

Inexpensive Supplements for Beef Cattle Georgia Cattleman, November 2001

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I'd like to sell you a winter supplement that will improve weaning weights, increase conception rates and improve cow body condition scores. This product will also decrease hay needs and substantially reduce next year's fertilizer bill. Many cattlemen have known for years that the feats advertised above can be accomplished by overseeding warm season pastures with winter annual legumes, yet few producers take advantage of this practice. In this article I'll review characteristics of the major winter annual clovers and discuss their possible economic impact.

There are several types of winter annual clovers, but due to space constraints, I'll discuss four species commonly grown in Georgia. Most of these clovers are best suited to mild winters and well-drained soils characteristic of the Coastal Plain and Lower Piedmont; however, many can fit into forage programs in the Upper Piedmont.

Crimson clover is probably the most frequently utilized cool season annual legume in Georgia. It has excellent seedling vigor and good tolerance of soil acidity, but does not grow well in poorly drained soils. Crimson clover typically produces a lot of winter forage, and varieties differ markedly in their distribution of forage production. AU Sunrise, AU Robin and Flame all tend to produce forage earlier in the season than Dixie. Recommended seeding rate is 20 - 30 pounds per acre.

Rose clover also produces early spring forage and has good tolerance of soil acidity and grazing pressure. Total forage production can exceed that of crimson clover. However, rose clover has poor seedling vigor and consequently produces less winter forage than crimson or arrowleaf clover. Overton R-18 is a recommended variety and is reported to be a good reseeder. Recommended seeding rate is 8 - 12 pounds per acre.

Arrowleaf clover is also a later maturing winter annual that produces large amounts of forage in mid to late spring. Acidic and poorly drained soils greatly decrease arrowleaf clover yields. Arrowleaf clover produces a large proportion of hard seeds and is a good reseeder. Yuchi is the most popular variety, but is susceptible to a fungal disease complex that can cause stand failures. A new variety called Apache will be released soon and offers improved resistance to these fungal diseases. If you have recently experienced arrowleaf stand losses, this new variety may be useful in your forage program. Keeping pastures with arrowleaf clover grazed to 2-4" will improve forage production and may also aid in reducing foliar diseases. Recommended seeding rates for arrowleaf clover are 5 - 10 pounds per acre.

Ball clover has a shorter growing season than crimson clover, but is better suited to wet soil conditions. Ball clover is sensitive to drought conditions, but tolerates close grazing and soil acidity and is a good producer of hard seed. Common and Segrest varieties are normally available and recommended seeding rates are 2 - 3 pounds per acre.

Other annual clovers reseed naturally and are already present in many Georgia pastures. One example is **hop clover** which is tolerant of acid soils and low fertility. In some areas, hop clover is fairly productive, but its short productive period makes utilization difficult. In most areas, hop clover is present, but productivity is low and little benefit is gained from its presence.

This is the time of year to establish winter annual clovers. Soil pH, phosphorus and potassium levels should be determined to ensure good establishment, growth and nitrogen fixation. Seed can be broadcast at the appropriate rate onto dormant bermudagrass or bahiagrass sod. It is critical to minimize dormant grass residue before seeding clovers. Pastures should be mowed or closely grazed to a stubble height of 1-3". This decreases shading of seedling clovers and improves legume establishment and forage production.

If the amount and quality of clover forage is priced relative to an equivalent nutrient amount of corn or soybean meal, the economic value of winter annual clovers can be dramatic. Assuming clover yields 3000 pounds of forage with nutrient values of 17% crude protein and 60% total digestible nutrients (TDN), winter annual clovers produce 510 pounds of crude protein and 1800 pounds of TDN per acre. If we also assume corn contains 90% TDN and soybean meal contains 44% crude protein, the clovers have produced the nutrient equivalent of 2000 pounds of corn (38 bushels) per acre on a TDN basis or 1160 pounds of soybean meal (0.58 tons) on a crude protein basis.

Taking this scenario one step further, we can assign current market values for corn (\$2.44 per bushel) and soybean meal (\$201 per ton) and estimate clover return per acre. Using the above figures and current market prices, one acre of clover equals \$92 of supplemental corn or \$116 of supplemental soybean meal. Even if the cattle are only able to utilize 50% of the available clovers, you still receive \$46-58 in supplemental calories or crude protein. Keep in mind that these values are based only on the nutritive value of the forage. Not included in the calculations are 1) decreased hay needs, 2) decreased labor costs associated with hay feeding, 3) nitrogen supplied by the clovers to the pasture (approximately 100 lbs nitrogen per acre), and 4) clover seed and establishment costs.

Cool season annual clovers fit well into many forage programs in Middle and South Georgia. Take advantage of these species to supply winter forage production and help improve your bottom line.