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COW-CALF PERFORMANCE FROM COMMON, COASTAL, AND TIFTON 85 BERMUDAGRASS WHEN GRAZED AT THREE STOCKING RATES

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Background. Common (CM) and Coastal (CS) bermudagrass (BG) pastures, components of a long-term nutrient cycling study, were overseeded with either 'Tibbee' crimson and 'Apache' arrowleaf clover (CL) or TAM-90 ryegrass (RY) during the autumn of 2000. Replicate Tifton-85 (T-85) BG pastures for each of 3 stocking rates (SR) were overseeded with RY at the same time as CM and CS. Fertilization was as follows: (1) All CM and CS received split applications of 0-50-50 on 11-21-00 and 2-22-01; (2) All CM RY and CS RY received three applications of 34-0-0 from 1-8-01 to 4-5-01, and three applications of 34-0-0 from 5-16-01 to 8-9-01 for a season total of 306-100-100; (3) All T-85 pastures received three applications of fertilizers from 12-8-00 to 4-5-01 (total = 160-16-36); (4) All T-85 pastures received three applications of 34-0-0 from 5-16-01 to 8-10-01 (170-0-0) for a season total for T-85 of 330-16-36. Fall-calving F-1 Angus x Brahman (AxB) cows with Romosinuano-sired steer calves initiated grazing RY on 2-28-01 and CL on 3-12-01. Three SR on all overseeded BG pastures were classified as low (LO), medium (ME), or high (HI) based on available forage. The SR method was variable with the HI pastures of each treatment group serving as the indicator pasture for adjusting SR. The RY pastures had adequate forage DM to permit grazing about two weeks before the CL pastures. Grazing with fall-calving cows and calves was terminated (weaned) on June 7, 2001. Winter calving A x B cows with Simmental-sired steers and heifer calves grazed CM and CS pastures from 6-20 to 9-26. Due to RY overseeding and relatively slow growth of T-85 during June, T-85 pastures were not grazed from 6-7 to 7-2. Grazing resumed on 7-2 for T-85 and continued until 9-26 (weaning).

Research Findings. The resultant SR for CL overseeded on either CM or CS were 1.83, 1.25, and 0.75 pair/ac, respectively for HI, ME, and LO. For RY overseeded on CM and CS pastures, the SR were 2.06, 1.38, and 0.83 pair/ac, respectively, for HI, ME, and LO. The T-85 overseeded RY SR were 1.70, 1.32, and 0.79, respectively for HI, ME, and LO. Resultant steer calf ADG from CM and CS BG pastures ranged from more than 3 lbs/da on LO SR to about 1.5 lbs/da on HI SR pastures overseeded with CL. This would indicate that at the same SR, more forage was available on RY than CL pastures. The T-85 pastures overseeded with RY were not grazed to the same severity as the CM or CS pastures with RY; thus, steer ADG was 3.24, 2.92, and 1.95 lbs/da, respectively, from LO, ME, and HI. Thus, at these SR regimens on T-85 where cow performance was maintained (-.06 ADG), steer ADG was nearly 2 lbs/da on HI SR pastures.

During the exclusive summer grazing period, CM and CS were grazed more intensively (higher SR and less forage stubble height) than T-85 due to differences in plant morphology. The T-85 plants have more stolons and less rhizomes compared to CS; thus, the potential to maintain stand of T-85 was thought to be optimized at a lighter grazing pressure. The summer SR ranged from 4.35 pair on CS to 0.75 pair on CM pastures. The replicate SR pastures of T-85 averaged 3.14, 2.01, and 1.10 pair/ac, respectively, for HI, ME, and LO. The deferment period and DM production during dry conditions, allowed for more forage available on T-85 SR that were stocked similar to CM or CS. The ADG of steer and heifer calves ranged from 3.16, 2.76, to 2.39 lbs/da, for LO, ME, and HI SR pastures of T-85. Although the HI SR pastures of both CS and T-85 resulted in more than 950 lbs/ac calf gain, the lower grazing pressure used on the T-85 pastures had a slight, positive cow ADG compared to cow weight loss on CS pastures.

Application. Calf gain/ac from T-85 was equal to that from CS pastures even though T-85 was grazed for 11 days less and stocked at about 1 pair/ac less than CS. During the first year of overseeding T-85 pastures with RY, a deferred-grazing period of 2 to 3 weeks, depending on rainfall, may be economically and biologically advantageous for stand maintenance, DM production and animal performance.

Table 1. Cow and calf average daily gain (ADG) on Common, Coastal, and Tifton 85 bermudagrass overseeded with ryegrass or clover.

PAS	SR ³	ADG MAR to 6-7			ADG 6-21 to 9-26				TOTAL ⁴
		COW	CALF ¹	CALF GAIN/ACRE	SR ³	COW	CALF	CALF GAIN/ACRE	CALF GAIN/ACRE
		----- lbs/da -----		lb/ac		----- lbs/da -----		lb/ac	lb/ac
CM-CL	1.83	-0.87	1.51	240	2.61	-1.77	0.69	175	415
CM-RY	2.06	-0.21	1.75	357	2.61	-2.35	1.46	370	727
CM-CL	1.25	0.43	2.75	299	1.25	-1.22	1.79	217	516
CM-RY	1.38	0.96	2.38	325	1.25	0.03	2.53	307	632
CM-CL	0.75	1.48	3.08	201	0.75	-0.33	2.30	167	368
CM-RY	0.83	2.67	3.11	256	0.75	-0.33	2.06	150	406
CS-CL	1.83	-0.52	1.52	242	3.48	-1.87	0.87	294	536
CS-RY	2.06	0.46	2.05	418	4.35	-1.70	1.29	544	962
CS-CL	1.25	0.96	2.15	234	1.45	-0.33	2.28	321	555
CS-RY	1.38	1.51	2.72	372	1.88	-0.98	2.15	392	764
CS-CL	0.75	2.75	3.79	247	0.88	0.34	2.72	232	479
CS-RY	0.83	1.71	2.86	235	1.13	0.70	2.80	307	542
T85-RY	1.70	-0.06	1.95	328	3.14	0.16	2.39	643	971
T85-RY	1.32	1.83	2.92	382	2.01	0.43	2.76	477	859
T85-RY	0.79	2.54	3.24	253	1.10	1.16	3.16	299	552

¹Steer calves sired by Romosinuano.

²Steer and heifer calves sired by Simmental.

³Stocking rate reported as number of cow-calf pair per acre.

⁴Total Gain per acre for RY from Feb 28 to Sep 26 and CL from Mar 12 to Sep 26.