The Aglime Council of Indiana
"Your Resource for Aglime Information"

Maximum Yield on Marginal Ground

Changing market opportunities here at home and rising market expectations around the world are forcing U.S. farmers to consider all possible avenues toward being more productive.

In that vein, outside of all the latest seed, equipment and other technologies designed and proven to maximize yield, growers are pushing onto ground that is, at best, marginally suitable for row crop production.

Understandably, trying to leverage these fields for all they can offer, farmers are inclined to use an intensive application of fertilizers, herbicides and other such crop inputs.

Those who are more successful are those who farm with respect for the most fundamental building block of any soil fertility program.

It All Starts With Proper Soil pH

Seed companies continue to develop corn hybrids, bean varieties and other crops specially bred to maintain agronomic characteristics that perform remarkably well on marginal ground.

However, proper management of these crops is as critical as ever to optimize their value. In the case of soil fertility, long before determining the brands and application rates of fertilizers and other chemicals, farmers must first look at their field pH levels.

According to the U.S. Department of Agriculture, optimizing the effectiveness of these inputs requires a soil pH in the midrange of around 6.0.

What many farmers don't know is that, over time, soils tend to move into acidity as a result of crop removal of nutrients, leaching, natural decomposition of organic residues and the application of fertilizers.

When soils drop below 6.0, the acidity sabotages the efficacy of plant nutrients, including nitrogen, phosphorous and molybdenum. Furthermore, acidic soils often impede the effectiveness of herbicides, as most herbicides are formulated to work in a specific pH range.
On paper, this is all a dramatic investment waste.

A Proven Solution

Knowing the impact soil acidity can have on fertility and yield, growers are encouraged to collect and submit soil samples for pH testing at least every three years and, perhaps, more frequently, depending on fertilizer usage.

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Profitable for You.
Right for the Environment.

Soil Testing

If testing shows ph levels have dropped too low, the solution is to neutralize the acidity with aglime. Proper ph values can:

• Increase the efficiency of applied fertilizer nitrogen, phosphorous and potassium.
• Reduce the availability of potentially toxic soil components, such as aluminum and manganese.
• Increase the activity of soil microbes that break down organic matter.
• Improve the nitrogen fixation in legume crops like soybeans, alfalfa and peanuts.
• Provide calcium and magnesium for crop growth.
• Improve the physical condition of the soil.

It's also important to apply the right grade and amount of aglime, especially on the types of marginal ground discussed here, as they are likely to be characterized by a soil type in the extreme.

One factor in particular that brings to bare on the amount of aglime needed is soil texture. For example, a lighter sandy soil at the same pH as a denser clay soil will require less aglime.
Other factors relate to the aglime itself, as its characteristics can vary from source to source. Aglime materials are rated in effectiveness as a liming agent by its neutralizing value, or calcium carbonate equivalent (CCE). The CCE can vary dramatically from a sufficient 50 percent to a much higher and more useful grade of 90 or 95 percent.

Lastly, another important factor in aglime quality is fineness of grind. Smaller particles dissolve and neutralize soil acidity more quickly. This combines with the calcium carbonate equivalent to determine the purity of the aglime. Effective calcium carbonate equivalent—the overall quality ranking of an aglime product.

Many states have aglime councils and/or associations that can also provide additional information. These state councils are typically not-for-profit organizations comprised of participating aglime producers dedicated to providing growers with the highest quality aglime products. Most aglime councils publish application guidelines, research findings and other facts to help growers achieve and maintain proper soil pH.

The Aglime Council
11711 North College Avenue, Suite 180
Carmel, Indiana 46032-5601
Tel: (317) 580-9100 Fax: (317) 580-9183
E-mail: carol@indmaa.org

aglime.org

For more information, including locations of aglime sources, see our Aglime Producers Map at www.aglime.org or contact your local county extension office.