

# **PUBLICATIONS**

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## COW-CALF PERFORMANCE FROM 'TAM-90' ANNUAL RYEGRASS OVERSEEDED ON BERMUDAGRASS AND GRAZED AT THREE STOCKING RATES

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**Background.** Common (COM) and 'Coastal' (COS) bermudagrass pastures which have received nitrogen (N) fertilizer and overseeded with 'TAM-90' annual ryegrass are components of a long-term nutrient cycling study. Pastures were lightly disked and TAM-90 planted via drill at 30 lbs/ac on Oct. 17. Fertilization included a single application of 0-117-117-52S-28Mg-1.24B, and split applications of N for a total of 202-0-0 from November through April 30. At 2004 spread fertilizer prices of about \$235/ton for 0-117-117 (\$76.38/ac) and \$245/ton for 34-0-0 (\$69.91), the total fertilizer costs would have been about \$146/ac. Angus x Brahman (AxB) cows and their fall-born, Simmental-sired calves (SIMX) grazed all pastures at three continuous stocking rates from Feb. 19 to June 13 (115 days). All calves were double-implanted pre-weaning with Ralgro. Calf ADG represents the average of both steers and heifers.

**Research Findings.** The SIMX calves had ADG of 2.36, 3.31, and 3.37 lbs/da, respectively, from COM-TAM90 pastures that were high (HI), medium (ME), and low (LO) stocked (Table 1). Respective calf ADG from HI, ME, and LO stocked COS-TAM-90 pastures were 2.57, 3.37, and 3.40 lbs/da. Thus, for both COM and COS pastures, the HI stocking rate was the level of reduced forage availability that restricted calf gains. Resultant gains per calf were slightly less than 300 lbs from HI stocked pastures and nearly 400 lbs from ME and LO stocking rates. The AxB cow gains ranged from maintenance to 2 lbs/da. Figure 1 shows that growth rate of these SIMX calves from 435 lbs on Feb. 18 to 700 to 830 lbs at weaning on June 13 was dependant upon stocking rate.

Stocking rates have been presented as both 1000 lbs = one animal-unit (AU) or 1500 lbs = one cow-calf unit to illustrate total body weight used to create the graded levels of forage mass. Using the 1500-lb cow-calf unit definition, stocking rates ranged from about 1 cow-calf unit/ac to slightly more than 2 cow-calf units/ac (Table 1). At those stocking rates, calf gain/ac was nearly identical for both COM and COS for any specific stocking rate, and these gains ranged from about 385 lbs/ac (LO), to 580 lbs/ac (ME), to 615 lbs/ac (HI).

**Application.** Medium stocked TAM-90 ryegrass overseeded on bermudagrass pastures resulted in an optimum level of cow and calf performance with respect to risk and calf gains/ac. However, with increased fertilizer costs, forage utilization via increased stocking rates becomes an increasingly important management decision. Decisions to increase utilization of forage DM requires not only economic considerations, but also awareness of sustainability of the pasture

resource and risks related to unseasonable rainfall and temperature conditions. Even with the projected, accelerated fertilizer costs, the cost/lb gain for fertilizer only remained at less than \$ .25/lb calf gain at the medium and high stocked pastures.

**Table 1.** Cow-calf performance from TAM-90 ryegrass and Coastal or common bermudagrass from 2-18 to 6-13 (115 days).

PASTURE	STK RTE	ADG		GAIN/CALF (lbs)	STOCKING RATE <sup>1</sup>		CALF GAIN / AC <sup>1</sup>	
		COW	CALF		1000 lb An-unit	1500 lb Cw-Clf	1000 lb An-unit	1500 lb Cw-Clf
		— lbs / da —			— hd / ac —		— lbs / ac —	
COM	H	.05	2.36	271	3.40	2.27	921	615
COM	M	.80	3.31	381	2.25	1.50	857	572
COM	L	1.84	3.37	388	1.47	0.98	570	380
COS	H	0.43	2.57	296	3.13	2.08	926	616
COS	M	1.05	3.37	388	2.27	1.51	881	586
COS	L	2.10	3.40	391	1.49	0.99	583	387

<sup>1</sup>Stocking rates shown are either 1000 lb = 1 animal unit or 1500 lbs = 1 cow-calf unit.

**Fig. 1.** Growth in body weight of suckling calves grazing TAM-90 overseeded on common (COM) or Coastal (COS) bermudagrass and grazed at low (LO), medium (ME), or high (HI) stocking rates.

