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Effects of winter nutrition levels on cow and calf performance

Abstract

Cow and calf performance under four winter-nutrition levels was compared using 34 cows the first year and 87 cows the second year. Cows were maintained on the same nutrition treatment both years with additional cows added the second year. Cows ranged from less than 2 to 11 years of age. Average calving date was early April. A total of 95 calves were included during the two years. Calves were weighed within 24 hours after birth and at monthly intervals from June to November. Cows were weighed each month. All cows were graded and calves were weaned and graded at the November weighing.

Keywords

Cattlemen's Day, 1970; Report of progress (Kansas State University. Agricultural Experiment Station); 536; Beef; Winter nutrition; Cow-calf performance

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Effects of Winter Nutrition Levels on Cow and Calf Performance

R.R. Schalles, Guy Kiracofe, C.L. Drake and C.N. Reves

Cow and calf performance under four winter-nutrition levels was compared using 34 cows the first year and 87 cows the second year. Cows were maintained on the same nutrition treatment both years with additional cows added the second year. Cows ranged from less than 2 to 11 years of age. Average calving date was early April. A total of 95 calves were included during the two years. Calves were weighed within 24 hours after birth and at monthly intervals from June to November. Cows were weighed each month. All cows were graded and calves were weaned and graded at the November weighing.

Winter rations consisted of: (Group 1) 3 lbs. alfalfa hay, 3 lbs. cracked sorghum grain, 1 1/2 lb. soybean meal; (Group 2) 3 lbs. alfalfa hay, 3 lbs. cracked sorghum grain; (Group 3) 3 lbs. alfalfa hay, 1 1/2 lb. soybean meal; (Group 4) 3 lbs. alfalfa hay. Each group of cows was wintered and summered in approximately 300 acres of native pasture.

Results and Discussion

Average November weight of cows 2 years old or less was 802 lbs.; 3-year-olds, 938 lbs.; and over 3-year-olds, 1046 lbs. Weights of 2-year-old cows varied little until after the cows calved. Heifers receiving only 3 lbs. of alfalfa hay weighed 83 lbs. less than those receiving 3 lbs. of alfalfa, 3 lbs. sorghum grain, and 1 1/2 lbs. soybean meal; and about 45 lbs. less than the other two groups. The difference was maintained throughout the remainder of the year. The same difference was seen in the 3-year-olds from November until the following summer when all groups reached quite similar weights. There was no significant difference in weights of cows over 3 years old, regardless of nutrition level.

Weight of calves differed most between those with 2- or 3-year-old mothers. Two-year-old cows on the highest level of nutrition (Group 1) produced the heaviest calves. Cows 3 years old wintered on 3 lbs. alfalfa hay and 1 1/2 lbs. soybean meal produced lighter calves than 3-year-old cows on the other nutrition levels.

Cows receiving only 3 lbs. alfalfa hay raised fewer calves, and required more services to conceive. Two-year-old cows had lower percentage calf crops than other age groups, with cows over 3 years having highest percentage calf crops.

Adding 3 lbs. of sorghum grain to the ration was superior to adding 1 1/2 lbs. soybean meal, based on calf weights and

number of calves raised. That indicates that energy level was more critical than protein. Although performance of 3-year-old cows was similar on all rations, those receiving only 3 lbs. alfalfa gave poorest results.

Table 16. Average Cow and Calf Performance, Two-year-old Cows^a

Group	1		2		3		4	
Ration:								
Alfalfa	3 lbs.		3 lbs.		3 lbs.		3 lbs.	
Milo	3 lbs.		3 lbs.					
SBM	1 1/2 lbs.				1 1/2 lbs.			
Time Data	Cow	Calf	Cow	Calf	Cow	Calf	Cow	Calf
Starting grade	11.5		11.7		12.0		12.0	
Starting wt.	850		780		783		796	
December wt.	845		769		795		783	
January wt.	892		815		835		818	
February wt.	848		756		770		761	
March wt.	850		761		768		754	
April wt.	843	68 ^b	743	67 ^b	763	59 ^b	731	64 ^b
May wt.	790		755		752		707	
June wt.	823	160	774	129	793	114	724	119
July wt.	888	207	833	173	847	158	782	177
August wt.	920	286	875	232	871	226	815	231
September wt.	950	326	899	274	900	265	864	290
October wt.	948	368	913	304	895	295	862	321
November wt.	960	383	912	315	911	308	872	350
November grade	8	4	9	4	9	5		5
Number head	11.4	11.5	11.0	9.8	11.1	10.6		10.2

^aAll weights are in lbs. Grades 10 = average good, 11 = high good, 12 = low choice

^bBirth weights

Table 17. Average Cow and Calf Performance of Three-year-old Cows^a

Group	1	2	3	4
Ration:				
Alfalfa	3 lbs.	3 lbs.	3 lbs.	3 lbs.
Milo	3 lbs.	3 lbs.		
SBM	1 1/2 lbs.		1 1/2 lbs.	

Data	Cow	Calf	Cow	Calf	Cow	Calf	Cow	Calf
Starting grade	11.2		11.5		11.7		10.5	
Starting wt.	946		967		937		902	
December wt.	966		985		961		913	
January wt.	1023		1032		1005		950	
February wt.	972		965		946		888	
March wt.	987		956		919		891	
April wt.	971	72 ^b	937	75 ^b	931	68 ^b	891	77 ^b
May wt.	892		904		876		839	
June wt.	946	158	910	165	918	132	880	154
July wt.	1016	214	991	220	984	179	958	212
August wt.	968	292	1019	296	1038	253	1014	284
September wt.	1059	333	1038	332	1062	292	1049	335
October wt.	1053	375	1033	374	1074	328	1062	387
November wt.	1046	385	1025	396	1066	336	1048	398
November grade	11.2	11.7	11.6	11.6	11.4	11.1	11.6	12.0
No. head	9	8	13	13	10	8	9	6

^aAll weights are in lbs. Grades 10 = average good, 11 = high good, 12 = low choice

^bBirth weights

Table 18. Average Cow and Calf Performance of Cows Over Three Years Old^a

Group	1		2		3		4	
Ration:								
Alfalfa	3 lbs.		3 lbs.		3 lbs.		3 lbs.	
Milo	3 lbs.		3 lbs.					
SBM	1 1/2 lbs.				1 1/2 lbs.			
Data	Cow	Calf	Cow	Calf	Cow	Calf	Cow	Calf
Starting grade	12.2		11.6		11.9		12.2	
Starting wt. ^b	1084		978		1072		1049	
December wt.	1103		996		1064		1036	
January wt.	1154		1046		1099		1041	
February wt.	1076		980		1031		1003	
March wt.	1066		984		1009		1014	
April wt.	1066	76 ^b	983	75 ^b	1021	76 ^b	983	75 ^b
May wt.	1001		884		966		936	
June wt.	1033	169	932	163	989	168	1003	164
July wt.	1083	222	978	225	1061	225	1073	218
August wt.	1063	280	979	285	1071	291	1075	285
September wt.	1084	327	1010	334	1107	334	1117	347
October wt.	1075	361	1016	369	1088	369	1103	367
November wt.	1048	378	994	394	1085	374	1114	383
November grade	12.1	11.3	10.4	11.2	11.9	11.5	12.3	11.8
No. head	14	13	8	8	15	14	9	7

^aAll weights are in lbs. Grades 10 = average good, 11 = high good, 12 = low choice

^bBirth weights