The value of lime in turfgrass management

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Spring is fast approaching and the workload for the turf manager is already increasing. By the time winter damage has been fully assessed and corrective measures taken, there is the risk of overlooking a very simple yet basic part of turf culture: determining the need for soil pH adjustment.

Soil pH and grass growth

For most areas east of the Mississippi, this involves adding lime to raise soil pH to between 6.0 and 6.5. Most turfgrasses grow best within that pH range. While some bentgrasses and fine-leafed fescues will tolerate lower pHs, even they often respond favorably to lime applications.

One problem with pH adjustments is that the grass rarely tells you that the soil is becoming too acid. Any turf decline due, in part, to acid soil conditions is so gradual that even the most attentive manager will rarely see it happening. Lime application is one management practice that is best scheduled by the calendar. Of course an annual soil test will indicate if your soil is becoming too acid and it should raise the red flag that corrective action is needed. Why is soil pH important? You probably know turf managers who rarely use lime and maintain excellent quality turf. During times when budgets are tight, isn't lime application one expense that can safely be delayed?

I would answer this last question in the affirmative. Lime application is one management practice that is best scheduled by the calendar. Of course an annual soil test will indicate if your soil is becoming too acid and it should raise the red flag that corrective action is needed. Why is soil pH important? You probably know turf managers who rarely use lime and maintain excellent quality turf. During times when budgets are tight, isn't lime application one expense that can safely be delayed?

Calcium exchange for H⁺ on soil colloids

Calcium ions from calcium carbonate exchanging for hydrogen on soil colloids of an acid soil. Hydrogen released from colloids into solution are neutralized by hydroxides which are produced when calcium carbonate dissolves in soil water.

FIGURE PROVIDED BY DR. RICHARD J. HULL, UNIVERSITY OF RHODE ISLAND

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