

## SOILS

### Does Lime Pay on Winter Pasture?

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**Let's say you** look at the results from your soil sample and see there is a recommendation for lime. You check around and discover this is going to cost \$40-

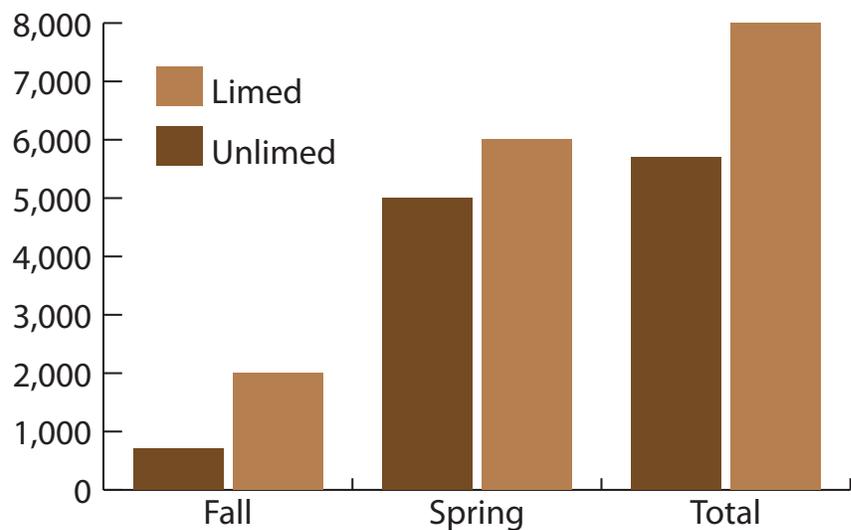
\$50 per acre. A normal person would question whether the value received from liming is worth the cost. The purpose of this article is to help you decide whether lime, when needed and recommended, is worth using.

The first thing you need to know is the Noble Foundation philosophy on lime recommendations. We do not recommend lime on winter pastures and most other crops until the soil pH drops below 5.5 (below 5.8 if legumes are part of the mix). This is the point where you will see liming results. This means that when we recommend lime, it is needed now. There is no built-in safety margin to get you through until next year.

We conducted a research study that showed the benefits of liming winter pastures. One of our plot areas had a soil pH of 4.9, and it was limed to a pH of 6.1. Liming increased total winter pasture forage yields by 2,300 pounds of dry matter per acre. The yield increase in the fall grazing phase was 1,300 pounds of dry mat-

#### Figure 1. Effect of lime on rye/wheat forage yields

Red River Research and Demonstration Farm  
Burneyville, Okla. 1999-2001  
Unlimed pH 4.9 – Limed pH 6.1



ter per acre, and the increase in the spring grazing phase was about 1,000 pounds of dry matter forage per acre. Cattle graze winter pasture at about 90 percent efficiency, so this resulted in an increase in usable forage of 2,070 pounds per acre. Conservatively speaking, stocker cattle gain 1 pound for each 10 pounds of dry matter winter forage they consume. This means that the use of lime resulted in an increase of 207 pounds of beef per acre. At the time this article was written in 2011, our economists calculated the

value of gain was 90 cents to \$1.10 per pound. Using this value of gain, liming resulted in an annual gross return of \$186 to \$228 per acre. This more than pays the cost of liming. Even at much lower values of gain, liming, when recommended, on winter pasture is a paying proposition (Figure 1).

An important finding in this study was the increase in the fall phase of grazing. The unlimed plots only yielded 700 pounds of forage per acre in the fall phase. This was probably not enough to justify fall grazing. The ▶

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limed plots yielded 2,000 pounds of forage per acre, which was sufficient for good fall grazing.

Do not use the information in this article to decide to lime all your winter pastureland expecting huge yield increases. Lime only increases yields when the soil is strongly acidic. On winter pastures in southern Oklahoma and northern Texas, the point at which lime pays is pH 5.5. If your soil is more

acidic than this, lime will generally pay. If your soil pH is more basic than this, lime will generally not pay.

Another point to remember is that the effects of lime last more than one year. Depending on several factors, one application of lime will usually last three to five years. Thus, the effects of liming a strongly acidic soil are even greater than they first appear.

To determine if you need to lime

winter pastures or any other crop, a good soil sample is essential. You must properly sample your fields and then send the samples to a reliable lab. Proper collection technique is the key to a good soil sample. For more information on proper soil sample collection, see *Soil Sampling Is the Key to a Good Test* in the August 2002 edition of *Ag News and Views*: [www.noble.org/Ag/Soils/SoilSamplingIsKey](http://www.noble.org/Ag/Soils/SoilSamplingIsKey). ■