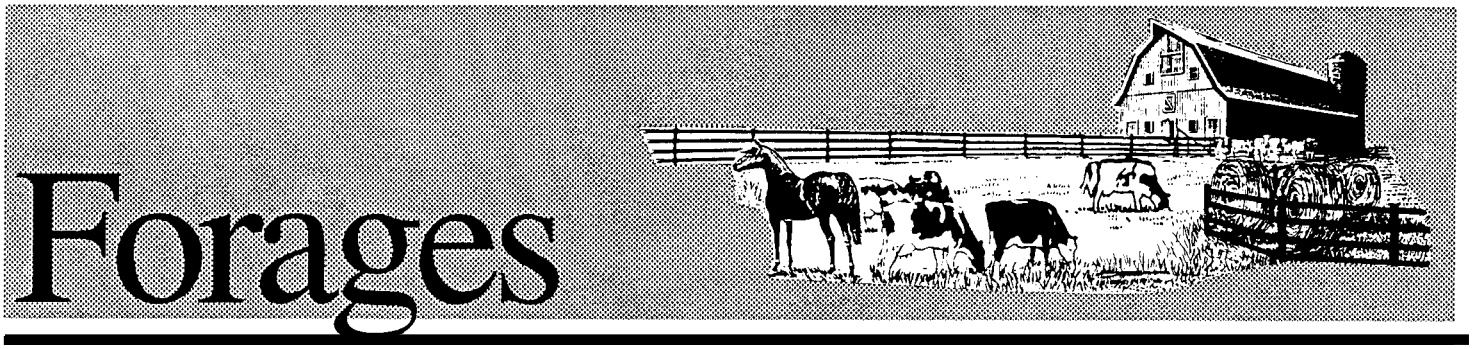

FERTILIZATION OF BERMUDAGRASS

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General

The first step toward high yields and persistent, weed-free stands is to take a soil sample and have it analyzed prior to planting and take a new sample annually thereafter. This leaflet presents generalized recommendations, but actual fertilizer needs may vary greatly among fields. The best rule of thumb is very poor compared to a soil test for nutrients other than nitrogen; and, without soil-sample analysis, a farmer may be either over-fertilizing and spending money needlessly or under-fertilizing and not achieving the maximum economic yield.

Nitrogen and potassium are very soluble in water and readily leach from the root zone. In practical terms, this means that large amounts of these fertilizer nutrients should not be applied at one time because considerable losses may occur due to leaching, particularly on sandier soils and after heavy rains. Split applications of these nutrients during the growing season are generally recommended.

If the bermudagrass is grazed, a portion of the fertilizer requirements described below will be supplied by the manure from the cattle. However, the amount supplied by the manure will be variable depending on the grazing management and on weather conditions. Again, it is important to soil test to determine the fertilizer needs of the pasture.

Establishment

Soil pH should be between 5.8 and 6.5. Necessary lime should be applied and incorporated prior to sprigging. Phosphorus should be applied and incorporated at the recommended rate prior to sprigging. Potassium may be applied either prior to or shortly after sprigging. When large amounts of potassium are recommended, applying in a split application will cause the fertilizer to be used more efficiently. This practice will also assure that some potassium is available both at establishment and in the fall to promote winter survival. No more than 60 lb of nitrogen should be applied at establishment as excess nitrogen encourages weed growth and, if severe weed problems are anticipated, apply the nitrogen only after growth of the bermudagrass has started; earlier applications will encourage earlier weed growth. Sulfur (10-12 lb/A) may also be required on sandier soils.

First Year

Additional nitrogen should to be applied after establishment during the first year to maximize growth and provide rapid establishment. Two applications of 60 to 80 lb N/A are recommended: one in early July and one in August. A second application of potassium may also be needed in July if the stand was sprigged early and is establishing well.

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Established Stands

The pasture should be soil tested annually and fertilized according to the recommendations. Each ton of dry bermudagrass forage will remove about 40 lb of nitrogen and potassium (K_2O) and 12 lb of phosphorus (P_2O_5). Thus the fertilizer requirement is higher with increased yield. The table below gives a generalized estimate of fertilizer requirements where the bermudagrass is harvested for hay and four to five tons/yield is anticipated.

Fertilization of bermudagrass for hay

Soil fertility	N	P	K lb/A
Low	240-400	100	200
Medium	240-400	50	100
High	240-400	0	0

The nitrogen should be applied in 60 to 100-lb increments when growth first begins and after each harvest. Potassium should be applied in a split application with half applied when growth begins and the remainder applied mid-season (usually after the second cutting). Low potassium will result in low yields, increased leaf spot disease and, particularly if deficient in the fall, increased winter-kill. Approximately 25 lb of sulfur are required annually on the lighter soils. The sulfur may be contained in the other fertilizer. If not, it must be applied separately.

On some soils other trace minerals, such as boron and iron, may be required. These needs can be determined by soil test.

Fertilizer rates are lower for the same level of production when pastures are grazed rather than grown for hay because much of the fertilizer is returned to the soil in the animal feces and urine. Apply recommended rates of phosphorus and potassium (from soil test or table below) and 60 lb of nitrogen per acre before growth begins in spring. As above, potassium may be more effective if applied in split applications. The requirement for phosphorus may decline over years of continued grazing. Repeat nitrogen application as required to produce sufficient forage up to mid-August. If stocking rate is changed, adjust nitrogen rate accordingly.

Fertilization of bermudagrass for pastures

Soil fertility	N	P	K lb/A
Low	150	100	100
Medium	150	40	50
High	150	0	0

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