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BERMUDAGRASS RESPONDS TO BALANCED NPK NUTRITION

Balanced nutrition is one of the vital management practices for high bermudagrass yield, quality, stand longevity, and input use effectiveness. Nitrogen, phosphorus and potassium fertilizers contribute most when good stands, growing on productive soils, are managed and subjected to a harvest schedule capable of developing the full potential of this top-quality livestock feed source.

Total nutrient requirements are site-specific. Nutritional requirements change with management practices, yield level and forage quality expectations. Plants harvested at early growth stages are high in nutrients such as nitrogen, potassium and sulfur since all three are essential for protein formation. Research has shown that each ton of quality forage removes 50 pounds of nitrogen, 12 pounds of P_2O_5 , and 47 pounds of K_2O . Thus, each acre of bermudagrass harvested at a 4-week interval and yielding about 7 tons per acre would remove nearly 350 pounds of nitrogen, 85 pounds of P_2O_5 , and 330 pounds of K_2O . Also included would be about 25 pounds of magnesium and 40 pounds of sulfur.

Removal of soil nutrients without adequate replacement can be costly. A balanced fertilization program helps to:

- Avoid a decline in stand due to severe winter injury or competition from weed species.
- Minimize disease problems brought on when crops are under stress from a nutrient shortage of potassium or from an imbalance among nutrients such as nitrogen, potassium and/or sulfur.
- Avoid losing crop stress resistance to drought, temperature extremes, frequent harvest, or injury from pests and diseases.
- Prevent an early decline in both forage yield and especially forage quality.

Consider the following when growing high quality bermudagrass feed for livestock.

- Select productive fields, soil test, and incorporate lime and build-up phosphorus and potassium needs before crop establishment.
- Split apply maintenance nitrogen, phosphorus and potassium after each cutting, or split after the first and the next to last harvest in the fall. The objective is to stimulate rapid regrowth, provide full-season nutrient needs, and attain optimum nutrient use effectiveness.
- Phosphorus, potassium, sulfur, magnesium and boron are the nutrients most often needed. Field studies, in general, show that total nutrient needs for maintenance are close to the amounts removed in the harvested forage at the site.
- Visible nutrient deficiency symptoms are seldom seen on leaves of high yielding bermudagrass plants. Early warning signals might include the following: slow regrowth after harvest, disease problems, stand loss, winter kill, inefficient nitrogen use because of nutrient imbalances, increased weed problems and reduced forage quality and palatability.

For most profitable yields and highest forage quality, balanced nutrition is a best management practice on bermudagrass.

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Note: *Agri-Briefs* are available online at the PPI web site: ppi-far.org/agri-briefs