Jesup, A Superior New Endophyte-Free Tall Fescue

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The advantages of endophyte-free (fungus-free) tall fescue in eliminating the toxicosis problem and greatly improving cattle conception rates and gains of growing animals are well known. Unfortunately, as many cattle producers have discovered, when currently available endophyte-free tall fescue varieties are grazed closely during heat and drought in summer the stands have thinned and sometimes disappeared. Thus, even though stands can be maintained by not overgrazing in summer, endophyte-free tall fescue has earned a reputation for unreliability even though animal performance is superior.

Selection by Joe Bouton at the University of Georgia for improved persistence after hot summer conditions has resulted in release of a new endophyte-free tall fescue variety, Jesup, that has performed well in a 3-year (1992-1995) grazing study at the Central Georgia Station, Eatonton. This grazing study was done in cooperation with Vaughn Calvert, Ray Harwell, and Frank Newsome. The results indicate that this new variety should be useful to cattle producers wishing to eliminate the losses in reproduction and calf weaning weights that often occur from endophyte-infected pastures that make up most of the tall fescue acreage in the USA.

How the grazing study was conducted

Two-acre pastures of Jesup endophyte-infected and endophyte-free tall fescue were compared at low and high grazing pressure with beef steers grazing in autumn and again in spring. Two pastures of each grazing treatment were used. Stocking rates were adjusted to maintain approximately 800 and 1500 lb/acre of available dry forage for the high and low grazing pressures, respectively. This resulted in available forage per steer of approximately 1000 lb and 460 lb for the low and high grazing pressures, respectively. Grazing was continued until summer heat and drought stopped tall fescue growth. Nitrogen at 60 lb N/acre was applied to pastures in September and again in February each year. Pastures were stocked in October with 500 lb steers and grazed until December. Steers weighing about 650 lb were grazed from March until June. Severe drought from late April until October in 1993 turned tall fescue brown and placed great stress on plants, with daily maximimum temperatures 5 to 10 F above normal during June-September. No autumn grazing was possible that year.

How did Jesup hold up under grazing?

During the dry hot spring and summer of 1993, pastures were grazed closely at the high grazing pressure treatment and after some autumn rainfall they recovered more slowly than those grazed at lower grazing pressure (maintaining more available forage). However, there was no difference in stand cover of endophyte-free and infected Jesup tall fescue the following years (Figures 1 and 2). Thus, in this study and in other small plot experiments, endophyte-free Jesup tall fescue appears to be superior to other endophyte-free varieties in tolerance to grazing and drought. We feel that endophyte-free Jesup will not equal the toughness of infected tall fescue when subjected to continuous hard overgrazing in summer but with moderate summer grazing management it should be a dependable pasture plant. Our endophyte-free Jesup pastures are now holding up well during the fifth grazing year.

How did steers perform on Jesup?

Since our seed supplies of this new variety were limited we did not have large pastures for a beef cow/calf study but the steer results indicates the potential of Jesup. Stocking rate was higher on endophyte-infected than on endophyte-free Jesup, a result of reduced intake by steers on the infected pastures (Table). Steers grazing on infected Jesup suffered typical toxicosis symptoms of intolerance to heat, failure to shed winter hair coats, and nervousness.

The ADG (average daily gain) of steers grazing endophyte-free Jesup was excellent during spring, averaging 2 lb/day even at high grazing pressure. In contrast, the ADG on infected tall fescue was only 0.66 lb/day at high grazing pressure. During autumn, ADG on endophyte-free Jesup was lower than in the spring. The adverse effect of endophyte-infected tall fescue on ADG was less than during spring, a result of toxic alkaloids being produced by the fungus inside the grass during cool weather.

Although higher grazing pressure reduced the ADG of steers, the gain/acre was greatly increased during spring on endophyte-free Jesup. At high grazing

Beef steer performance on Jesup tall fescue pastures at low and high grazing pressures, during spring (3 year average) and autumn (2 year average), Central Georgia Branch Station.

	Steers/acres		ADG, lb		Gain/acre, lb	
	Low	High	Low	High	Low	High
Jesup endophyte-free						
Spring	1.46	2.12	2.50	2.04	194	317
Autumn	1.34	2.05	2.00	1.08	136	148
Jesup endophyte-infected						
Spring	1.90	2.29	0.95	0.66	74	105
Autumn	1.52	2.51	1.46	0.88	100	120

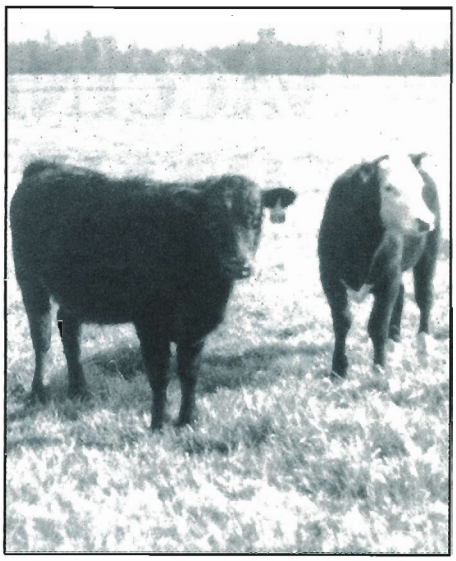
Excellent stand in May 1994 of Jesup tall fescue pasture iwth high grazing pressure after severe heat and drought year of 1993.

pressure, the total gain/acre of spring and autumn exceeded 450 lb/acre even at this relatively low nitrogen fertilization rate. Higher nitrogen fertilization would substantially increase forage production and increase the potential stocking rate, especially during spring.

Conclusions and recommendations

Jesup, a new endophyte-free tall fescue variety, is tolerant of grazing and drought and should be more persistent in pastures than other endophyte-free varieties. Animal performance is excellent. Growth habit and seasonal production are similar to Kentucky 31 with less winter production than AU Triumph. Jesup is well adapted to much of the southeastern USA but is not recommended in the Coastal Plain area where it is not as persistent as infected tall fescue.

Planting should be done during September or October on land free of live tall fescue plants. A well prepared seedbed on crop land is ideal for good stands. No-till planting into existing sod can be done if all the old infected tall fescue is killed with a herbicide (Gramoxone or Roundup). Getting a good kill will require two herbicide applications about one month apart. A seeding rate of 20 to 25 lb/acre is recommended. Jesup seed are being produced and marketed exclusively by Pennington Seed, Madison, GA. Seed supplies are limited so it is important to contact your seed dealer early.



Beef steers on Jesup tall fescue pasture at high grazing pressure, March 1995.