



Forage Research in Texas

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Influence of Creep Feed and Stocking Rate on Cow-Calf Performance

F. M. Rouquette, Jr. and M. J. Florence

SUMMARY

Mature F-1 Brahman x Hereford cows and their Simmental-sired calves were grazed on bermudagrass-clover-ryegrass pastures at low stocking rates (.82 cow-calf pair/acre) and calves were offered supplemental feed via creep feeding. The three-year average daily gain (ADG) for steers was 3.30 lbs; whereas, heifers had an ADG of 2.78 lbs. The ADG for all calves was 3.18 lbs during the trial period. Creep fed calves gained .54 lbs/hd/day more than non-creep fed calves grazing lightly-stocked pastures. The addition of creep feed had similar weight gain effects on both steers (.42 lbs/hd/day) and heifers (.36 lbs/hd/day). Cow gains were not substantially affected by the use of creep feed on lightly-stocked pastures. Although the three-year average pounds of creep feed per pound of gain was 5.5, the two-year average of 7.3 may be more representative of the feed conversion efficiencies.

Introduction

With the use of high quality, quantity, and well-managed forages, fall-born steers can wean at 775 pounds and heifers can wean at 700 pounds at approximately nine months of age. Thus, these calves have attained approximately 75% of their potential slaughter weight by weaning time. This trial was initiated to ascertain if the use of creep feed during pre-weaning periods would provide sufficient extra weight gains to warrant direct slaughter at weaning.

Procedure

Bermudagrass pastures were sod-seeded with 'Gulf' ryegrass and 'Yuchi' arrowleaf clover in early to mid-October of 79-81. Pastures were fertilized with annual rates of 200-100-100 lbs/ac of $N-P_2O_5-K_2O$. Fall-born, Simmental-sired calves and their F-1 Brahman x Hereford dams were grazed at similar grazing pressures as lightly-stocked pastures (.82 cow-calf pair/ac). During the 1980 grazing season, calves were offered a ground milo-cottonseed meal ration. However, because intake was extremely low, a commercial 14% protein creep pellet was used to finish the creep feeding period. In 1981, a low fiber, 14% protein creep pellet was used throughout the creeping period. In 1982, whole shelled corn, supplemented with a molasses-based commercial feed for palatability purposes, was used. Cows and calves were weighed at monthly intervals throughout the trial.

Discussion

Cow and calf performance from the lightly-stocked pastures and creep feed are shown in Table 1. Calf average daily gains (ADG) were

less than expected in 1980 and this was probably due to the low quantity of creep feed consumed. Creep fed steers gained more than one-half pound (.52 lbs) per head/day than heifers. At stocking rates of .8 cow-calf units per acre, there was approximately 400 pounds of calf gain per acre. A comparison of calf and cow performance from various stocking rates and creep feed are shown in Tables 2 and 3. The ADG advantage due to creep feed was similar for both steers (.42 lbs) and heifers (.36 lbs). Cow gain was not substantially changed on lightly-stocked pastures regardless of creep-fed or pasture only treatment for calves.

Table 4 shows the quantity of creep feed used during each year of the trial and the weight gain which may be attributed to the creep feed. Only slightly more than an extra 100 pounds of gain resulted from the use of creep feed. This additional gain was less than anticipated, but was low due to the high quality pastures used in both the creep-fed and pasture only treatments. Thus, from these data, 900 pound steers can be weaned with the use of creep feed. However, creep feed may prove to be used most economically to supply a special slaughter market and/or to buffer a low quality and/or ill-managed forage system. The two-year average (81-82) feed conversions of 7.31 were not as efficient as originally anticipated. Because of the relative high quality pastures being used, the most economical use of creep feeding fall-born calves may include a system in which calves are "taught" to eat supplemental feed at an early age, but ad libitum creep feed is not offered until the last 60 days (June-July) of the grazing period. Although not by design, this is the general type of feeding schedule that prevailed during 1980.

Discussion

Perennial ryegrass pastures were established with 'Gulf' ryegrass and 'Yuchi' arrowleaf clover in early to mid-October of 78-81. Pastures were fertilized with annual rates of 200-400-100 lbs/acre of N-P-K, 0-7-0. Fall-born, commercial-sized calves and their F-1 Brahman x Hereford dams were tested at similar grazing pressures on lightly-stocked pastures (0.82 cow-calf/acre). During the 1980 grazing season, calves were offered a ground mild-corn-based meal ration. However, because intake was extremely low, a commercial 14% protein creep pellet was used to finish the group feeding period. In 1981, a low fiber, 14% protein creep pellet was used throughout the grazing period. In 1982, whole cracked corn, supplemented with a molasses-based commercial feed for calving purposes, was used. Cows and calves were weighed at monthly intervals throughout the trial.

Discussion

Cow and calf performance from the lightly-stocked pastures and creep feed are shown in Table 1. Calf average daily gains (ADG) were

Table 1. Cow-calf performance from lightly-stocked bermudagrass-clover-ryegrass pastures with calves receiving ad libitum creep feed.

ITEM	1980		1981		1982		3-Year Average	
	Cow	Calf	Cow	Calf	Cow	Calf	Cow	Calf
Starting Date	1-25		2-24		2-16		2-11	
Final Date	7-8		7-8		7-28		7-15	
No. Days on Test	165		134		162			
STEERS								
No. Animals	8	8	10	10	6	6	24	24
Initial Wt. (lbs)	1234	331	1122	422	1173	371	1176	375
Final Wt. (lbs)	1345	821	1306	903	1355	914	1335	879
Wt. Gain (lbs)	111	490	184	481	182	543	159	504
ADG (lbs)	.67	2.97	1.37	3.59	1.12	3.35	1.05	3.30
HEIFERS								
No. Animals	8	8	-	-	6	6	14	14
Initial Wt. (lbs)	1160	321	-	-	1201	349	1181	335
Final Wt. (lbs)	1301	757	-	-	1374	822	1338	790
Wt. Gain (lbs)	141	436	-	-	173	473	157	455
ADG (lbs)	.85	2.64	-	-	1.07	2.92	0.96	2.78
ALL CALVES								
No. Animals	16	16	10	10	12	12	38	38
Initial Wt. (lbs)	1197	326	1122	422	1187	360	1169	369
Final Wt. (lbs)	1323	789	1306	903	1365	868	1331	853
Wt. Gain (lbs)	126	463	184	481	178	508	163	484
ADG (lbs)	.76	2.81	1.37	3.59	1.10	3.14	1.08	3.18
STOCKING RATE								
Animal-units/ac		.84		.80		.81		.82
Gain/ac (lbs)	106	389	147	385	144	411	134	397

Table 2. Comparisons of calf performance from creep-fed vs non-creep-fed stocking rate treatments during a three-year period.

ITEM	Lightly Stocked		Medium Stocked	High Stocked
	Creep Fed	Pasture Only		
Starting Date	2-11	3-1	3-1	3-1
Final Date	7-15	7-14	7-14	7-14
No. Days on Test	154	135	135	135
STEERS				
No. Animals	24	12	12	12
Initial Wt. (lbs)	375	397	383	392
Final Wt. (lbs)	879	784	746	605
Wt. Gain (lbs)	504	388	367	213
ADG (lbs)	3.30	2.88	2.72	1.58
HEIFERS				
No. Animals	14	12	12	12
Initial Wt. (lbs)	335	373	363	369
Final Wt. (lbs)	790	699	681	548
Wt. Gain (lbs)	455	326	318	180
ADG (lbs)	2.78	2.42	2.35	1.34
ALL CALVES				
No. Animals	38	24	24	24
Initial Wt. (lbs)	369	385	371	381
Final Wt. (lbs)	853	742	714	577
Wt. Gain (lbs)	484	357	343	197
ADG (lbs)	3.18	2.64	2.54	1.46

Table 3. Comparisons of cow performance from creep-fed vs non-creep-fed stocking rate treatments during a three-year period.

ITEM	Lightly Stocked		Medium Stocked	High Stocked
	Creep Fed	Pasture Only		
Starting Date	2-11	3-1	3-1	3-1
Final Date	7-15	7-14	7-14	7-14
No. Days on Test	154	135	135	135
STEERS				
No. Animals	24	12	12	12
Initial Wt. (lbs)	1176	1096	1111	1092
Final Wt. (lbs)	1335	1230	1234	1032
Wt. Gain (lbs)	159	134	123	-60
ADG (lbs)	1.05	.98	.91	-.45
HEIFERS				
No. Animals	14	12	12	12
Initial Wt. (lbs)	1181	1146	1120	1104
Final Wt. (lbs)	1338	1285	1243	1054
Wt. Gain (lbs)	157	139	123	-50
ADG (lbs)	.96	1.02	.91	-.38
ALL CALVES				
No. Animals	38	24	24	24
Initial Wt. (lbs)	1169	1122	1116	1098
Final Wt. (lbs)	1331	1258	1238	1043
Wt. Gain (lbs)	163	136	123	-55
ADG (lbs)	1.08	1.00	.91	-.42

Table 4. Amount of creep feed consumed, gain attributed to creep feed, and feed:gain ratios.

ITEM	1980	1981 ¹	1982	3-Year AVG	2-Year ² AVG
No. Animals	16	10	12		
Total Feed Consumed	4187	6095	11,289	7190	8692
Feed/animal (lbs)	262	610	941	604	776
Gain During Trial- Creep (lbs)	463	481	508	484	495
Gain During Trial- Non-Creep ³ (lbs)	327	400	375	367	388
Gain Due to Creep Feed (lbs)	136	81	133	117	107
lb Feed/lb gain	1.93	7.53	7.08	5.51	7.31

¹ During 1981, only steers were creep-fed; therefore, only non-fed steers were used in comparisons.

² Average of 1981 and 1982.

³ Non-creep gains taken from calves grazing lightly-stocked Coastal and common bermudagrass-clover-ryegrass pastures.