

## Project 253-2: Wintering, Grazing and Fattening Heifers

### Wintering Heifer Calves That Are To Be Fattened for the Summer or Early Fall Market, 1949-50

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This is a report of the wintering phase of the third of a series of tests started in the fall of 1947 to develop a system or systems of fattening heifer calves similar to the deferred full feeding system involving the use of good quality steer calves which was developed at Kansas State College.

Upon completion of this year's test the results will be published in the Annual Feeders' Day report for 1951. The results of this experiment should prove of interest to producers with native pasture or temporary pasture, as well as those who have no pasture but are interested only in wintering and full feeding heifers.

The objectives of this experiment are:

- (1) To develop a system of deferred full feeding using heifer calves.
- (2) To compare different wintering rations for heifer calves.
- (3) To compare various methods of finishing heifers. The 1949-50 wintering test included:
  - (1) A comparison of grain VS. no grain in wintering rations.
  - (2) A comparison of five protein supplements, solvent extracted cottonseed meal 41% crude protein, old process cottonseed meal 41% crude protein, soybean pellets 41% crude protein, dehydrated red clover pellets 14.55% crude protein, dehydrated alfalfa 17% crude protein.

#### EXPERIMENTAL PROCEDURE

Eighty good quality Hereford heifer calves were purchased November 4, 1949, for use in this test. They were divided into eight lots of 10 head each. The system of management planned for each lot follows.

- Lot 1 - Wintered on 2 pounds of corn, solvent extracted cottonseed meal, silage and prairie hay; grazed on bluestem pasture May 1 to July 15; then full fed in dry lot 100 days.
- Lot 2 - Wintered on 2 pounds of corn, soybean pellets, silage and prairie hay; grazed on bluestem pasture May 1 to July 15; then full fed corn on bluestem pasture 100 days.
- Lot 3 - Wintered on 2 pounds of corn, old process cottonseed meal, silage, and prairie hay; then full fed in dry lot 100 days.
- Lot 4 - Wintered on 2 pounds of corn, dehydrated red clover pellets, silage and prairie hay; then full fed corn on brome grass 100 days.
- Lot 5 - Wintered on 2 pounds of corn, dehydrated alfalfa pellets, silage and prairie hay; grazed on brome grass April 15 to June 1; full fed corn on brome grass June 1 to July 1, then full fed in a dry lot.
- Lot 6 - Wintered on soybean pellets, silage and prairie hay; grazed May 1 to July 15 on bluestem pasture; then full fed 100 days in dry lot.
- Lot 7 - Wintered on soybean pellets, silage and prairie hay; grazed May 1 to July 15 on bluestem pasture; then full fed 100 days on bluestem pasture.
- Lot 8 - Wintered on soybean pellets, silage and prairie hay; grazed May 1 to August 15 on bluestem pasture, fed 1½ pounds of soybean pellets per head daily on pasture from July 15 to August 15; then full fed in a dry lot.

#### OBSERVATIONS

1. Heifers fed 2 pounds of corn per head daily in addition to silage,

prairie hay and a protein concentrate gained on the average .18 of a pound more per head daily than heifers fed only silage, prairie hay and a protein concentrate. Stated in another way, 290 pounds (5.2 bu.) of corn produced 24 pounds of gain on the average. Compare lots 1, 2 and 3 with lots 6, 7 and 8.

2. The heifers in lots 1, 2, 3 and 5 fed the additional 2 pounds of corn were quite fleshy at the close of the wintering period.
3. Three pounds of dehydrated red clover pellets fed in lot 4 as a protein supplement produced a gain of only .99 of a pound per head daily compared to gains of 1.32 pounds for lot 1 fed solvent extracted cottonseed meal, 1.32 pounds for lot 2 fed soybean pellets and 1.28 pounds for lot 3 fed old process cottonseed meal. The red clover pellets were unpalatable, having a bitter taste, and difficulty was encountered in getting the heifers to consume them. Finally, they had to be ground and mixed with the silage. This lot presented an unthrifty appearance, had harsh appearing hair and showed considerably less flesh than any other well wintered lot.
4. Two and one half pounds of dehydrated alfalfa pellets per head daily fed in lot 5 produced a lower gain than was obtained in lots 1, 2 and 3 fed protein concentrates.
5. The feeding of dehydrated red clover pellets in lot 4 and dehydrated alfalfa pellets in lot 5 decreased the roughage consumption significantly. All lots were fed as much prairie hay as they would consume after cleaning up their silage ration. It was planned to feed 20 pounds of silage per head daily but lot 4 was never able to consume quite 20 pounds of silage per head daily and lot 5 had some difficulty in consuming this amount.
6. One pound of soybean pellets, and 20 pounds of silage per head daily fed with prairie hay in lots 6, 7 and 8 produced a little more than 1 pound of gain per head daily.
7. Solvent extracted cottonseed meal, old process cottonseed meal and soybean pellets gave approximately the same daily gain, see lots 1, 2 and 3. No other differences were noted among these lots.
8. The cost of producing 100 pounds of gain was greatly increased in lots 4 and 5 fed dehydrated red clover and alfalfa pellets.

**TABLE 1. WINTERING HEIFER CALVES THAT ARE TO BE FATTENED FOR THE SUMMER OR EARLY FALL MARKET**

**PHASE I—WINTERING**

November 21, 1949 to April 15, 1950—145 days

1. Lot number .....	1	2	3	4	5	6	7	8
2. Number of heifers per lot....	10	11	10	10	10	11	10	10
3. Ration fed .....	Corn, Solvent extracted cottonseed meal, Silage, Prairie Hay	Corn, Soybean Pellets, Silage, Prairie Hay	Corn, old process Cottonseed Meal, Silage, Prairie Hay	Corn, Dehydrated Red Clover Pellets, Silage, Prairie Hay	Corn, Dehydrated Alfalfa Pellets, Silage, Prairie Hay	Soybean Pellets, Silage, Prairie Hay	Soybean Pellets, Silage, Prairie Hay	Soybean Pellets, Silage, Prairie Hay
4. Average daily ration, lbs.:								
Corn .....	2.00	2.00	2.00	2.00	2.00			
Solvent Extracted Cottonseed Meal .....	1.00							
Soybean Pellets .....		1.00				1.00	1.00	1.00
Old process Cottonseed Meal .....			1.00					
Dehydrated Red Clover Pellets .....				2.95				
Dehydrated Alfalfa Pellets.. ..					2.50			
Silage .....	20.00	20.00	19.95	18.74	19.93	20.00	20.00	19.93
Prairie Hay .....	2.63	2.56	2.54	.59	.78	3.06	3.16	3.22
Salt .....	.08	.07	.06	.07	.06	.05	.04	.05
5. Average initial weight .....	418	417	417	418	417	418	420	417
6. Average final weight .....	609	608	602	562	587	576	590	583
7. Average gain .....	191	191	185	144	170	158	170	166
8. Average daily gain .....	1.32	1.32	1.28	.99	1.17	1.09	1.17	1.14

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**PHASE I—WINTERING (Continued)**

Lot number .....	1	2	3	4	5	6	7	8
9. Feed required for 100 pounds gain, lbs.:								
Corn .....	151.83	151.83	156.76	201.39	170.59			
Solvent extracted Cottonseed Meal .....	75.92							
Soybean Pellets .....		75.92				91.77	85.29	87.35
Old process Cottonseed Meal .....			78.38					
Dehydrated Red Clover Pellets .....				297.22				
Dehydrated Alfalfa Pellets.. ..					212.94			
Silage .....	1518.32	1518.32	1563.51	1887.15	1700.00	1835.44	1705.88	1740.96
Prairie Hay .....	199.97	194.43	198.92	59.38	66.71	280.90	269.64	281.19
Salt .....	5.78	5.57	4.92	7.29	4.82	4.80	3.63	4.57
10. Cost of feed for 100 pounds gain .....	\$ 12.42	\$ 12.39	\$ 12.76	\$ 19.87	\$ 16.10	\$ 11.17	\$ 10.43	\$ 10.70
11. Feed cost per heifer .....	\$ 23.73	\$ 23.66	\$ 23.61	\$ 28.62	\$ 27.36	\$ 17.65	\$ 17.73	\$ 17.77
12. Initial cost of heifers at \$23.50 per cwt. ....	\$ 98.23	\$ 98.00	\$ 98.00	\$ 98.23	\$ 98.00	\$ 98.23	\$ 98.70	\$ 98.00
13. Heifer cost plus feed cost ....	\$121.96	\$121.66	\$121.61	\$126.85	\$125.36	\$115.88	\$116.43	\$115.77
14. Necessary selling price per cwt. to pay for feed and initial cost .....	\$ 20.03	\$ 20.01	\$ 20.20	\$ 22.57	\$ 21.36	\$ 20.12	\$ 19.73	\$ 19.86
15. Appraised value per cwt. May 5, 1950 .....								

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Feed Prices: Ground shelled corn, \$1.25 per bushel; Solvent extracted cottonseed meal, Soybean Pellets, old process Cottonseed Meal, \$75.00 per ton; Dehydrated Red Clover Pellets, Dehydrated Alfalfa Pellets, \$6.00 per ton; Silage, \$6.50 per ton; Prairie Hay, \$13.00 per ton; Salt, \$12.00 per ton.