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BACKGROUNDING STOCKER CALVES ON STOCKPILED TIFTON 85 BERMUDAGRASS WITH VARIOUS PROTEIN SUPPLEMENTATION RATIOS

F. M. Rouquette, Jr., J. L. Kerby and G. H. Nimr

Background. Preparing freshly-weaned calves for the next phase of stocker grazing prompted initiation of the VAC-45 program which is a component of the Texas Value Added Calf (TEX-VAC) management program. These animal-health-based programs have revealed numerous opportunities to reduce and/or eliminate death losses as well as to maintain positive weight gains post-weaning via proper nutritional regimens. This experiment was initiated to quantify animal performance on stockpiled Tifton 85 bermudagrass (TIF85) for fall weaned calves. Bonsmara-sired steers and heifers with F-1 (Hereford x Brahman) dams plus Brahman steers, all about 7 months of age, were weaned October 3, 2003. All calves were weaned in dry lot with access to *ad libitum* Coastal bermudagrass hay and 2 lbs/hd/da of a 4:1 (Corn:SBM) ration. Ten days post-weaning, all calves were allowed access to Coastal bermudagrass pasture while continuing to receive hay and supplement. During this period, all calves received a 7-way vaccination, dewormer, and Revelor G for steers only. Heifers were not implanted. On October 31, 2003 cattle were allotted to the following treatments by breed type, sex, and weight: (1) TIF85 pasture + mineral; (2) TIF85 plus 2 lbs/hd/da of 2:1 Corn:SBM, 22% protein ration (22-SUP); (3) TIF85 plus 2 lbs/hd/da of a 1:1 Corn:SBM, 28% protein ration (28-SUP); and (4) TIF85 plus 2 lbs/hd/da of a 1:2 Corn:SBM, 34% protein ration (34-SUP). Additional ingredients for each ration included 1.3% salt, 0.63% dicalcium phosphate, 0.3% magnesium oxide, and .06% Rumensin 80 to enhance performance and reduce ration gorging by dominant animals. All supplemented cattle were group-fed a 7-day ration during a 5-day period (M-F). All treatments had 3 replicate pastures and were stocked at six 515-lb stockers/ac from Oct. 31 until Jan. 9 (70 days). The TIF85 pastures were fertilized at 6-8 week intervals during the previous spring-summer, and received 200 lbs/ac 34-0-0 (68 lbs N/ac) on 9-4-03. A light stocking rate was employed during the summer months and all pastures were deferred (not grazed) from 9-25-03 to 10-31-03. There was about 8000 lbs DM/ac at initiation of grazing.

Research Findings. During the first 32 days of grazing stockpiled TIF85, stocker ADG ranged from 1.59 lbs/da on TIF85 to 2.36 lbs/da on 28-SUP primarily because of mild temperatures and an abundance of forage DM, especially leaf components which made up about 60% of the TIF85 pasture (Table 1). However, ADG declined from Dec. 2 to Jan. 9 because of decreased availability of leaf fractions in addition to several days with cold temperatures. The overall, 70-day backgrounding period resulted in ADG of -0.20 lbs/da for TIF85, 0.66 lbs/da for

22-SUP, .94 lbs/da for 28-SUP, and .75 lbs/da for 34-SUP. Body condition scores (BCS) declined nearly a half BCS unit for stockers on non-supplemented TIF85, and either maintained or slightly improved BCS on all SUP treatments. Supplemented calves showed an extra ADG of .45 to .77 lbs/da with corresponding supplement:extra gain conversions of 4.44 to 2.60 during the first 32 days (Table 2). However, the overall 70-day extra gains due to SUP were improved due to weight loss on TIF85; whereby, resultant supplement:extra gain was 2.33 for 22-SUP, 2.11 for 34-SUP, and 1.75 for 28-SUP. Due to differences in ration cost estimates, the cost/lb gain attributable to supplements were \$ 0.243, \$0.205, and \$0.177, respectively, for 34-SUP, 22-SUP, and 28-SUP (Table 2).

Application. Backgrounding stockers on stockpiled TIF85 during the fall-early winter can enhance performance as long as animals can selectively graze leaf components. Extended grazing period or increased stocking rate would likely have reduced ADG. Protein supplementation buffers the lowered forage nutritive value and can result in relatively expensive gains during this critically important backgrounding period prior to winter pasture grazing.

Table 1. Average daily gain (ADG) of steers and heifers grazing stockpiled Tifton 85 (TIF85) bermudagrass with various protein supplement ratios (SUPL).

TREATMENT ¹	SUPL PROTEIN (%)	ADG			BCS ²	
		10-31 to 12-2	12-2 to 1-09	Overall 10-31 to 1-09	INITIAL	FINAL
TIF 85	-	1.59	-1.71	-.20	5.3	4.9
TIF85 + 2:1	22	2.30	-0.72	.66	5.1	5.1
TIF85 + 1:1	28	2.36	-0.25	.94	5.1	5.5
TIF85 + 1:2	34	2.04	-0.34	.75	5.1	5.2

¹Supplement ratios shown as Corn:SBM ratios plus minerals and Rumensin 80.

²BCS = Body Condition Score.

Table 2. Protein supplement (SUPL) ration efficiency for the first 32 days and for 70 days overall for stockers grazing stockpiled Tifton 85 (TIF85) bermudagrass.

TRT	10-31 TO 12-02 (32 da)			OVERALL 10-31 to 1-09 (70 da)			
	EXTRA GAIN (lb/da)	SUPL: EXTRA GAIN	COST/LB EXTRA GAIN \$ ¹	EXTRA GAIN (lb/da)	SUPL: EXTRA GAIN	RATION COSTS \$/ lb	COST/LB EXTRA GAIN \$ ¹
TIF85	-	-	-	-	-	-	-
TIF85 + 2:1	.71	2.82	.248	.86	2.33	.088	.205
TIF85 + 1:1	.77	2.60	.263	1.14	1.75	.101	.177
TIF85 + 1:2	.45	4.44	.511	.95	2.11	.115	.243

¹Supplement costs based on corn @ \$110/ton and Soybean Meal @ \$275/ton. Estimated ration costs were \$.088 (2:1, Corn:SBM); \$.101 (1:1, Corn:SBM); and \$.115 (1:2, Corn:SBM).