

## WINTERING BEEF CATTLE ECONOMICALLY IN WESTERN NORTH DAKOTA WINTER 1952-53

### OBJECTIVES:

1. To determine the effects of limited winter rations upon body weight and ability to maintain profitable calf production in Hereford cows.
2. To determine the effects of limited winter rations upon subsequent feed lot gains and calf production in steers and replacement heifers.

### PRESENT STATUS:

On November 1, 1950, all cows and heifers of breeding age at the Dickinson Experiment Station were divided into four lots to begin a wintering trial using two rations, each ration fed at two levels. On November 1, 1951, these cows were regrouped into six lots to allow introduction of a third ration at two levels. Only necessary replacements have been made with yearling heifers from the test cows.

Three lots are wintered on the amount of feed recommended by the National Research Council, and three lots are allowed only 3/4 of this amount. Corn silage is fed in all lots. Crested wheatgrass hay is fed in two lots and prairie hay is fed in four lots. Two of the prairie hay lots also receive soybean oil meal. The cows are fed a grain mixture of ground barley and oats 1:1 from calving time until they are turned on pasture, usually about May 1. All cattle are grazed together on excellent tame and native grass pastures until October 30, when calves are weaned and all animals are returned to the winter lots.

<b>Table I - Wintering Beef Cows at Two Levels of Nutrition, using 3 rations</b>
--

## 1952-1953

Lot No.	Full Rations		3/4 Rations		Full	3/4
	I	II	III	IV	V	VI
No. Cows per Lot	10	10	10	10	10	11
Days on Winter Feed (Av. Daily Ration, lbs. Nov. 1, 1952 - April 28, 1953)	179	179	179	179	179	179
Corn Silage - lb.	30.01	29.88	22.46	22.77	30.04	22.67
Crested Wheatgrass Hay - lb.	10.01		7.50			
Prairie Hay - lb.		10.02		7.51	8.98	6.78
Gr. Oats & Barley 1:1 - lb.*	7	7	5.25	5.25	7	5.25
Soybean oil meal - lb.					.8	.6
Av. Wt. Nov. 1, 1952**	985	987	985	986	984	931

Av. Wt. April 28, 1953	1074	1024	988	938	1050	895
Av. Winter Gain per hd.	89	37	3	-48	66	-36
Summer Gains:						
Av. Wt. April 28, 1953***	1074	1024	988	887	1050	895
Av. Wt. Oct. 30, 1953	1065	1018	1058	988	1022	1034
Av. Summer Gain per hd.	-9	-6	70	101	-28	139
Calf Production:						
No. Calves weaned	8	9	8	9	9	8
No. Cows not bred	0	1	1	1	0	2
No. Calves lost	2	0	1	0	1	0
	(1 cripple)				(Strayed)	
Av. Birth Wt.	70.7	74.0	68.3	68.4	67.7	64.5
Av. Weaning Wt. Oct 30	396	396	333	368	411	363
Av. Age of calves	198.6	193.4	179.1	194.4	195.8	192.5

weaned (days)						
------------------	--	--	--	--	--	--

Salt and bonemeal mixed 2:1 were provided in troughs throughout winter.

\*Grain was fed only from calving time to April 28, 1953.

\*\*One cow died in lot 6 in March, so her weight was not used in summary. By coincidence an alternate cow was in lot 6 and she was substituted for the dead cow.

\*\*\*One dry cow from lot 4 was culled and sold in May, 1953.

[Table I](#) shows the rations fed, body weights of cows, and birth and weaning weights of calves produced during the current year. [Table II](#) summarized three years weight changes in cows and gives the average birth and weaning weights of the calves from each lot.

The winter of 1952-53 was far more mild than were the first two winters of the current trial. The unusually warm weather of last winter resulted in higher than normal body weights for all animals on April 28, 1953, when cows and calves were all turned to pasture. This somewhat early grazing date was necessitated by the extremely muddy condition of the lots at that time. Lots 3, 4, and 6 which received only 3/4 rations during winter, only lost about half as much weight last winter as in previous winters. Lot 3 did not lose at all, but the high spring weight in this lot was partially due to the fact that only four of the ten cows had calved at the time of the April 28 weighing. None of the other lots had more than one calf to fall after April 28. Cows on full rations in lots 1, 2, and 5 gained from 37 to 39 pounds over winter, whereas they normally remain about steady in weight. Cows in lots 5, and 6 which received soybean oil meal all winter appeared to respond no differently from the others.

**Table II - Three Year Summary of Beef Cow Wintering Trial- November 1, 1950 to October 30, 1953**

	(2years)					
	Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6
Av. Wt. Into lots - Nov. 1	970	981	970	972	963	938

Av. Wt. out of lots - about May 1	1004	979	895	891	983	870
Av. change - Wt. over winter	34	-2	-75	-81	20	-68
Av. No. calves born	7 2/3	8 1/3	9	7 2/3	9 $\frac{2}{3}$	9
Av. No. calves weaned	6 2/3	8	8	7	9 $\frac{2}{3}$	8 $\frac{2}{3}$
Av. Birth Wt.	70 1/3	74 2/3	67 1/3	69 1/3	72	68
Av. Weaning Wt	414	421	377	401	408	376
Av. Weaning Age (days)	205	203	198	203	196	195

This is the first year when weaning weights of all full ration lots have been above the weaning weights of all 3/4 ration lots. The three year average weaning weights appear to bear out this year's results. A difference in birth weights may also emerge from the wintering of cows at two levels. We cannot see that we get more calves from the cows which are fed the higher winter ration.

The 1952 calf crop, consisting of twenty steers and twenty heifers, was divided into two uniform lots November 1, 1952, and fed at two levels of feed intake until April 30, 1953, when all were turned out to graze together until October 30, 1953. Corn silage, crested wheatgrass hay and oats constituted a 'normal' ration (lot A) and corn silage with crested wheatgrass hay made up the low level ration (lot B). [Table III](#) summarizes the winter and subsequent summer results.

Winter gains were higher in both calf lots during the winter of 1952-53 than in either of the two preceding winters. We credit this mild winter weather for this. Daily summer gains and total year's gains were somewhat lower this year than in the preceding year. The calves which received the better winter ration gained 39 pounds more during the year than the calves on the low winter ration. This additional 39 pounds of beef cost \$12.02 in winter feed, or \$30.82 per

cwt. Over the three year period, an average of 41 pounds more beef was produced by each of the calves on better winter rations and the average feed cost has been \$13.23 more per head than for the low level calves.

<b>Table III - Two Levels of Winter Feeding Calves followed by Summer Grazing 1952-1953</b>		
	Normal Lot A	Limited Lot B
No. Calves per lot	20	20
Av. Daily ration, lbs. Nov. 1, 1952-April 30, 1953		
Corn Silage	24.77	19.93
Crested Wheatgrass Hay	3.79	3.98
Oats	1.98	---
Av. Initial Wt. Nov. 1, 1952	381	381
Av. Wt. April 30, 1953	586	483
Av. Winter Gain, lbs.	205	102
Av. Daily Winter Gain, lbs.	1.13	.56
Av. Final Wt. October 30, 1953	744.0	704.7
Av. Summer Gain, lbs.	158	221.7
Av. Daily Summer Gain, lbs.	.86	1.21
Av. Total Gain, lbs.	363	324

Av. Winter Feed Cost per Calf	\$39.07	\$27.05
-------------------------------	---------	---------

Feed Cost of the Additional Weight in Lot A - \$30.82 per cwt.  
 Common salt and bonemeal mixed 2:1 were always available in the lots.  
 Prices used in computation of costs were: silage \$10 ton; hay \$25 ton, oats \$.72 bushel.

<b>Table IV - Three Year Summary of Beef Calf Wintering Trials November 1, 1950 to October 30, 1953</b>		
	Normal Ration	Limited Ration
Average weight into lots November 1	421	422
Average weight out of lots, about May 1	594	506
Average daily winter gain	.925	.447
Average weight off grass - October 30	770	731
Average daily summer gain	.993	1.270
Total year's gain per calf	349	308
Average winter feed cost per calf	\$41.29	\$28.06
Average feed costs of the 41 pound greater weight in the normal ration lot: 32.27 cents per pound.		

## SUMMARY

Four lots of beef breeding cows have been wintered for three successive winter on rations of corn silage and hay fed at two levels. Two lots were fed prairie hay and two lots were fed crested wheatgrass hay. Two additional lots of cows have been wintered two winters on a ration of silage, hay, and soybean oil meal.

There appears to be no difference in the performance of the cows between the two types of hay fed; and there is not a definite apparent advantage as yet in feeding soybean oil meal with silage and hay.

There are some differences in performance of the cows between a 'normal' ration of 30 pounds corn silage with 10 pounds hay and low level ration of just 3/4 these amounts of feed. Cows on the lower rations lose weight over winter. Cows on the better rations have slightly heavier calves at birth and at weaning than cows on low winter rations.

Beef calves wintered on a ration of 25 pounds corn silage, 4 pounds crested wheatgrass hay, and 2 pounds oats gain about twice as much over winter as calves fed 20 pounds corn silage and 4 pounds of crested wheatgrass hay. When all these calves are grazed together the following summer, the lower winter ration animals tend to 'catch up' with the better wintered animals. The spread at year's end, however, averages 41 pounds in favor of better winter rations. This 41 pounds more beef on the well wintered calves has cost 32.27 cents per pound in greater winter feed costs.

This summary is only a preliminary report on an experiment which is being continued.

---

[Back to 1953 Research Reports Table of Contents](#)

[Back to Research Reports](#)

[Back to Dickinson Research Extension Center \(http://www.ag.ndsu.nodak.edu/dickinso/\)](http://www.ag.ndsu.nodak.edu/dickinso/)

[Email: drec@ndsuent.nodak.edu](mailto:drec@ndsuent.nodak.edu)

---