What is soil pH?

Soil pH is the measure of the acidity (sourness) or alkalinity (sweetness) of a soil. A simple numerical scale is used to express pH. The scale goes from 0.0 To 14.0, with 0.0 being most acid, and 14.0 being most alkaline. The value, 7.0 is neutral--i.e., neither acid or alkaline.

Soil pH is important because it influences several soil factors affecting plant growth, such as (1) soil bacteria, (2) nutrient leaching, (3) nutrient availability, (4) toxic elements, and (5) soil structure. Bacterial activity that releases nitrogen from organic matter and certain fertilizers is particularly affected by soil pH, because bacteria operate best in the pH range of 5.5 to 7.0. Plant nutrients leach out of soils with a pH below 5.0 much more rapidly than from soils with values between 5.0 and 7.5. Plant nutrients are generally most available to plants in the pH range 5.5 to 6.5. Aluminum may become toxic to plant growth in certain soils with a pH below 5.0. The structure of the soil, especially of clay, is affected by pH. In the optimum pH range (5.5 to 7.0) clay soils are granular and are easily worked, whereas if the soil pH is either extremely acid or extremely alkaline, clays tend to become sticky and hard to cultivate.

A pH determination (soil test) will tell whether your soil will produce good plant growth or whether it will need to be treated to adjust the pH level. For most plants, the optimum pH range is from 5.5 to 7.0, but some plants will grow in more acid soil or may require a more alkaline level. The pH is not an indication of fertility, but it does affect the availability of fertilizer nutrients. A soil may contain adequate nutrients yet growth may be limited by a very unfavorable pH. Likewise, builder's sand, which is virtually devoid of nutrients, may have an optimum pH for plant growth.

Table 1Plant growth with soils with different ph. values

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| Plant  Group | pH of  soil | Average Plant Growth(cm) |
| 1 | 6.0 | 25.4 |
| 2 | 6.2 | 33.0 |
| 3 | 6.4 | 50.8 |
| 4 | 6.6 | 53.3 |
| 5 | 6.8 | 53.3 |
| 6 | 7.0 | 30.5 |
| 7 | 7.2 | 22.9 |