

Summer 2007, No. 6

DON'T NEGLECT BERMUDAGRASS NUTRIENT NEEDS THIS SUMMER

Warm season forage growth and production is upon us. Among the most important warm season hay and pasture forage crops in the southern U.S. is bermudagrass, whether hybrid or common. The predominance of bermudagrass can be attributed to its high yield potential, drought resistance, and tolerance of acidic soil conditions. It can be produced for grazing, hay, or a combination of the two. Hay is generally cut at about 30-day intervals with from two to as many as six cuttings per season, depending on climate and moisture. In hay production, nutrient uptake is essentially the same as removal, so whatever is taken up by the crop is exported from the field in the product. In a grazing scenario some nutrients are returned to the soil (recycled) via animal urine and feces. How much to credit to this recycling depends on distribution of animal waste which is a function of several factors such as grazing intensity and water and shade distribution. **Maintaining adequate and balanced nutrition is fundamental to profitable bermudagrass production.** Skimping on needed fertilizer inputs can reduce yield and forage quality, as well as stand density and longevity. Additionally, reserves of soil nutrients such as P and K can be rapidly depleted in hay production where inputs are insufficient. Following are a few basic facts to keep in mind when fertilizing bermudagrass this season.

Adequate N nutrition is associated with improved shoot and root growth, stress tolerance, resiliency, and higher protein content. Bermudagrass will take up about 50 lb of N per ton of hay harvested. Tissue levels of N should be maintained at about 2.2% of dry matter. Basic recommendations call for the application of 100 lb N/A in the spring, with the remainder applied in split applications just after, or between harvests. Of course, as with any general recommendation this should be adjusted to specific conditions.

Phosphorus fertility is commonly associated with increased root growth and branching, increased N use efficiency, and improved drought tolerance and recovery. Bermudagrass will take up about 12 lb P_2O_5 /ton, thus a top-yielding hay crop can remove as much as 100 lb P_2O_5 /A. In a rapidly growing, high-yielding crop, uptake can equal 1.2 lb P_2O_5 /A per day. Fertilizer P applications should be based on soil test results, but crop removal can also be useful information in crafting recommendations.

Adequate K fertility is associated with increased disease resistance, improved winterhardness, maintenance of good stand density, and better N use efficiency. Maintenance of adequate K levels through the summer months to the onset of dormancy is important in the manufacture of carbohydrates for root growth and carbohydrate storage. Bermudagrass will take up about 50 lb of potash (K_2O) per ton with uptake reaching as much as 4 lb K_2O /A per day in a rapidly growing crop. Consequently, reserves of soil K may be reduced rather rapidly under intensive bermudagrass production. Soil testing is useful in developing K recommendations for bermudagrass. However, removal should be considered as well, especially in sandy soils with limited cation exchange capacity (CEC).

Secondary elements and micronutrients can also be important in achieving optimal bermudagrass production. A good example of this was shown in a recent east Texas study on Tifton 85 bermudagrass where in the fourth year of production yield was increased one ton, or 17%, with the application of S fertilizer (*Better Crops with Plant Food*, No. 2, 2007).

We started this season with excellent soil moisture in many areas. Thus, the stage is set for a good bermudagrass production year. Let's make sure that fertility doesn't limit that potential. Complete and balanced nutrition helps ensure optimum yield and forage quality, improved stand longevity, and maximum profit.

—WMS—

For more information, contact Dr. W.M. (Mike) Stewart, Southern and Central Great Plains Director, IPNI, 2423 Rogers Key, San Antonio, TX 78258. Phone: (210) 764-1588. E-mail: mstewart@ipni.net.

Abbreviations in this article: N = nitrogen; P = phosphorus; K = potassium; S = sulfur.

Note: *Plant Nutrition TODAY* articles are available online at the IPNI website: www.ipni.net/pnt