

South Dakota Rancher®

Management tips for South Dakota livestock and grassland managers

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Fertilizing Pastures

Fertilizing Smooth brome grass pastures this spring can be an excellent way to improve productivity. However, with the cost of fertilizer quickly exceeding the potential increase in production realized from most perennial grass pastures, managers should carefully evaluate the point of diminishing returns in these systems.

Older stands of smooth brome grass may become dense and sod-bound, markedly lowering productivity as a result of low nitrogen cycling. In pastures, smooth brome grass must be fertilized with nitrogen (N) to avoid becoming sod-bound and improve productivity.

smooth brome grass pastures should occur in early-May when the onset of the rapid growth phase occurs. Nitrogen can come from any number of sources, such as liquid N solutions, urea, or ammonium nitrate. If smooth brome grass pastures are grazed in the spring and fall, 80-20% split applications of N fertilizer in early-May and early-September will produce more desirable results. In addition, over fertilization of smooth brome grass also can cause problems. Excessive N availability may lead to stem lodging resulting in poor utilization, especially in wet years.



Photo: E. Mousel

Although smooth brome grass will respond to N rates of up to 275 lb/acre, research in eastern South Dakota has suggested that applying about 90 lb/acre likely will produce the highest economic returns (Figure 1). Nitrogen fertilizer applications to

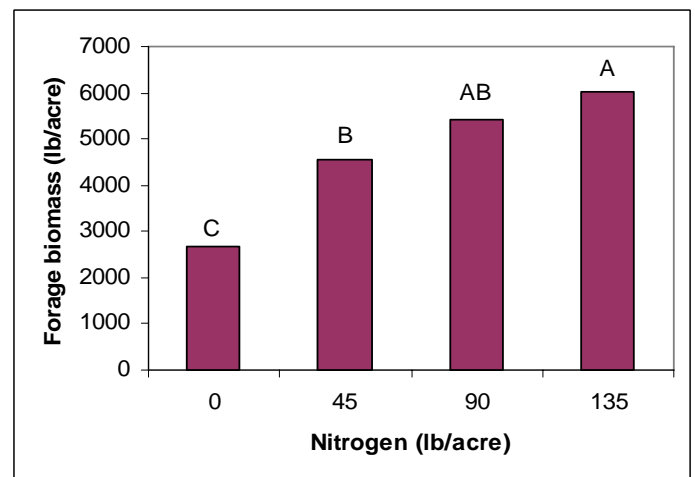


Figure 1. Optimum economic return from the application of nitrogen fertilizer to smooth brome grass pastures occurs at about 90 lb/acre in eastern South Dakota (A.J. Smart).

Rapid accumulation of forage as a result of excessive N applications also can lead to grass tetany (Mg deficiency) and nitrate-N toxicity to

grazing livestock. Soil tests should be conducted every two years in smooth brome grass pastures to determine phosphorous (P) and potassium (K) needs.

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