pH

pH measures the acidity/alkalinity of a soil or solution. pH ranges from 1-14, with 7 considered neutral. pH below 7 is considered acidic, while pH above 7 is considered alkaline or basic. Most plants prefer a slightly acidic growing media somewhere in the 6-7 range. pH is vital to plant growth because when the soil or other media is outside of the preferred pH range, nutrients in the soil or solution become unavailable or "locked out". This means that no matter how fertile the soil or solution, a plant cannot access the nutrients.

Hydroponics

Most nutrient deficiencies in hydroponic systems stem from improper pH levels. To properly check the pH of a hydroponic solution, add all of the nutrients and supplements that you will be using to a full reservoir. Stir well. Check the pH of your solution with a ph test or meter. If it is outside the 5.8-6.5 range, add either pH up or pH down in small increments, mixing your reservoir thoroughly. Re-check pH after adding pH adjuster until the proper range is reached. Check every few days to make sure the pH remains in the proper range.

Soil

Soil pH is often overlooked by outdoor gardeners, in part because it is a lot more difficult to accurately check soil pH than it is to check liquid pH. The best and most accurate way to check soil pH is by sending a soil sample analysis to Raleigh for testing. The state of North Carolina does this for free, and testing boxes may be obtained at your local Extension Service Office. There are meters and test kits available on the market, but these should be used as a preliminary method of checking pH, and if a problem in plant growth appears, more accurate testing should be done.

Soil pH usually needs to be adjusted upwards, as organic matter normally lowers the pH. The most common way to raise pH is by adding lime. A basic application recommendation is 5lb. per 100sq. ft. in order to raise the pH one point. Additional variables apply, so please consult your soil sample analysis for proper liming amounts.

To correct alkaline soils, there are a couple of options. For small areas around acid loving plants such as azaleas, rhododendrons, blueberries and blackberries, use peat moss, which has a naturally low pH, in the root area of the plants. Also, pine needles and pine bark have a low pH, and these can be used for mulch or ground into the soil. For larger areas, elemental sulfur is the only cost effective option.

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