

# Lime considerations

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Fall is an excellent time to test soil pH and determine whether any lime needs to be applied for future crops. Proper soil pH is important for nutrient availability, herbicide activity and crop development. For most soils, additional lime is not needed every year. Consider these points before liming your fields:

1. Do I need lime? Each year we hear stories of people adding lime to their fields without a soil test. The grower has a source of free waste-product lime that they pick up and apply to their fields. In many cases their soil pH was fine, but they did not want to pass up a "good deal."

Without knowing the soil pH, a grower may inadvertently raise their soil pH to the high 7's. At this elevated pH, certain nutrients may become limited and the productivity of their crop may be reduced and require special management practices. Northwest Ohio has the greatest risk of elevating soil pH from careless applications of lime. A soil analysis is the best step to determine if a field needs lime.

2. What is the pH of my subsoil? Generally a laboratory recommends lime when the soil pH drops two to three units below the desired value. The desired value depends upon the crop and the pH of the subsoil. In parts of Ohio where the subsoil pH is less than 6

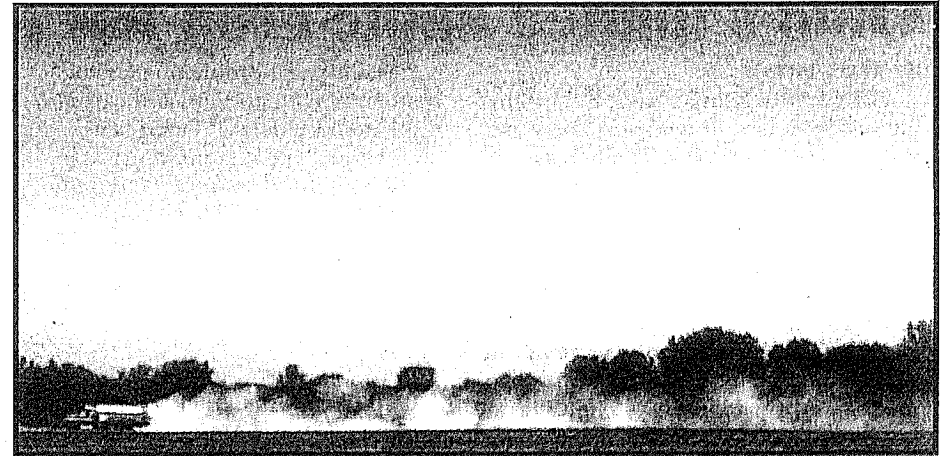
for mineral soils (eastern Ohio), additional lime is recommended after the soil pH drops to 6.2 for corn and soybean, and 6.5 for alfalfa.

In other parts of the state (generally western Ohio), the subsoil pH for mineral soils is greater than 6 and lime is not needed until the soil pH drops below 6 for corn and soybeans, and 6.2 for alfalfa. Private laboratories may not take in account the subsoil pH and use recommendations based on a subsoil pH less than 6 for all parts of the state, possibly recommending lime applications several years earlier than needed for some areas.

3. Do I need magnesium (Mg)?

Several parts of the state are historically low in soil magnesium (eastern and extreme southern Ohio). Adequate soil magnesium is important to reduce the risk of such problems as grass tetany for grazing animals. Soil test magnesium levels need to be greater than 50 parts per million (100 pounds) for optimal corn, soybean, wheat and alfalfa production. Often areas low in magnesium also need lime, which has made the application of dolomitic lime an economic solution for both concerns.

Unfortunately, some producers have been led to believe that magnesium levels in dolomitic lime may be undesirable. The Ohio State University has shown that crops yield the same over a wide range of calcium to magnesium ratios and is not critical as long as a



lime source contains more calcium than magnesium. Thus the level of magnesium is unimportant as long as the calcium level is above magnesium. The focus should be selecting lime on its effective neutralizing power (ENP) rather than its calcium level.

4. What is the ENP of my lime? An important item from a lime analysis report is the ENP value, which is required for material sold as lime for agricultural purposes in Ohio. This value allows a producer to compare the quality among lime sources because ENP considers the purity, neutralizing power (including fineness) and moisture content. In other words, the ENP tells you how much of that ton of lime actually neutralizes soil acidity. The unit for ENP is pounds per ton (be careful not to use %ENP, which may

also be on a lime analysis report). The ENP allows a producer to compare different lime sources because they can now determine price per pound or ton of actual neutralizing material.

In summary, make sure you take a soil test, determine if lime is needed, determine if magnesium is needed, know the historic pH of your subsoil and then use the ENP to select the most cost effective lime material. A soil test every three to four years will determine the lime requirements for your fields. Additional information on ENP and lime sources may be found at: [agcrops.osu.edu/fertility/documents/AGF505.pdf](http://agcrops.osu.edu/fertility/documents/AGF505.pdf) and a lime application rate calculator may be found at: [agcrops.osu.edu/fertility/documents/pH\\_lime\\_rec\\_spreadsheet\\_000.xls](http://agcrops.osu.edu/fertility/documents/pH_lime_rec_spreadsheet_000.xls).

UNIVERSITY OF MINNESOTA AGRONOMIST ENCOURAGES PROPER WEED MANAGEMENT FOR EFFECTIVE ROUNDUP READY CROP STEWARDSHIP



Dr. Jeffrey  
Gunsolus  
University of  
Minnesota

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