

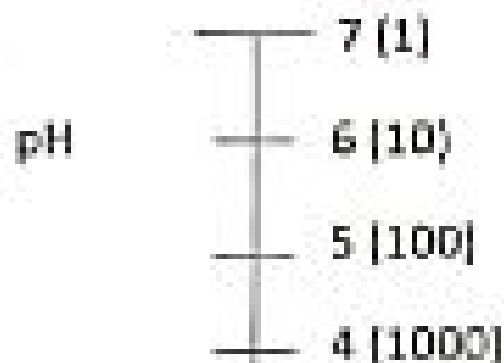
The percentage of CEC which is occupied by Base forming cations

( $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{K}^+$ ) is known as base saturation percentage.

$$\text{BSP} = \frac{\text{Base forming cations}}{\text{Total CEC}} \times 100$$

### Soil pH:

Negative log of hydrogen ion activity



### pH Scale:

The pH scale goes from 1-14 with 7 as a neutral point. When we move from 7 to 1, the concentration of hydrogen ion increases and soil pH become increasingly acidic. While when we move from 7 to 14, concentration of  $\text{H}^+$  decreases and soil pH become increasingly alkaline. Hydrogen ion concentration has 10 fold change b/w each pH whole number i.e. Hydrogen ion concentration at pH 6 will be 10 times more than at pH 7.

### Important of Soil pH:

I)-Soil pH has a direct impact on plant growth. It is major factor in determining which trees, shrubs or grasses will serve on soil, depending upon soil pH.

II)-pH influences the processes involved in the formation and development of soil by influencing the rate of weathering.

III)-It effects the availability of nutrients to plants i.e phosphorous is mostly available at pH 6 to 6.5 when pH increases (alkaline), phosphorous is going to react with calcium to form calcium phosphate and its availability to plants greatly reduced. On the other hand if pH becomes increasingly acidic, phosphorous is going to react with iron and aluminum, its availability to plants greatly reduces. Most of essential nutrients are available at neutral pH while micro-nutrient particularly copper, iron, manganese they are available at acidic Ph.

IV)-Soil pH also effect plant growth by influencing the activities of beneficial soil micro-organism. Most of the micro-organisms they are very sensitive to soil acidity i.e. bacteria that fix atmospheric nitrogen decomposed organic matter are greatly depressed by strong acidity. However fungi can tolerate acidity better than to other micro-organism.

### Organic Matter: