



# Cooperative Extension

## Tompkins County

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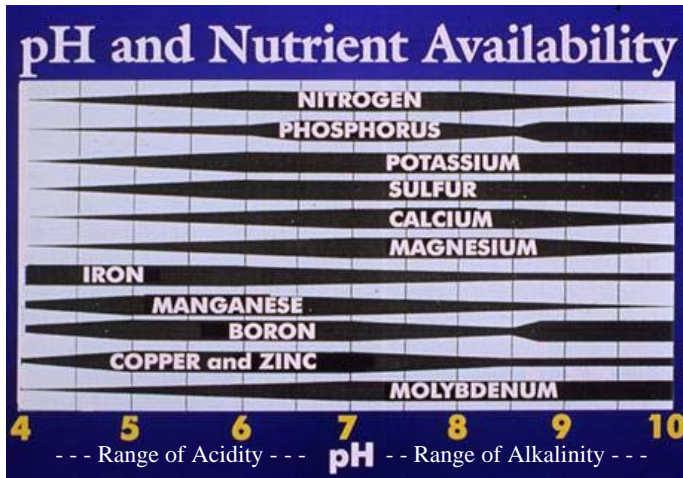
Name: \_\_\_\_\_ Phone: \_\_\_\_\_

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Type of Planting	pH
Sample 1: _____	_____
Sample 2: _____	_____
Sample 3: _____	_____
Sample 4: _____	_____
Sample 5: _____	_____
Sample 6: _____	_____

- \_\_\_\_\_ pH is in proper range, do not add lime or wood ash, check pH every two years to monitor any changes;
- \_\_\_\_\_ Soil is very alkaline for most plants; follow recommendations on back.
- \_\_\_\_\_ Soil is too acidic for most plants; follow recommendations on back.



Effect of change in pH on the availability of plant nutrients. For each nutrient the width of the band is an index of its relative availability to plants.

Soil pH is a measure of the alkalinity or acidity of the soil. The pH is measured on a logarithmic scale from 0.0 (extremely acid) to 14.0 (extremely alkaline) with 7.0 being neutral. The soil pH is important because it affects a plant's ability to acquire nutrients. For most plants the optimal soil pH is 6.0 - 7.0; a pH significantly below 6.0 or above 7.0, major nutrients are locked into complexes that don't easily break down and are thus unavailable to the plants. (Exceptions to this pH preference include

berries, azaleas and rhododendrons which are in decidedly acid soil, 4.0 - 6.0).

A good general recommendation for improving the soil and maintaining a healthy pH range is to work some organic material into the soil each year. Sources of organic material include: compost, well-rotted manure (not cat, or human), leaf mold, grass clippings and peat moss. Not only will these amendments improve soil structure and encourage microbial activity, but organic material will help buffer soil pH, i.e., reduce fluctuations in pH.

## SPECIFIC RECOMMENDATIONS

### For Gardens

#### **Alkaline Soil**

A pH of 7.0 - 7.6 can be decreased over time by adding generous amounts of specifically acid organic materials such as peat moss or oak leaf mold. Do not work wood ash into the soil as this will increase the pH.

A pH of 7.7 or higher needs more decisive action: both elemental sulfur and ammonium sulfate are effective acidifiers and can be bought at a garden center. Ammonium sulfate also adds nitrogen to the soil. Apply sulfur in the fall or spring at the rate of 3 - 5 lbs/100 sq. feet. Mix into the soil to a 4-6" depth. Ammonium sulfate can be applied at ¼ lb/100 sq. feet Apply in spring when preparing the garden.

#### *Acid soils*

For a pH of 5.9 or below, application of ground limestone is recommended. Because limestone is slow to break down, it is best added in the fall. The application rate depends on the pH, the lower the pH the more lime you will need. A general recommendation would be to apply 5 lbs. Line/100 sq. feet and then check the pH again the spring to determine if more lime is needed. Wood ash will also raise soil pH and has about half the neutralizing capacity of limestone; apply ashes conservatively and test your pH every year.

### For Lawns

A pH of 6.0 - 6.8 means the pH is in proper range, therefore, no treatment is needed.

#### *Acid Soils*

A pH of 4.0 - 5.5 suggests that an application of limestone of 50 lbs. per 1000 sq. ft. will be needed. Make 1 application in the spring and 1 in the fall. Have the soil tested again next year.

A pH of 5.5 - 6.0 can be altered by making 1 annual application of limestone 50 lbs. per 1000 sq. feet, preferably in the fall. Test the soil again next year.

#### *Alkaline Soils*

A pH of 6.8 - 7.5 does not need a lime application. Consider instead, using an acidifying fertilizer.

A pH of 7.5 or more will benefit from the application of 5 lbs. of sulfur per 1000 sq. ft. once in the spring and once in the fall. Do not exceed this recommendation rate specifically on established lawns. Have the soil tested again next year after sulfur has been added.