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Early weaning and creep feeding calves in drylot (1977)

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K**Early Weaning and Creep Feeding Calves in Drylot****S**

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Summary

Performances of 125 commercial Hereford-cross and percentage Simmental calves were evaluated by comparing early weaning at 50 days of age (± 25), nursing calves receiving a creep in drylot, and calves nursing in drylot without creep. Both a starter and growing creep were tested.

Early weaned calves gained more (261 lbs., 299 lbs.) than either creep fed (251 lbs., 277 lbs.) or noncreep fed (107 lbs., 125 lbs.) calves during the 107-day trial. The best combined energy efficiency of dam and calf was for the early weaned group, and dams of early weaned calves began cycling sooner in the breeding season.

Introduction

Reducing cow feed costs is a major obstacle facing confinement systems. Since intake of confinement cows may be closely controlled, early weaning of calves permits lower quality, less expensive maintenance rations to be fed while calf needs are being met by creep feed. Other potential uses of early weaning could include: (1) emergency situations such as drought, (2) induced twinning, (3) fall calving where heavy winter feeding would be required, and (4) to accelerate rebreeding of first- and second-calf heifers.

Experimental Procedure

Ninety commercial calves from Hereford dams and Angus, Charolais, and Hereford bulls and 35 percentage Simmental calves were used in a 107-day trial (May 10 to August 25). All calves were born in confinement and were allotted by age, sex (59 heifers and 66 males), and breed among three treatment groups: (1) early weaned at 50 days of age (± 25), (2) continued nursing on creep, and (3) continued nursing without creep. Within each management group commercial calves were further divided by age and sire into three sub-treatments: (1) implanted once with Ralgro, (2) implanted and re-implanted 60 days later, and (3) no implants.

Cows were allotted by calf treatment, with Simmental and Hereford cows grouped separately (6 total groups). Cow weight and condition changes from a pre-calving record (February 12) were similar for each group. Cows were weighed on and off test after 12 hr. fasts and were condition scored visually each time. Calves were weighed monthly (5 times).

Early weaned calves were housed indoors for 18 days with access to a

free-choice starter creep (table 5.1) and fresh water. Calves were then moved outside and were shifted gradually to the standard creep beginning 50 days post-weaning. Approximately 6 lbs/hd/day of prairie hay was also provided the last month on test. Calves on creep nursing their mothers had access to the standard creep (table 5.1) throughout the test. Cows were fed three different silages during the summer (table 5.2). Wheat straw was fed in addition to silage during July. Milo and a protein supplement^a were also fed throughout the trial to meet requirements. Additional energy was offered cows whose calves were not on creep toward the end of the test.

Results and Discussion

Early-weaned and creep-fed calves gained significantly more than non-creep fed nursing calves for both dam-breed groups. Calves receiving no creep also had more eye infections, which apparently were nutritionally related. Serious problems were not encountered in weaning at 50 days; calf gains were highest for that group. Nursing calves receiving creep feed did not respond to implants.

All cows, except for Simmentals whose calves received no creep, were in gaining condition throughout the summer, indicating above maintenance nutrition. Performance indicates that dry cows could have been further restricted, which would have increased energy efficiency of the group weaned early (6.8 lbs. TDN/lb. of calf produced) over the creep fed (7.3 lbs. TDN/lb. calf produced) and noncreep (14.3 lbs. TDN/lb. calf produced) groups. Cows whose calves were weaned early also began cycling earlier in the breeding season.

These data indicate that creep feeding may be beneficial in drylot cow-calf production.

^aSupplement formulation lbs/ton: SBOM, 1070; rolled milo, 491; salt, 200; bone meal, 134; urea, 64; Z-10 trace mineral, 20; aurofac 10, 15; vitamin A, 6; wet molasses, 40.

Table 5.1 . Creep rations for nursing and early-weaned calves.

Ingredient	Starter creep ration (lbs.)	Standard creep ration (lbs.)
Rolled oats	436	1300
Rolled corn	742	366
Dehydrated alfalfa		92
Calf Manna ^a	305	
Wet molasses	65	61
Dicalcium phosphate	11	
Limestone	11	
Soybean oil meal	436	84
Dry molasses		51
Pre-mix ^b	22	
Salt	22	10
Aureo-10	15	14
		<u>1998</u>

^aCalf Manna milk replacer is made by Albers Milling Co.

^bPre-mix, lbs. per 1000 lbs.: soybean oil meal, 444; ground oats, 443; vitamin A, 33; Auremycin-10, 30; trace mineral, 50.

Table 5.2 . Feed consumed (per head per day) by calves and dams¹ (lbs.).

Item	Weaned early ²			Creep fed ²			Not creep fed ²		
	Calf	Dam ^S	Dam ^H	Calf	Dam ^S	Dam ^H	Calf	Dam ^S	Dam ^H
<u>Calves</u>									
Starter creep	5.5								
Standard creep	9.9			4.08					
Average creep consumption	7.8			4.08					
Average TDN consumption	6.2			3.1					
<u>Dams</u>									
Sorghum silage (5/10-6/1)		40	35	50	40		50	40	
Straw-alfalfa silage (6/2-7/31)		18.3	15.6	27.4	18.4		27.4	18.4	
Excreta silage (8/1-9/2)		38.7	34.5	45.5	50		54.5	60	
Milo ³		4	4	6	6		6	6	
Supplement		1	1	1.5	1.5		1.5	1.5	
Average TDN consumption		11.5	10.5	16	13		16.5	13.5	
Combination (Breed differences averaged)									
Cow + Calf TDN consumption ⁴			17.2			17.6			15
Total Cow-Calf TDN/lbs. calf gain			6.8			7.3			14.3

¹Dam feed consumption is to September 2 (115 days) and calf consumption is to August 25 (107).

²Dam^S = Simmental; Dam^H = Hereford.

³Actual levels changed during test: dry cows (2-4); creep cows (4-6); non-creep (4-8).

⁴Feed TDN, calculated from crude fiber and NRC values, were: sorghum silage, 67%; straw-alfalfa, 53%; excreta silage, 55%; starter creep, 82%; standard creep, 76%; wheat straw, 30% (fed in addition to straw-alfalfa silage 18 days).

Table 5.3. Performances of calves weaned early (107 days on test).

Breed and Weaning Treatment	No. of calves	Age on test	Weight May 10 (lbs.)	Weight Aug 25 (lbs.)	Total gain (lbs.)	ADG (lbs.)
<u>Early-weaned calves</u>						
Commercial	30	50	125	386	261	2.41
Simmental	15	50	162	461	299	2.77
<u>Creep-fed calves</u>						
Commercial	30	47	125	376	251	2.35
Simmental	10	50	156	433	277	2.59
<u>Not creep-fed calves</u>						
Commercial	30	49	128	235	107	1.00
Simmental	10	47	152	277	125	1.17

Table 5.4. Indicated effects on dams of calves weaned early.

Calf Treatment	Weight May 10	Weight ⁴ change	Condition ¹ May 10	Condition change	Cycling ² %	Conceived ³ %
Early weaned, commercial	942	61	5.0	.6	100	86
Early weaned, Simmental	1121	31	6.2	-.3	100	81
Creep fed, commercial	878	97	4.7	.7	67	76
Creep fed, Simmental	1110	41	6.3	0.3	80	80
Not creep fed, commercial	946	45	5.2	.2	83	80
Not creep fed, Simmental	1056	-45	5.8	-1.0	80	80

¹Condition scores visually appraised on a scale of 1-10; 1 = extremely thin, 10 = extremely fleshy.

²% cycling represents those observed in estrus May 20 - June 20, 1976.

³% conceived is calculated from rectal palpation October 8, 1976.

⁴Final cow weights were recorded September 2 (115 days).