

David G. Hallauer
Meadowlark Extension District Agent
Crops & Soils/Horticulture

Liming Acid Soils (second in a series...)

Lime recommendations are initially fine-tuned based on crop sensitivity. Most of our common crops tend to tolerate higher pH levels (as long as they don't exceed a pH of 7...). With that in mind, lime applications should be based on the most sensitive crop to acid soils in the crop rotation. Alfalfa is the most sensitive crop we'll typically find in the rotation, requiring pH levels right around 6.8. Soybeans and clover species do best at pH's between 6.0 and 6.4. Wheat and corn can tolerate levels even below that. With that in mind, apply lime so that you aren't limiting the most sensitive crop in the rotation.

Application rates are given in pounds of effective calcium carbonate (ECC) per acre. This measure allows for fine-tuning recommendations so that varying soil types and lime qualities can be factored in to liming recommendations. By measuring the pH and Buffer pH of a soil as well as the percent ECC of the liming product, a recommendation can be made to raise pH adequately – but not excessively. ECC is a 'neutralizing' ability number, based upon the combination of a product's purity and fineness. Since lime materials can vary widely in their neutralizing power, all lime materials sold in Kansas must guarantee their ECC content with dealers subject to inspection by the Kansas Department of Agriculture.

Which product should you use? Research has clearly shown that a pound of ECC from any lime source -- ag lime, pelletized lime, water treatment plant sludge, fluid lime, or other sources -- is equally effective in neutralizing soil acidity. With that in mind, in most circumstances, the cost per pound of ECC applied to your field should be a primary factor in source selection.

For further information, see K-State publication "Soil Test Interpretations and Fertilizer Recommendations," MF-2586: <http://www.ksre.ksu.edu/bookstore/pubs/MF2586.pdf>

Squash Bug Control

There was a study done in 2005 by Ohio State University that compared the effectiveness of various biorational and natural products to more traditional pesticides. Squash bug was one of the insects that was a target organism. What was interesting is that certain products were more effective at different life stages. The researchers compared the effectiveness of products on young nymphs, old nymphs and adults.

The products most effective on both young and old nymphs was Spinosad. The Permethrin products were moderately effective on both young and old nymphs as well. Interestingly, Pyrethrin and Carbaryl containing products were moderately effective on young nymphs, but relatively ineffective on old nymphs.

Adult control was a whole different ball game!! The most effective active ingredients were L-Cyhalothrin, Cyfluthrin, and Pyrethrin products. Esfenvalerate containing products were fairly effective as well, but by the adult stage, products containing Spinosad, Permethrin, and Carbaryl were relatively ineffective.

That's great – but what are all those active ingredients?! For a list of products that contain these active ingredients, please contact your District Extension Office.