

## Self-feeding Lambs on Wheat Pasture

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During years of adequate rainfall, thousands of lambs are fattened on wheat pasture in Oklahoma and adjoining areas. Lambs grazing wheat pasture make excellent gains at much lower cost per unit of gain than can be obtained in the feed lot.

Previous tests at the Ft. Reno Station have shown that wheat pasture on fertile soil will carry five lambs per acre. In the fall of 1960 (M.P. 64), 10 lambs were carried per acre of wheat by self-feeding the lambs on pasture after they reached 75 lbs. This year's study tests the feasibility of self-feeding high energy rations to lamb grazing wheat.

### Procedure

Four hundred feeder lambs were used in this study. Three hundred of these lambs were purchased in Southwest Texas. They were sheared at San Angelo prior to shipment. The remaining 100 lambs were native feeder lambs purchased on the Oklahoma City livestock market. These lambs were not sheared. Just prior to starting the first 300 lambs on pasture, the lambs were divided into three weight groups and each weight group was divided into two lots as follows: Five acres of pasture per lot; 10 lambs per acre)

Light lambs—62 lbs. and below.

Lot 1. Self-fed a ground mixture of 45 percent milo, 5 percent molasses, and 50 percent alfalfa hay. (Control ration).

Lot 2. Self-fed a mixture of 69.5 percent steam rolled barley, 12.5 percent alfalfa hay, 7 percent S.B.O.M., 5 percent cottonseed hulls, 5 percent molasses, and .5 percent salt

Medium weight lambs—63-72 lbs., inclusive.

Lot 3. Self-fed the same ration as the lambs of Lot 1. (Control ration).

Lot 4. Self-fed steam rolled barley.

Heavy weight lambs—73 lbs. and up.

Lot 5. Self-fed the same ration as the lambs of Lots 1 and 3 (Control ration).

Lot 6. Self-fed steam rolled barley.

The lambs of the first six lots were started on wheat pasture on October 25. The lambs grazed the wheat from about 8:00 a.m. to 5:00 p.m. They were penned in a dog-proof lot at night. The lambs were self-fed in the night lot. The heavy lambs were started on the self-feeders immediately, the light and medium weight lambs as the group averaged 75 lbs.

The Lot 5 and 6 lambs were sold on December 20 and January 9, respectively. The pasture used for grazing these lambs was restocked with 50 lambs each. (Lots 7 and 8)

Second group of heavy lambs.

Lot 7. Self-fed the same ration as the lambs of Lots 1, 3, and 5. (Control ration).

Lot 8. Self-fed a mixture of 80 percent steam rolled barley, 12.5 percent ground alfalfa hay, 2 percent S.B.O.M., 5 percent molasses, and .5 percent salt.

The composition of all rations is shown in Table 1.

Table 1.—Composition of Rations.

	Control Lots 1, 3, 5, 7	Lot 2	Lots 4 & 6 (Percent)	Lot 8
<b>Ingredients</b>				
Ground milo	45.0			
Steam rolled milo		69.5	100.0	
Steam rolled barley				80.0
Molasses	5.0	5.0		5.0
Soybean oil meal		7.0		2.0
Ground Alfalfa hay	50.0	12.5		12.5
Cottonseed hulls		5.5		
Salt <sup>1</sup>		.5		.5
Aurofax <sup>2</sup>				
Total	100.0	100.0	100.0	100.0
<b>Proximate Composition<sup>3</sup></b>				
Dry matter	89.42	88.22	90.92	88.3
Crude protein	11.70	11.43	9.59	11.6
Fiber	15.34	8.07	1.71	8.02
T.D.N.	63.77	72.11	76.00	72.76
Calcium	.78	.26	.07	.27
Phosphorus	.25	.27	.29	.37
Carotene (mg./lb. ration)	4.14	1.11	1.10	1.19

<sup>1</sup> 10 lbs. of salt added per ton of feed for Lots 1, 3, 5, 7.

<sup>2</sup> 2 lbs. of Aurofax 10 added per ton in all mixed rations; for Lots 4 and 6, 3 lbs. of Aurofax 10 per 37 lbs. of salt, fed free choice.

<sup>3</sup> Based on chemical analyses and T.D.N. is calculated by chemical analysis times digestion coefficients given by Morrison in *Feeds and Feeding*. 22nd edition.

Individual weights following an overnight period without access to feed and water were taken at the beginning and at the end of the trial. Intermediate weights without shrinking were taken at approximately 30 day intervals.

Average weight gain, feed consumed, market data, and financial results are shown in Table 2.

Table 2.—Weight Gains, Rations Fed, and Financial Results Obtained with Feeder Lambs Self-fed on Wheat Pasture.

Weight group	Light Lambs (62 lbs. and below) Started on self-feeder at 75 lbs.		Medium Wt. Lambs (65-72 lbs.) Stained on self-feeder at 75 lbs.		Heavy Lambs (75 lbs. and up) Started on self- feeder immediately		Second Group Heavy lambs Started on self- feeder immediately	
Lot Number	1	2	3	4	5	6	7	8
Acres of pasture	5	5	5	5	5	5	5 <sup>1</sup>	5 <sup>1</sup>
No. lambs/lot	50 <sup>2</sup>	50 <sup>2</sup>	50 <sup>2</sup>	50 <sup>2</sup>	50 <sup>2</sup>	50 <sup>2</sup>	50 <sup>2</sup>	50 <sup>2</sup>
Initial weight	56.8	56.4	65.9	65.1	74.9	74.0	74.6	76.3
Wt. when start- ed on self-feeder	75.1	75.1	76.1	75.5	74.9	74.0	74.6	76.3
Days on self-feeder	64	64	74	74	55	74	52	54
Total feed per lamb	163.0	186.0	248.0	169.0	152.0	131.0	142.0	110.0
Avg. daily gain								
Wheat pasture alone	.26	.25	.30	.31	--	--	--	--
During self- feeding period	.34	.39	.40	.37	.43	.29	.49	.54
Financial results								
Date sold	3/12	3/12	2/13	2/13	12/20	1/9	2/13	3/5
Avg. selling price	15.25	15.25	15.00	15.20	15.00	14.50	15.75	15.75
Total value per lamb <sup>3</sup>	16.06	16.63	17.0	16.83	15.97	15.03	15.75	16.57
Initial cost per lamb <sup>4</sup>	8.34	8.29	9.69	9.57	11.01	10.88	10.07	10.30
Feed cost per lamb								
Ration self-fed <sup>5</sup>	3.18	4.28	4.83	3.89	2.96	3.01	2.77	2.75
Alfalfa hay <sup>6</sup>	.60	.60	.60	.60	.60	.60	--	--
Misc. cost <sup>7</sup>	1.78	2.92	3.58	6.23	1.21	1.07	1.49	1.06
Profit or loss	+2.16	+ .54	-1.68	-3.46	+ .19	- .53	+ .92	+2.46

<sup>1</sup> The lambs of Lots 7 and 8 grazed the same pasture as the lambs of Lots 5 and 6 respectively; after the Lot 5 and 6 lambs were sold.

<sup>2</sup> Death loss. Five lambs died in Lot 1, 10 in Lot 2, 11 in Lot 3, 18 in Lot 4, 2 in Lot 5, 1 in Lot 6, 3 in Lot 7, and 1 in Lot 8. Most of the death loss was due to enterotoxemia. The feed consumed by these lambs was charged to their lot.

<sup>3</sup> Includes wool return \$1.18 per lamb for Lots 1 through 6.

<sup>4</sup> \$13 F.O.B. Barnhart, Texas for the lambs of Lots 1 through 6. \$14.70 per cwt. delivered; delivered price on lambs of Lot 7 and 8 purchased at Oklahoma City, \$13.95 per cwt.

<sup>5</sup> Cost of ration per ton: Lots 1, 3, 5, and 7, \$39; Lot 2, \$46; Lot 4 and 6, \$46; Lot 8, \$50. Included is cost of grinding, 15¢ per cwt., and mixing, 15¢ per cwt.

<sup>6</sup> Alfalfa hay was fed during inclement weather.

<sup>7</sup> Includes 60¢ per lamb for marketing, 25¢ per head for transportation to market, and the remainder for death loss.

## Results

The average daily gains of the lambs of the first six lots were the lowest experienced in self-feeding lambs on wheat at the Ft. Reno Station. The death loss (approximately 12 percent) for these lots was also the highest recorded in fattening lambs at the station. The low rate of gain can be partly attributed to the severe winter. The high death loss was probably due to both the severe cold weather and the high energy rations being tested. The death loss was considerably lower in the lambs fed the control ration.

The average daily gain and feed efficiency of the lambs of Lots 7 and 8 were considerably better than those of the first six groups. Also, the death loss was quite low in both groups. These lambs were started on pasture after the Lot 5 and 6 lambs were sold and the weather was considerably warmer. The performance of the Lot 8 lambs on the high energy ration was quite satisfactory. They required less feed and gained more rapidly than Lot 7 lambs. However, considering the overall death loss of the lambs on the high energy rations, it would appear that they may be unsafe to self-feed to lambs grazing wheat.

Although 400 lambs were carried on 30 acres of wheat, the overall return was quite small due to the high death loss and low margin.

## Effect of Winter Plane of Nutrition on the Performance of Three- and Four-Year-Old Beef Cows

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Due to the low nutrient value of forage during the period from November to the following April, at a time in which the beef cow is developing a fetus or nursing her calf, it is obvious that the wintering period is the most critical time in the nutrition of the beef female. The proper amount of winter supplement to feed is of great economic importance, not only because of its cost, but also in terms of its effect on overall reproductive performance.

In addition to seven other experiments, either completed or now in progress, two additional trials were recently initiated to determine the effects of four widely different wintering regimes upon growth, milk