

## **CHAPTER 10**

# **Soil Pollution**

### **Soil properties:**

These can be divided into three major categories physical, chemical and biological properties.

#### **i) Physical properties of soil:**

Soil comprises of minerals, organic matter, water and air. The composition and proportion of these components greatly influences soil physical properties including colour texture, structure and porosity. Organic matter is the organic component of soil, which includes the residues of dead plants, animals and organisms. It consists of nutrients necessary for plants growth such as nitrogen, phosphorus and potassium. Organic matter in soil improves water infiltration, decreases evaporation and increases the water holding capacity.

#### **ii) Chemical properties of soil:**

The term pH is used to indicate the level of acidity or alkalinity of a soil. The range of pH values of good soil lies from 5.5 to 7.5 below pH 7 the soil are termed as acidic and above pH 7 alkaline. Soil richer in organic matter is acidic in nature as a result of degradation of various substances produces various acids in soil.

Availability of plant nutrients is strongly tied to the pH in soil.

The availability of N, K, Ca, Mg and S tends to decrease with decreasing pH since conditions, which acidity the soil such as weathering and plant uptake also result in removal of these nutrients or in decreased microbial activity.

### **iii) Biological properties of soil:**

Soil is not a dead mass but an abode of millions of organisms. It is the most abundant and diverse ecosystem on the earth. Soil organisms include both plants and animal forms ranging from sub microscopic viruses to earthworms, to large burrowing animals such as gophers and ground squirrels. Major microbial groups in soil are bacteria, fungi, algae and protozoa. Most notable are the cycle of carbon, nitrogen, sulphur and phosphorus, all of which are elements important in soil fertility.

Soil microbes convert organic forms of elements to their inorganic forms and liberate carbon dioxide, ammonia, sulphate, phosphate and inorganic forms of other elements. This process is known as “mineralization”.