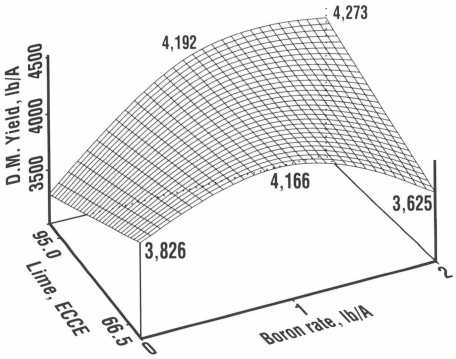


Figure 2. Rose clover response to lime ECCE and rate of B.

availability and increase the need for B fertilization. Research in Texas has shown that use of 100 percent effective calcium carbonate equivalent (ECCE) lime decreased B availability to clover and allowed the plants to tolerate 2 lb B/A (**Figure 2**). The less efficient 62 percent ECCE limestone was not as effective in increasing soil pH and lowering B availability. With the less effective liming material, the 2 lb/A rate appeared to be toxic to the clover, decreasing yield to levels below the zero B treatment.

In summary, liming soil to provide the proper pH for macronutrient availability and activity of legume nodulating bacteria can increase plant needs for micronutrients, including B. For optimum clover production, don't overlook this significant nutrient interaction on highly leached, limed soils. Soil tests for B availability and lime requirement are suggested. ■

Nitrogen sources . . . from page 13

migration result from N source application, then N source should influence soil physical properties such as water content at the permanent wilting point. There were no significant differences in either soil layer in water content (at the permanent wilting point) among the four N sources or between the N treated and the no-N check.

Summary

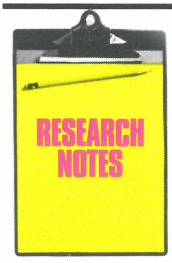
Grain yields at Ottawa and Powhattan during the period 1985 through 1988 indicated that plots receiving N yielded significantly more grain (overall average of 78 bu/A) than no-N check (average of 37 bu/A). There were no significant differences in grain yield among the four N sources.

The primary influence of 20 years of N fertilization has been on soil acidification and associated changes in nutrient availability. Lower nutrient availability probably reflected greater nutrient removal in the higher yields of N-fertilized areas.

Thus, N source selection should be based on:

- cost of N
- adaptability of the N source to the producer's crop-tillage system
- availability of N supply.

Pound for pound, all N sources in this study were shown to be agronomically equal when properly applied. ■



Kansas

Evaluation of Starter Fertilizers for Grain Sorghum Production

THREE YEARS OF FIELD WORK have provided good evidence of the responsiveness of grain sorghum to high phosphorus (P) starter fertilizers on low P soils. Yields were increased an average 21 to 27 bu/A (1,176 to 1,512 lb/A). The magnitude of response is comparable to that of wheat and corn under similar conditions. Results of the studies indicated no differences in effectiveness between a 9-18-9 (N-P_2O_5-K_2O) orthophosphate liquid starter and a polyphosphate containing 7-21-7. Researchers concluded that selection of a starter fertilizer source for grain sorghum should be made on the basis of economics and availability rather than formulation ingredients. ■

Source: R.E. Lamond and D.A. Whitney. Published in Journ. Fertilizer Issues, 8(1): 20-24 (1991).