

An interesting observation provided by these trials was the opportunity to compare response of the three lines of breeding to the two management systems. Although the three lines in these trials were quite different in most traits studied, they responded in a similar manner to the two managements. The non-significance of these line of breeding-management interactions indicated that the best performing line under one set of environmental conditions was also the best under the other set of conditions.

In summary, pigs fed on concrete floors in confinement gained faster, required less feed per lb. of gain, had more backfat, larger loin eye area, heavier bellies, higher dressing percent, and a higher yield of primal cuts than pigs fed a simple, free-choice corn and supplement ration. These differences were statistically significant. The lower cost of the pasture ration made the cost per hundred lbs. gain considerably less on pasture than in confinement in these trials. Pigs fed on pasture were sounder on their legs and produced slightly leaner and longer carcasses than those raised in confinement.

## Creep-Feeding Fall Calves

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Creep-feeding is a method of increasing the gain and finish of suckling beef calves. One would expect creep-feeding to be of greater importance with fall calves than with spring calves because fall-calving cows nurse their calves during the winter when the dry forage of the native grass pastures is of lowest nutritive value. The milk production of these cows would be expected to be lower than if green grass were available unless the level of supplemental winter feeding was very high. Such high levels of feeding are costly.

Results of a four-year study (Okla. Agr. Exp. Sta. MP-55:72) indicated that creep-feeding fall calves nursing cows fed 1.5 lbs. of cottonseed meal per head daily increased calf gains 87 lbs., whereas providing high levels of supplemental feed for the cows (2.5 lbs. cottonseed meal and 3 lbs. grain per head daily) increased calf gains 52 lbs. These results suggest that increased levels of feed should be given to the calf rather than to the cow. Neither of these systems was as profitable as not creep-feeding and feeding the cows 1.5 lbs. of cottonseed meal per head daily. However, young cows will not perform satisfactorily when fed at such low levels. Creep-feeding only until spring grass becomes available may be a satisfactory practice. A high proportion of the gain resulting from creep-feeding occurred during the winter months while the largest proportion of creep-feed was consumed during the following summer.

## Procedure

On December 12, 1960, 102 calves born in October and November were divided into six lots of 17 head. The calves remained with their dams, high quality grade Hereford cows, in native grass pastures. The cows were fed an average of 2.5 lbs. of pelleted cottonseed meal per head daily until April 14.

The calves in Lot 1 were not creep-fed. Those in Lot 2 were creep-fed a mixture consisting of 55 percent steam rolled milo, 30 percent whole oats, 10 percent cottonseed meal, and 5 percent cane molasses until weaning in July. The Lot 3 calves were creep-fed this mixture only until May 12. Calves in Lot 4 were fed the above mixture after grinding and pelleting. The calves in Lot 5 received alfalfa hay and those in Lot 6 received pelleted alfalfa hay. Creep-feeding of Lots 4, 5, and 6 was also discontinued on May 12.

## Results

In the period from December 12 until May 12 all creep-fed calves gained more than the Lot 1 calves (see Table 1). The creep-fed calves in Lots 2 and 3 consumed an average of 320 lbs. of creep-feed and gained an average of 188 lbs. which is 50 lbs. more than the non-creep-fed calves.

In the 69-day period from May 12 until weaning (July 20), the calves receiving the creep mixture (Lot 2) gained 178 lbs. and those not previously creep-fed (Lot 1) gained 160 lbs. The total increase in gain (winter and summer) due to creep-feeding was 54 lbs. (Lot 1 vs. 2). In this year, as in the 1960 test, the value of the increased gain due to creep-feeding was not as great as the cost of the creep-feed; therefore, creep-feeding reduced profits. The two-year average increase in total gain due to creep-feeding the mixture was 64 lbs. (see Table 2). Again, the increased selling value of the creep-fed calves has not been as great as the cost of the creep-feed.

In the 1961 test, creep-feeding was discontinued in Lot 3 on May 12. From May 12 until weaning, the calves which had not received creep-feed (Lot 1) gained 18 lbs. more than the calves in Lot 3, which had received the concentrate mixture during the winter (Table 1). Thus, the 63-lb. weight advantage due to creep-feeding until May 12 was reduced to 45 lbs. by weaning. Although the calves in Lots 2 and 3 received identical treatment until May 12, one group gained 174 lbs. and the other 201 lbs. to that date. This difference in winter gain was reflected in the small difference (9 lbs.) in total gain. In the 1960 trial, the difference in total gain was 38 lbs. The two-year average difference in gain was 24 lbs. (Table 2) and the difference in creep-feed consumption was 619 lbs. Thus, stopping creep-feeding in May when green grass was available was the preferred practice.

Table 1.—Creep-Feeding Fall Calves, 1960-61.

Lot number	1	2	3	4	5	6
Creep-feed	None	Mixture <sup>1</sup> until weaning	Mixture <sup>1</sup> until spring	Pelleted mixture until spring	Alfalfa <sup>2</sup> hay until spring	Pelleted alfalfa hay until spring
Number of calves <sup>3</sup>	17	17	17	16	17	16
Avg. wt. per calf, lbs.						
Initial (Dec. 21, 1960)	135	134	135	136	136	137
Spring (May 12, 1961)	273	308	336	281	292	296
Weaning (July 20, 1961)	433	486	478	438	455	460
Gain to spring (142 days)	138	174	201	145	156	159
Gain, May to July (69 days)	160	178	142	157	163	164
Total gain (211 days)	298	352	343	302	319	323
Creep-feed per calf						
Pounds	---	775	311	71	108	259
Cost	---	\$19.76	\$7.93	\$1.90	\$1.36	\$4.53
Dollar values						
Value of total gain	75.99	89.76	87.46	77.01	81.94	82.36
Value of gain minus creep-feed cost	75.99	70.00	79.53	75.11	80.58	77.83

<sup>1</sup> Creep-fed a mixture of 55 percent steam rolled milo, 30 percent whole oats, 10 percent cottonseed meal, and 5 percent cane molasses.

<sup>2</sup> Baled alfalfa hay fed in an open bunk.

<sup>3</sup> Originally there were 17 calves per lot. Two calves were removed from the experiment due to the death of the cow.

<sup>4</sup> Creep-feed mixture cost \$2.55 per 100 lbs. The pelleted mixture cost \$2.68 per 100 lbs. Alfalfa hay cost \$25.00 per ton. Pelleted alfalfa hay cost \$35.00 per ton.

Different creep-feeds were compared in Lots 3, 4, 5, and 6. In these lots creep-feeding was stopped on May 12 (Table 1). In the 142 days until spring, the average increase in gain over the non-creep-fed group was 7, 18, and 21 lbs. for the pelleted mixture (Lot 4), alfalfa hay (Lot 5), and pelleted alfalfa hay (Lot 6), respectively. Consumption of the mixture was decreased by pelleting. In this year an average of only 71 lbs. of pellets was consumed compared to 194 lbs. during the previous test. The two-year average total winter and summer gain of those fed the pelleted mixture was only slightly greater than the total gain of the Lot 1 calves.

Gains of calves creep-fed alfalfa hay and pelleted alfalfa hay were nearly equal in both periods. In the 1961 trial consumption of the pelleted alfalfa hay was greater than the 1960 trial, but consumption of the loose alfalfa hay was 200 lbs. less. This lower consumption was probably due to the poorer quality of the hay. The two-year average

Table 2.—Creep-Feeding Fall Calves (Two-year average).

Lot number	1	2	3	4	5	6
Creep-feed	None	Mixture <sup>1</sup> until weaning	Mixture <sup>1</sup> until spring	Pelleted mixture until spring	Alfalfa <sup>2</sup> hay until spring	Pelleted alfalfa hay until spring
Number of calves	34	35	34	34	34	33
Avg. wt. per calf, lbs.						
Initial	137	141	136	131	133	136
Spring	268	309	322	278	284	294
Weaning	427	495	466	432	442	447
Gain to spring	131	168	186	147	151	158
Gain, spring to weaning	159	186	144	154	158	153
Total gain	290	354	330	301	309	311
Creep-feed per calf						
Pounds	---	894	275	132	208	242
Cost <sup>3</sup>	---	\$21.40	\$6.96	\$3.47	\$2.22	\$3.94
Dollar values						
Value of total gain <sup>2</sup>	73.25	88.48	83.48	76.13	78.22	78.68
Value of gain minus creep-feed cost	73.25	67.08	76.52	72.66	76.00	74.74

<sup>1</sup> Creep-fed a mixture of 55 percent steam rolled milo, 50 percent whole oats, 10 percent cottonseed meal, and 5 percent cane molasses.

<sup>2</sup> Baled alfalfa hay fed in an open bunk.

<sup>3</sup> Based on prices current when the two tests were conducted.

increase in gain due to creep-feeding an average of 208 lbs. of alfalfa hay was 20 lbs. Feeding alfalfa hay in either form was slightly more profitable than not creep-feeding.

### Summary

In a two-year test with fall calves, creep-feeding a concentrate mixture until spring increased gains an average of 46 lbs. (137 vs. 168 and 186 lbs.). The winter gains of calves creep-fed long alfalfa hay and pelleted alfalfa hay were nearly equal and were an average of 18 lbs. greater than the gain of calves not creep-fed. Feed consumption of the pelleted mixture was low and resulted in only an 11 lbs. increase in gain compared to the non-creep-fed calves. During the summer, creep-feeding the mixture increased gains 27 lbs. when compared to Lot 1 calves. When creep-feeding was discontinued in the spring, calves previously creep-fed the concentrate meal mixture gained an average of 15 lbs. less during the summer than the non-creep-fed calves. The value of the calf gain minus the cost of the creep-feed was lowest when the calves were creep-fed until weaning, highest when creep-fed the mixture until spring, second and third highest when fed alfalfa hay in the different forms, and intermediate and nearly equal for not creep-feeding and for creep-feeding the pelleted mixture.