
LIME GUIDELINES FOR FIELD CROPS

GLOSSARY

Base saturation: Is calculated value based on a laboratory measurement of the amount of basic cations in a soil divided by the total cation exchange capacity of the soil.

Buffering capacity: This is the capacity of the soil to resupply the soil solution with hydrogen ions and resist changes in pH. It is determined by the salt replaceable and residual acidity of a soil.

Buffer pH: This is a value that is generated in the laboratory; it is not an existing feature of the soil. Cornell guidelines are based on the Modified Mehlich buffer pH calibrated for New York soil types.

Calcium Carbonate Equivalent (CCE): This is a standardized measure in which a material is compared to pure calcium carbonate. All liming materials include some inert materials that will not be able to increase the pH of the soil. The inclusion of these materials will reduce the CCE of the material.

Crop Rotation: A crop rotations is defined as a 6-year crop sequence (3 years past and 3 years ahead).

Exchange acidity: a measure of the salt-replaceable acidity and residual acidity of a soil both of which determine the capacity of the soil to buffer changes in pH when lime is added.

Effective Neutralizing Value (ENV): This is a standard measure the amount of a lime material that will react with soil acidity in the first year.

Fineness: This is a standard measure for lime material and refers to the amount of particles that pass a 20 mesh and then a 100 mesh screen.

Fineness factor: The rate of reaction of a liming material is determined by the particle sizes of the material. To determine the fineness factor of a lime material; step (1) subtract the % passing a 100 mesh sieve from the % passing a 20 mesh sieve and multiply this percentage by 0.60. Step (2) add the % passing the 100 mesh sieve to the value obtained in step (1) and divide the sum by 100. New York State law states that the fineness factor of a material being sold as ag lime must have at least 80% passing a 20 mesh sieve and at least 30% passing a 100 mesh sieve.

Soil Acidity: soils have three different sources of acidity (1) active acidity (pH), (2) salt-replaceable acidity and (3) residual acidity. To change the pH of the soil all three must be considered when determining lime amounts.

Soil pH: The pH of a soil is the measure of the active acidity of a soil. It measures the activity of hydrogen ions (H^+) in the soil solution. IT is sometimes called the soil "water" pH because it is measured by mixing soil with distilled water.

Tillage depth: Is the average depth of soil mixing during tillage operations on a farm.

Total Neutralizing Capacity (TNC): Calcium carbonate equivalent is referred to as TNC on the New York State Liming Materials Certificate of Registration.