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CREEP FEEDING
In Production of Feeder Calves



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Value of Creep Feeding In Production of Feeder Calves

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Introduction

THE maintenance of cow herds for production of feeder calves is one of the major phases of West Virginia's beef cattle industry. West Virginia's high-quality feeder calves have attracted the attention of feeders for many years. Such calves demand a premium, and the difference between the price paid for fancy and choice calves and that paid for calves of lower grade has been great enough to warrant the production of fancy and choice calves.

Many sound practices must be followed to produce calves grading choice or better. The use of a purebred bull of acceptable type, proper winter feeding and management of the bull and of the cow herd are essential for best results. An abundance of good pasture is of equal importance in the production of high-quality feeder calves.

The feeding value and carrying capacity of many pastures in West Virginia often are reduced during July and August because of low rainfall. Accordingly, the amount of milk produced by cows during this period decreases just when the calves need and can use more milk to best advantage. In addition, the calf cannot obtain as much feed value from the pasture as it should for economical and rapid gains. As a result, many calves are unable to develop as they should and are sold grading good or lower when they could have graded choice or better had sufficient feed been available.

With these factors in mind, trials were started in the spring of 1951 to determine the effect of supplementary feed upon the weaning weight and grade of feeder calves.

The Trials

Thirty high-grade Hereford cows were divided as equally as possible into two groups of 15 head each on the basis of: (1) previous performance, that is, regularity in calving, and grade and weight of calf at weaning; (2) age; (3) weight; and (4) breeding. Both groups were wintered together on a ration of mixed hay and grass-legume silage so as to gain between 75 and 100 pounds.

For these trials, a highly-productive river bottom bluegrass-white clover pasture was divided equally so as to supply 1.5 acres for each cow and calf. Although both pastures were as nearly equal as possible in respect to grazing, shade, and water, the two groups of cows were rotated every two weeks to reduce the effects of any differences between the pastures. The grazing season began about May 1 each year, depending upon weather and pasture conditions. Both pastures received the same lime and fertilizer treatment.

Each year all cows were bred to a purebred Hereford bull of desirable type and size. The breeding season began about 15 days after the cows were turned to pasture, thus most of the calves were born during February and March. During the 60-day breeding season both groups of cows were mated to the same bull. This was accomplished by alternating the bull between the two groups every twelve hours.

In order to reduce the effect of any differences between the groups of cows on the results obtained, creep feeding was alternated. For example, in 1951, calves dropped by the cows in group A had access to a creep ration composed of six parts of coarsely ground yellow corn and one part soybean oil meal. The next year the calves dropped by the cows in group B had access to the creep while those in group A did not. Figure 1 illustrates the type of feeder used in these trials.



Figure 1. The creep used in these trials can be easily and cheaply built and can be moved from one pasture to another. Plans may be obtained from your county agricultural agent or by writing to the Department of Animal Husbandry, West Virginia University, Morgantown.

Cows which failed to calve or died during the trials were replaced with cows as nearly the same as possible in respect to age, weight, performance, and breeding.

All calves were weighed at the beginning of the creep-feeding period and every 28 days thereafter until weaning, except in 1955. In that year the calves were weighed on the first three days of creep feeding and on each of the last three days of the trial. The averages of these weights were used as the beginning and ending weights respectively.

Fresh feed was added to the creep each week (more often if needed) so that the calves had all they wanted to eat. Feed cost figures are based on actual prices paid for feed.

The average weaning age for the five trials was 214 days. At weaning the calves were graded by a committee of three men who were familiar with the official feeder calf grades of the United States Department of Agriculture (Figures 2, 3, and 4). The average of the grades given to each calf by the committee and the average price paid for that grade at all West Virginia Demonstrational Feeder Calf Sales held that year, were used to determine the value of each calf. The results presented have not been adjusted for age or sex.

Results

The influence of creep feeding upon grade, daily gains, and weaning weight is shown in Table 1. Creep feeding improved the average feeder calf grade by approximately one full grade, from good to choice.

TABLE 1. INFLUENCE OF CREEP FEEDING ON FEEDER CALF GRADE, WEANING WEIGHT AND RATE OF GAIN
(FIVE-YEAR SUMMARY)

GRADE	NO CREEP FEEDING			CREEP FED		
	STEERS (36)*	HEIFERS (35)	STEERS & HEIFERS (74)	STEERS (42)	HEIFERS (32)	STEERS & HEIFERS (74)
Fancy	1	2	3	16	9	25
Choice	17	17	34	24	20	44
Good	17	18	35	2	3	5
Medium	1	1	2	0	0	0
Av. Grade**	2.50	2.53	2.51	3.33	3.19	3.27
Av. Initial Wt.-Lbs.	209.5	208.2	208.8	208.9	200.9	205.1
Av. Ending Wt.-Lbs.	428.4	426.0	427.2	511.1	469.2	493.2
Av. Total Gain-Lbs.	218.9	217.8	218.3	302.5	268.3	287.7
Av. Daily Gains-Lbs.	1.7	1.6	1.67	2.3	2.1	2.2

Calves were creep fed an average of 131 days and weaned at an average age of 214 days.

*Numbers in parentheses represent number of calves in trials.

**Fancy—4; Choice—3; Good—2; Medium—1.



Figure 2. A typical fancy feeder steer.



Figure 3. A typical choice feeder heifer.



Figure 4. A typical good feeder steer.

In addition, creep feeding increased daily weight gain by 0.6 pounds in the case of the steers and 0.5 pounds in the heifers. As a result, the creep-fed steers and heifers weighed 83 and 43 pounds more respectively at weaning time than calves which did not receive supplementary feed. Moreover, the creep-fed calves were much more uniform in weight and appearance. (Figures 5 and 6.)

The amount of feed eaten and feed costs over the five-year period are given in Table 2. The average amount of feed consumed by each calf was 519.4 pounds, but the amount eaten varied considerably from year to year. This difference was related to the quality of pasture, which in turn was influenced by moisture conditions. The rainfall distribution chart, Table 1, Appendix, shows that rainfall was particularly low in 1953. During this year the calves consumed the most feed, and during 1955, when moisture was plentiful, the calves consumed the smallest amount of feed.

It is not surprising then that the effect of creep feeding upon gain and weight was greatest in years when moisture was limited. This is clearly shown in Appendix Tables II, III, IV, V and VI, which show results for each year.

Each year creep feeding improved the grade and increased the weaning weight. As a result, creep-fed calves brought a higher price per hundred weight and per head. When the results of all five years are averaged, Table 3, the selling price per hundred weight increased by \$3.20 for creep-fed steers and \$2.10 for the creep-fed heifers. This increase in value because of improvement in grade, along with the increase in weaning weight, increased the value per head of the steers by \$38.19, and \$19.15 for the heifers.

The average yearly cost of creep feed per calf was \$20.41. Feed consumption and utilization are considered to be the same for steers and heifers of the age and weight used in these trials. Considering then that the feed costs for steer and heifer calves were the same, creep feeding increased net returns from the steers four out of five years but only increased net returns from the heifers one year out of the five. On this basis, creep feeding increased the average yearly return from steer calves by \$17.74 per calf above feed costs, whereas with the heifers there was a loss of \$1.29 per head.

Discussion and Summary

Five trials were conducted with two groups of 15 high-grade Hereford cows and their calves to determine the value of creep feeding in the production of feeder calves. The cows and calves grazed well-fertilized, bluegrass-white clover pastures which provided about 1.5 acres



Figure 5. Typical group of creep-fed calves at weaning. Notice uniform size of calves compared to those shown in Fig. 6 which did not receive additional feed. Average weight—476 lbs.



Figure 6. These calves were not creep fed. Notice the lack of uniformity and bloom when compared with the creep-fed calves shown in Figure 5. Average weight—429 lbs.

TABLE 2. Feed Consumption and Feed Cost*

	1951	1952	1953	1954	1955	5-yr. Average
Number of Calves	15	15	14	15	15	14.8
Feed Consumed, lbs.	6,792	7,371	11,405	7,651	5,218	7,687.4
Av. Feed Consumed per calf, lbs.	452.8	491.4	815	510	348	519.4
Av. Daily Feed Consumed/calf, lbs.	3.23	3.51	5.40	4.55	3.10	3.96
Total Feed Cost	\$276.62	\$293.96	\$448.56	\$306.04	\$175.18	\$300.07
Av. Cost of Feed/calf	\$ 18.44	\$ 19.59	\$ 32.04	\$ 20.40	\$ 11.75	\$ 20.44
Av. Cost per 100# of Feed . .	\$ 4.07	\$ 3.99	\$ 3.93	\$ 4.00	\$ 3.36	\$ 3.87
Av. Price of No. 2 Corn/Cwt.*	\$ 3.95	\$ 3.78	\$ 3.90	\$ 3.80	\$ 3.20	\$ 3.73
Av. Price of Soybean Oil Meal* 41-43% Cwt.	\$ 4.77	\$ 5.25	\$ 5.20	\$ 5.00	\$ 4.30	\$ 4.90
No. Days on Creep Ration . . .	140	140	151	112	112	131

*Based on purchase price of feeds.

**TABLE 3. Value of Creep Feeding in Feeder Calf Production
(Five - Year Summary)**

	NO CREEP			CREEP-FED		
	Steers	Heifers	Steers	Heifers	Steers	Heifers
No. of Calves†	36	38	42	38	42	32
Av. Weaning Wt., lbs	428.36	426.02	511.36	426.02	511.36	469.24
Feeder Grade	1	2	16	2	16	9
Fancy	(32.24)*	(27.37)	(32.24)	(27.37)	(32.24)	(27.37)
Choice	17	17	24	17	24	20
Good	(27.58)	(22.51)	(27.58)	(22.51)	(27.58)	(22.51)
Medium	17	18	2	18	2	3
	(24.77)	(20.12)	(24.77)	(20.12)	(24.77)	(20.12)
	1	1	0	1	0	0
	(22.28)	(18.72)	(22.28)	(18.72)	(22.28)	(18.72)
Av. Selling Price Cwt.	\$ 26.28	\$ 21.50	\$ 29.48	\$ 21.50	\$ 29.48	\$ 23.60
Av. Selling Price Calf	\$112.57	\$ 91.59	\$150.75	\$ 91.59	\$150.75	\$110.74
Increased Value from Creep		**\$102.08		**\$130.75		
Feeding Calf						
Cost of Feed Consumed Calf			\$ 38.18		\$ 38.18	\$ 19.15
Return per Calf from Creep			\$ 20.44		\$ 20.44	\$ 20.44
Feeding Above Feed Cost			\$ 17.74		\$ 17.74	\$ -1.29

†Calves were weaned at an average age of 214 days.

*Figures in parentheses denote average price received for respective grades at all Demonstrational Feeder Calf Sales held in West Virginia for the five-year period.

**These figures are based on the results obtained in these trials considering that the calf crop is equally divided between steers and heifers.

per cow. Each year calves from one group of cows had access to a creep ration consisting of six parts coarsely ground yellow corn and one part soybean oil meal.

Creep feeding improved the average feeder calf grade from good to choice, and increased the average weaning weight of the steers by 83 pounds and that of the heifers by 43 pounds. This improvement in grade and increase in weight resulted in an average increase in value of \$38.19 per head for steers and \$19.15 for the heifers.

Calves were creep fed for an average of 131 days each year. During this period they consumed an average of 519.4 pounds of feed per head at a cost of \$20.44.

Grazing conditions, as affected by the amount and distribution of rainfall, influenced the response of the calves to creep feeding and the amount of feed eaten. When moisture was insufficient, the calves ate more of the creep feed than when there was sufficient rainfall and grazing was good.

When the \$20.44 feed cost is charged against each calf, creep feeding increased the average yearly net returns per steer by \$17.74. However, in the case of the heifers there was a loss of \$1.29 per head.

The results obtained in these trials (considering that the calf crop is equally divided between steers and heifers), shows that creep feeding increased the yearly return per calf above feed costs by \$8.23.

Acknowledgement

The cooperation of Mr. B. F. Creech and Mr. Joseph Emch, Extension Animal Husbandmen, in grading the calves is appreciated. The photographs were taken by Mr. David Creel, Station Photographer.

APPENDIX

TABLE I - Appendix.

Climatological Data R.M. Farms, Wardensville, W. Va.

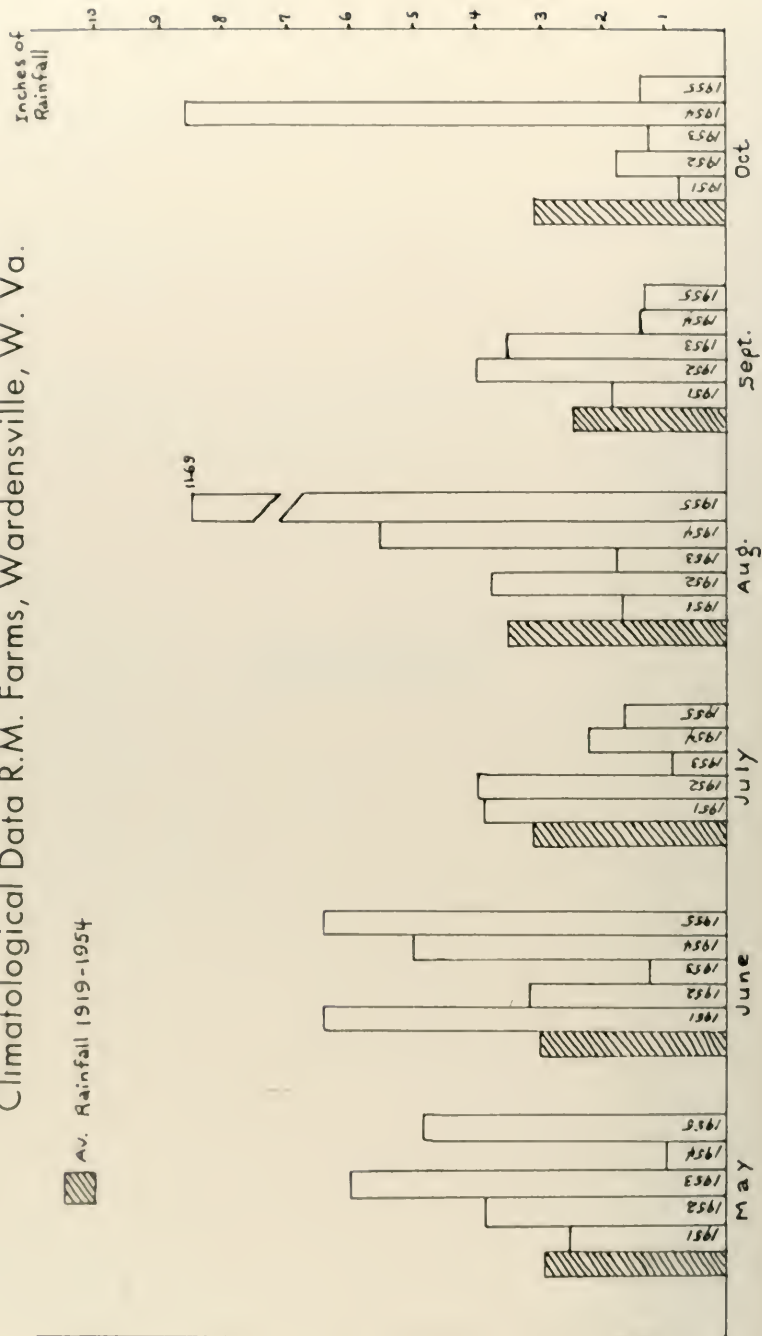


TABLE II - Appendix. The Value of Creep Feeding in Feeder Calf Production, 1951

	NO CREEP FEEDING		CREEP FEEDING	
	Steers	Heifers	Steers	Heifers
No. of Calves*	5	9	9	6
Av. Weaning Wt., Lbs.	388.0	406.1	493.9	428.3
Feeder Grade: Fancy	0	1	2	0
	(46.80)**	(43.71)	(46.80)	(43.71)
Choice	2	3	7	6
	(42.72)	(39.19)	(42.72)	(39.19)
Good	3	4	0	0
	(39.28)	(35.57)	(39.28)	(35.57)
Medium	0	1	0	0
	(37.33)	(34.11)	(37.33)	(34.11)
Av. Selling Price/Cwt.	\$ 40.77	\$ 37.65	\$ 43.66	\$ 39.19
Av. Selling Price/Calf	\$158.19	\$152.90	\$215.64	\$167.85
Increased Value From Creep Feeding/Calf				
Cost of Feed Consumed/Calf			\$ 57.45	\$ 14.95
Return Per Calf From Creep Feeding Above Feed Cost			\$ 18.44	\$ 18.44
			\$ 39.01	\$ -3.49

*Calves were weaned at an average age of 207 days.

**Figures in parentheses denote average price received for respective grades at all Demonstrational Feeder Calf Sales held in West Virginia for the year shown.

TABLE III - Appendix. The Value of Creep Feeding in Feeder Calf Production, 1952

	NO CREEP FEEDING		CREEP FEEDING	
	Steers	Heifers	Steers	Heifers
No. of Calves*	7	8	9	6
Av. Weaning Wt., Lbs.	427.1	413.3	498.3	443.3
Feeder Grade	1	0	5	2
Fancy	(35.00)**	(32.14)	(35.00)	(32.14)
Choice	2	4	4	3
	(30.01)	(26.05)	(30.01)	(26.05)
Good	3	4	0	1
	(26.26)	(21.41)	(26.26)	(21.41)
Medium	1	0	0	0
	(22.62)	(20.24)	(22.62)	(20.24)
Av. Selling Price/Cwt.	\$ 28.44	\$ 23.73	\$ 32.80	\$ 27.39
Av. Selling Price/Calf	\$121.47	\$102.35	\$163.44	\$121.42
Increased Value From Creep Feeding/Calf				
Cost of Feed Consumed/Calf				
Return Per Calf From Creep Feeding Above Feed Cost			\$ 41.97	\$ 19.07
			\$ 19.60	\$ 19.60
			\$ 22.37	\$ -.53

*Calves were weaned at an average age of 210 days.

**Figures in parentheses denote average price received for respective grades at all Demonstrational Feeder Calf Sales held in West Virginia for the year shown.

TABLE IV - Appendix. The Value of Creep Feeding in Feeder Calf Production, 1953

	NO CREEP FEEDING		CREEP FEEDING	
	Steers	Heifers	Steers	Heifers
No. of Calves*	9	6	6	8
Av. Weaning Wt., Lbs.	415	404	580	511
Feeder Grade: Fancy	0	0	5	5
	(23.60)**	(19.26)	(23.60)	(19.26)
Choice	5	3	1	2
	(19.64)	(13.68)	(19.64)	(13.68)
Good	4	3	0	1
	(16.63)	(12.04)	(16.63)	(12.04)
Medium	0	0	0	0
	(14.20)	(10.73)	(14.20)	(10.73)
Av. Selling Price/Cwt.	\$ 18.33	\$ 12.89	\$ 23.04	\$ 16.97
Av. Selling Price/Calf	\$ 76.07	\$ 52.08	\$ 133.63	\$ 86.72
Increased Value From Creep Feeding/Calf				
Cost of Feed Consumed/Calf			\$ 57.56	\$ 34.64
Return Per Calf From Creep Feeding Above Feed Cost			\$ 32.04	\$ 32.04
			\$ 25.52	\$ 2.60

*Calves were weaned at an average age of 236 days.

**Figures in parentheses denote average price received for respective grades at all Demonstrational Feeder Calf Sales held in West Virginia for the year shown.

TABLE V - Appendix. The Value of Creep Feeding in Feeder Calf Production, 1954

	NO CREEP FEEDING		CREEP FEEDING	
	Steers	Heifers	Steers	Heifers
No of Calves*	8	7	7	8
Av Weaning Wt, Lbs	443.7	445.7	503.6	470.6
Feeder Grade	0	1	3	2
Fancy	(27.96)**	(19.62)	(27.96)	(19.62)
Choice	4	3	4	5
	(22.59)	(16.21)	(22.59)	(16.21)
Good	4	3	0	1
	(20.48)	(15.26)	(20.48)	(15.26)
Medium	0	0	0	0
	(18.49)	(13.78)	(18.49)	(13.78)
Av. Selling Price/Cwt.	\$ 21.62	\$ 16.35	\$ 24.72	\$ 17.02
Av Selling Price/Calf	95.93	72.87	\$124.49	\$ 80.10
Increased Value From Creep Feeding/Calf				
Cost of Feed Consumed/Calf			\$ 28.56	\$ 7.23
Return Per Calf From Creep Feeding Above Feed Cost			\$ 20.40	\$ 20.40
			\$ 8.16	\$ -13.17

*Calves were weaned at an average age of 204 days.

**Figures in parentheses denote average price received for respective grades at all Demonstrational Feeder Calf Sales held in West Virginia for the year shown.

TABLE VI - Appendix. The Value of Creep Feeding in Feeder Calf Production, 1955

	NO CREEP FEEDING		CREEP FEEDING	
	Steers	Heifers	Steers	Heifers
No. of Calves*	7	8	11	4
Average Weaning Weight, Lbs.	468	443	481	493
Feeder Grade: Fancy	0	0	1	0
	(27.85)**	(22.12)	(27.85)	(22.12)
Choice	4	4	8	4
	(22.93)	(17.41)	(22.93)	(17.41)
Good	3	4	2	0
	(21.21)	(16.34)	(21.21)	(16.34)
Medium	0	0	0	0
	(18.78)	(14.76)	(18.78)	(14.76)
Average Selling Price/Cwt.	\$ 22.26	\$ 16.88	\$ 23.16	\$ 17.41
Average Selling Price/Calf	\$104.18	\$ 74.78	\$111.40	\$ 85.83
Increased Value From Creep Feeding/Calf				
Cost of Feed Consumed/Calf				
Return Per Calf From Creep Feeding Above Feed Cost			\$ 7.22	\$ 11.05
			\$ 11.75	\$ 11.75
			\$ -4.53	\$ -7.70

*Calves were weaned at an average age of 206 days.

**Figures in parentheses denote average price received for respective grades at all Demonstrational Feeder Calf Sales held in West Virginia for the year shown.

