegetation and crops that might grow in any region. Clayey and loamy soils are both suitable for growing cereals like wheat, and gram. Such soils are good at retaining water. For paddy, soils rich in clay and organic matter and having a good capacity to retain water are ideal. For lentils (masoor) and other pulses, loamy soils, which drain water easily, are required. For cotton, sandy loam or

loam, which drain water easily. and can hold plenty of air, are more suitable. Crops such as wheat are grown in the fine clayey soils, because they are rich in humus and are very fertile.

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.

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