Water for Profit

SOIL PH

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Soils can be naturally acid or alkaline. An acid soil has a low pH due to a high hydrogen ion concentration. An alkaline soil has a high pH and a low concentration of hydrogen ions.

Introduction

Soil pH is routinely measured as part of soil testing or can be measured in the field using either pH meters or a field kit. The soil pH influences soil nutrient availability and plant growth. It may be affected by crop, fertiliser and irrigation management practices.

Soil pH affects the amount of nutrients that are soluble in soil water and, therefore, the amount of nutrients available to plants. Some nutrients are more available under acid conditions while others are more available under alkaline conditions. However, most mineral nutrients are readily available to plants when soil pH is near neutral.

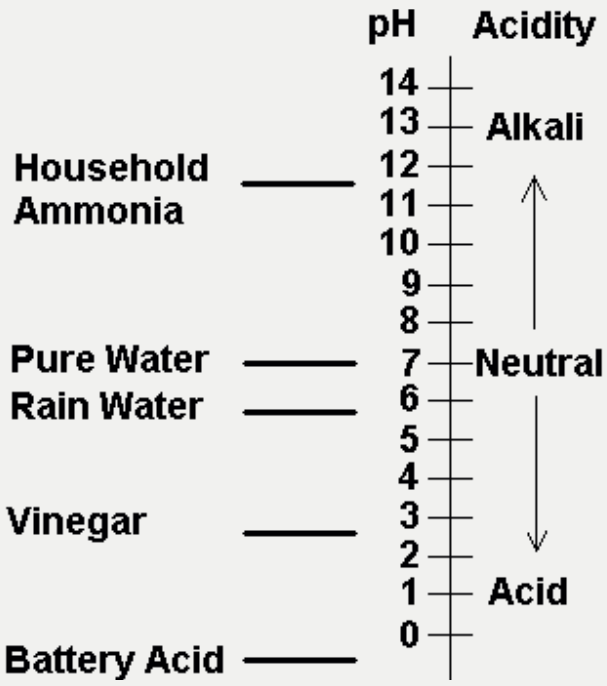
Acid Soils

Most soils have pH values between 3.5 and 10. In higher rainfall areas, the natural soil pH typically ranges from 5 to 7, where as in drier areas the range is from 6.5 to 9. Soils with pH values of 6.5 to 7.5 are referred to as 'neutral'. Soils with a pH less than 6.5 are termed 'acidic' while soils with a pH less than 5.5 are considered strongly acidic. Acid sulphate soils, which occur in low-lying coastal areas, can be extremely acidic with a pH less than 4.

The development of strongly acidic soils (pH less than 5.5) can result in poor plant growth as a result of one or more of the following factors: low pH, aluminium toxicity, manganese toxicity, calcium deficiency, magnesium deficiency, and low levels of essential plant nutrients such as phosphorus and molybdenum.

Alkaline Soils

Alkaline soils may encounter nutrient deficiencies of zinc, copper, boron and manganese. Soils with an extremely alkaline pH, greater than 9, are likely to have high levels of sodium. The correct balance of trace elements is obtained where the soil pH is between 5.5 and 7.5, so every effort should be taken to check soil pH levels regularly. Early identification of soil pH problems is important as it can be both costly and difficult to correct long-term nutrient deficiencies.



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For more details contact Growcom on 07 3620 3844.

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