

Performance of Beef Cows Grazing Ryegrass, Fescue or Fed Hay

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Findings

- Cows grazing pastures interseeded with Georgia 5 tall fescue before and during the breeding season had lower pregnancy rates than cows grazing pastures overseeded with ryegrass or fed hay.
- There was no difference in pregnancy rates between cows grazing ryegrass or those fed hay and a 20% protein supplement.
- Treatments did not affect calf performance.

Introduction

Beef producers often face a shortage of forage during the winter in Louisiana. Bermudagrass and bahiagrass typically green up in late March and will produce some forage into November in the area around Rosepine. This leaves a potential for a shortage of forage for about four months each year. Most producers overcome this shortage by harvesting hay during the spring and summer and feeding it during the winter. Many producers also plant annual ryegrass for grazing in late winter and spring.

Ryegrass production requires planting each year, whereas Georgia 5 tall fescue is a perennial cool-season forage that has been shown to survive the summers in Louisiana and should provide forage at a similar time to annual ryegrass. Since it is a perennial, the need for annual planting of a cool-season grass would be eliminated. A negative aspect of the Georgia 5 tall fescue variety is that it is endophyte infected. Research in other states has indicated a decrease in performance of beef cattle that graze the endophyte-infected fescue.

The objective of this experiment was to compare performance of mature cows and their calves grazing bermudagrass/bahiagrass pastures that had endophyte-infected Georgia 5 tall fescue established in the sod, grazing similar bermudagrass/bahiagrass pastures that were over seeded each year with ryegrass, or grazing bermudagrass/bahiagrass pastures and receiving hay.

Experimental Approach

There were two replicates of each of the three treatments or a total of six pastures. Each replicate pasture was 20 acres that had been subdivided into four 5-acre paddocks. The study was conducted for two years. Eighteen mature beef cows were grazed in each pasture. The 60-day breeding season began on May 8, with the first cows calving about February 20.

Cows were maintained on treatment pastures year round. The cows were rotated among the four paddocks at approximately weekly intervals depending on forage availability. In the late fall when forage growth would not meet the demands of grazing, each group of cows was confined in one of the four paddocks and fed hay until calving. As they calved, cows on the fescue and ryegrass treatments were moved to grass. Cows on the hay treatment were moved to another paddock and received hay plus a 20% crude protein supplement until summer grass was available.

Results and Discussion

There was no difference in cow weights before calving (February) or at the start of the breeding season (April); however, cows grazing ryegrass were heavier at the end of the breeding (July) season than cows grazing fescue or cows that were fed hay (Table 1). Cows grazing ryegrass gained 37 pounds during this period compared to 5 to 10 pounds for cows on the other treatments. There was no difference among treatments in body weights in September or at weaning.

All cows lost weight between February and April (Table 1). This would be expected, and most of the weight loss would be accounted for by the weight of the calf. The cows on the fescue and hay treatments gained little weight from April to September. In contrast, the cows grazing ryegrass gained weight from April to July, then lost weight from July to September. All groups lost weight from September to October.

Cows fed hay after calving had lower condition scores than cows grazing either ryegrass or fescue in April (Table 2). In July, cows grazing ryegrass had higher condition scores than cows grazing fescue or those fed hay after calving, indicating that cows grazing fescue lost condition during this period.

There was little change in condition score among treatments after July. Although there were treatment differences in condition score, scores averaged at or above 5 at all times, which is high enough for satisfactory performance of most beef cows.

There was no difference in calf performance due to any of the grazing treatments (Table 3). Birth weight of the calves averaged 86 to 88 pounds, and weaning weights averaged from 465 to 485 pounds.

Cows grazing fescue had lower pregnancy rates than either cows grazing ryegrass or cows fed hay (Table 4). Fall pregnancy rate of cows grazing fescue when averaged over both years was 64% compared with 87% for cows grazing ryegrass and 90% with cows fed hay. There was not a year by treatment interaction, but there was a year effect on pregnancy rate. All treatment groups had higher pregnancy rates in 1997 compared with the same treatment in 1998. The most logical explanation for this difference is environmental temperature. Temperatures for 1998, especially during the May and June breeding season, were higher than normal; many of the daily highs matched or exceeded the 25-year record highs for the station.

The endophyte associated with infected fescue produces a toxin that affects the metabolism of the animal. One of the effects of this toxin is a decrease in the animal's ability to dissipate heat, resulting in heat stress at lower temperatures than with cattle not consuming the toxin. There also is a change in the endocrine profile of animals grazing fescue.

Results from this study indicate that cows grazing fescue before and during the breeding season have lower conception rates than cows grazing ryegrass or fed hay plus a supplement. Research in Tennessee has indicated a negative effect of grazing endophyte-infected fescue during the breeding season, and these researchers have suggested that the cows be removed from fescue during the breeding season.

In our study, the breeding season started May 8. Bermudagrass and bahiagrass were available for grazing in addition to the fescue. Research has shown that if other forage is available along with the endophyte-infected fescue, cattle will consume less of the fescue, resulting in lower intake of the toxin. The cattle in this study were probably not consuming more than 25% of their diet as fescue by late May, yet there was a decrease in reproduction. This suggests that either there is a carryover effect of the toxin or that because of the higher temperatures at the Rosepine Research Station compared to the mid-south, less toxin is required to affect reproduction.

Table 1. Weight (lb) of cows grazing fescue or ryegrass or consuming hay

Date	Fescue	Ryegrass	Hay	SE
February	1325	1307	1291	13
April	1221	1239	1206	15
July	1226 ^a	1276 ^b	1217 ^a	13
September	1232	1261	1221	20
October	1195	1232	1215	18

^{ab}Treatment means within a row with different superscripts are different (P < .05).

Table 2. Condition score of cows grazing fescue or ryegrass or consuming hay

Date	Fescue	Ryegrass	Hay	SE
February	5.8	5.6	5.5	0.2
April	5.7 ^a	5.8 ^a	5.0 ^b	0.1
July	5.4 ^a	5.9 ^b	5.2 ^a	0.1
September	5.4 ^a	5.7 ^b	5.2 ^a	0.1
October	5.4	5.6	5.2	0.1

^{ab}Treatment means within a row with different superscripts are different (P < .05).

Table 3. Weight (lb) of calves raised by cows grazing fescue or ryegrass or fed hay

Date	Fescue	Ryegrass	Hay	SE
February	88	86	88	2
April	174	183	170	3
July	322	342	322	8
September	448	472	443	12
October	474	485	465	12

Table 4. Fall pregnancy rates (%) of cows grazing fescue or ryegrass or fed hay

Date	Fescue	Ryegrass	Hay	SE
Both Years	64 ^a	87 ^b	90 ^b	4
1997	72 ^a	92 ^b	92 ^b	3
1998	56 ^a	83 ^b	89 ^b	5

^{ab}Treatment means within a row with different superscripts are different (P < .05).