

Wheat Pasture Studies With Western Feeder Lambs

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

Recent work at the Ft. Reno Station indicates that during most years lambs grazing wheat pasture will return as sizeable profit, but perhaps the most important aspect in the utilization of wheat pasture or other fall and winter pastures is not the profit per animal unit but how much return can be expected per acre of pasture.

Previous Work

Previous work at the Ft. Reno Station (M.P. 34, 45, 51, and 55) indicates that a net gain of approximately 170 pounds per acre can be expected over a 90-day grazing period with a stocking rate of 5 lambs per acre. With 10 lambs per acre, a net gain of over 300 pounds per acre for approximately 90 days was noted in 1959 (M.P. 55). With a break even or positive margin, a return of \$25 to \$35 per acre could be expected by grazing the wheat pasture with lambs for approximately 3 months.

In 1959, (M.P. 55) self-feeding on wheat pasture increased gains and carrying capacity, but this method was not profitable for this particular year due to negative margin of seven cents per pound.

Feeding one-half to one pound of milo per lamb daily during the entire season has increased gains slightly and improved carcass grade and yield. However, in only one year out of four have the supplemented lambs returned more profit than those receiving only wheat pasture. The increase gains have not been enough to offset the additional cost of feed unless the supplemented lambs are sold for \$1.00 to \$1.50 more cwt.

Procedure

Two hundred fifty western wether feeder lambs were used in this study. The lambs were produced in the range area of New Mexico. They were sheared at Roswell prior to shipment via truck and were received at the Ft. Reno Station November 7. The lambs were fed prairie hay on November 7, 8, and 9. During this 3-day period, the lambs were allotted to groups by taking a gate cut of 5 lambs per time. The lambs were not vaccinated for enterotoxemia. They were started on wheat pasture November 11.

The treatments used were as follows:

- Lot 1. Wheat pasture, 5 lambs per acre; no supplemental feed in the first 78 days, then self fed on pasture a mixture of 45 percent ground milo, 5 percent molasses, and 50 percent ground alfalfa hay the last 40 days.
- Lot 2. Wheat pasture, 5 lambs per acre; one pound of milo per lamb daily during the entire grazing season.
- Lot 3. Same as Lot 1, except 10 lambs per acre.
- Lot 4. Same as Lot 2, except 10 lambs per acre.
- Lot 5. Wheat pasture, 10 lambs per acre; self-fed a dehydrated sorghum pellet¹, the entire period.
- Lot 6. Wheat pasture, 10 lambs per acre; self-fed a mixture of 45 percent ground milo, 5 percent molasses, and 50 percent alfalfa hay the entire period.

Soluble aureomycin was used in the drinking water for the first week. After this period, aureomycin in salt (3 pounds of Aurofax 10 to 37 pounds of salt) was available to the lambs of all lots. All lambs were implanted in the ear with a 3 mg. stilbestrol implant. One-fourth of the lambs of each lot were drenched with phenothiazine, one-fourth with ruelene (75 mgs/kg. body weight) one-fourth with ruelene (125 mgs/kg. of body weight) and the remaining one-fourth were not drenched.

The lambs grazed the wheat pasture from about 8 a.m. to 5 p.m. They were all penned in a dog proof lot at night. The supplemental feed was available at this time. During snow storms, the lambs remained in dry-lot during the day. Those not receiving supplemental feed were fed alfalfa hay during these periods. The cost of the alfalfa hay was charged to the lot in figuring feed costs.

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

Market data included shrinkage and selling price. Unfortunately, carcass grades and yields could not be obtained. Average weight gains, feed consumed, and market data are shown in Table 1.

Observations

The wheat pasture was excellent at the beginning of the trial, but due to inclement weather, little growth occurred after January 1. During the first 78 days of trial (until January 26), the average daily gains were .29, .39, .26, .36, .50, and .54 for Lots 1, 2, 3, 4, 5, and 6, respectively.

¹ The dehydrated sorghum pellets purchased from Schoeb Feed Lot, Cherokee, Oklahoma.

Table 1.—Weight Gains, Rations Fed, and Financial Results Obtained with Fattening Lambs on Wheat Pasture.

Lot No.	1	2	3	4	5	6
Treatment	5 lamb/ acre no supplemental feed first 78 day. Self-fed last 40 days ¹	5 lamb/acre 1 lb. milo lamb/daily	Same as Lot 1 except 10 lamb/acre	Same as Lot 2 except 10 lamb/acre self-fed last 15 days ¹	10 lamb/acre self-fed Sorghum pellet entire period	10 lamb/acre self-fed standard mixture ¹ entire period
Acre of pasture	5	5	5	5	5	5
No. of lambs/lot	25	25	50	50	50	50
No. days on feed	118	105	118	118	84	84
Initial weight	61.6	62.8	62.8	64.8	61.9	64.9
Final weight	100.1	99.1	103.2	100.7	97.0	104.0
Av. daily gain	.33	.35	.34	.30	.42	.47
Feed consumed daily						
Milo		1.00		1.00		
Mixture (for period fed)	3.1		3.8	4.00	1.7	2.2
Financial Results						
Date sold	3/8	2/23	3/8	3/8	2/2	2/2
Av. selling price cwt. (\$)	19.00	18.00	19.15	19.00	17.00	17.00
Av. purchase price						
Del. ² (\$)	18.87	18.87	18.87	18.87	18.87	18.87
Total value based on actual mkt. wt. (\$)	18.32	17.35	18.98	18.62	15.98	17.17
Initial cost per lamb	11.62	11.85	11.85	12.23	11.68	12.17
Supplemental feed cost per lamb ³	2.46	1.83	2.90	3.30	2.92	3.50
Misc. cost ⁴	.75	.75	.75	.75	.75	.75
Profit per lamb (\$)	3.49	2.92	3.48	2.34	.63	.75
Shrinkage to Market %	4.6	2.7	3.9	2.7	3.1	2.9

¹ Mixture of 45% ground milo, 5% molasses, 50% ground alfalfa hay.

² \$17.45 f.o.b. Roswell, \$18.87 cwt. delivered, includes cost of transportation, shearing, commission, shrinkage and miscellaneous expenses minus wool return 4.5# wool x 38.5 per lb.)

³ Does not include any charge for wheat pasture; mixed ration 37.50 per ton; dehydrated sorghum pellet \$40 per ton. Milo \$35 per ton, alfalfa hay, \$25 per ton, molasses, \$60 per ton, \$3 per ton for mixing, \$3 for grinding.

⁴ Includes 50¢ per lamb for marketing cost and 25¢ per head for transportation to market.

During this period, feeding one pound of milo per lamb daily (Lot 1 vs. Lot 2 and Lot 3 vs. Lot 4), with either 5 or 10 lambs per acre, increased gains by .10 pound per day. Self feeding, (Lots 5 and 6) increased gains by about .25 pounds per day. At the end of this period, the condition of the pastures were as follows: Lot 1—fair, some grazing; Lot 2—good, plenty of pasture available to finish lambs; Lot 3—poor, little pasture available; Lot 4—poor, little pasture available; Lot 5—fair, plenty of pasture to finish lambs; and Lot 6—fair, also plenty of pasture to finish lambs. As indicated by the condition of the pastures, a stocking rate of 10 lambs per acre without supplemental feed or even with 1 pound of milo daily was too heavy for this past fall and winter. At the end of this 78-day period, the lambs of Lot 1 and Lot 3 were started on a self-feeder using the standard mixture (45 percent ground milo, 5 percent molasses and 50 percent alfalfa hay). It was not intended to self-feed Lot 4, but the pasture was so poor the last 15 days that it became necessary to self-feed in order to get the lambs to market finish.

During the last phase (40 days), in which the lambs of Lot 1 and Lot 3 were self-fed, the gains were excellent, and the total average daily gains (Table 1) were about the same as for Lots 2 and 4.

The gains of the lambs self-fed on pasture (Lots 5 and 6) were very satisfactory. The performance of the lambs on the mixed ration was slightly superior to those on the dehydrated sorghum pellets. It appears that this would be a desirable method of handling heavy lambs since they must be pushed to obtain market finish in a short period. Although these lambs were ready for market in 84 days, they returned less profit than the other four lots due to the lower selling price. It is interesting to note the difference in selling price according to date sold as indicated in Table 1. This trend in lamb prices has occurred in about 15 of the last 20 years.

It also appears that a desirable method of handling light and medium weight lambs is to use no supplemental feed for the first 60 to 80 days, then self-feed the lambs on pasture to attain market finish. This defers the marketing until a later date and, as a general rule, the price is higher.

The return per acre of pasture grazed for Lot 1 based on a profit of \$3.49 per lamb was \$17.50. For Lot 3, with 10 lambs per acre and a profit of \$3.50 per lamb, the return per acre of wheat pasture during the 118 days trial was approximately \$35 per acre. Again, the large differential in returns between the first 4 lots and Lot 5 and Lot 6 was due primarily to the difference in selling price. It also appears that by self-feeding the last 1/3 of the period, 10 lambs per acre can be carried with almost the same gains as 5 lambs per acre. One pound of milo with 5 lambs per acre was sufficient feed to finish the lambs for market. However, one pound of milo was not sufficient with 10 lambs per acre.

The death loss was very low. Only five lambs were lost the entire period. It is felt that aureomycin either in the salt or feed is as effective against enterotoxemia as vaccination.

Drenching lambs, either with phenothiazine or ruelene had no effect on rate of gain. Apparently, these lambs at this time of year were relatively free of internal parasites.

Effect of Different Amounts of Winter Supplement On the Performance of Spring-Calving Beef Cows

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Studies have been underway at this station since 1948 to determine the effects of low, medium, and high levels of supplemental winter feed on beef cows grazing native grass pasture year-long. The necessity of determining the proper amount of winter supplement is of practical economic importance as it is often the biggest cash out-lay in the cow-calf enterprise.

Effects of different levels of winter feeding can be determined only by such items as percent calf crop, regularity of reproduction, longevity, time of conception, and weaning weight of the calf. These items require long-term studies to accurately evaluate the effects of different winter feed levels.

To investigate the problem with beef cows under practical conditions, a long-term study was established at this station in the fall of 1948 with weanling heifer calves. Results of the eleventh consecutive year of this study at Ft. Reno are reported herein. The results of 1948 to 1959 are summarized.¹ Also, 1958 data from another herd at a different location, Lake Blackwell, are included.

Procedure

In October, 1948, 120 grade, weanling heifer calves were started on test. Ninety of the calves were divided as equally as possible into three groups and fed three levels of supplement during the winter while grazing weathered, native grass pasture. These supplements were (per head daily): low (1.0 pound cottonseed meal pellets), medium (2.5 pounds cottonseed meal pellets), and high (2.5 pounds cottonseed meal pellets plus 3.0 pounds oats). The low level of supplement plus the nutrients obtained from the grass was believed to furnish only 60 to 70 percent of the protein required by beef females, whereas the high level was believed to be excessive in both protein and energy.

The remaining 30 females were wintered at the medium level and used to study the effects of summer feeding in an attempt to improve calf weaning weights. The effect of two- vs. three-year-old calving within

¹ Detailed data obtained in previous trials can be found in Okla. Agr. Exp. Sta. Misc. Pub. MP-19, 22, 27, 31, 34, 43, 45, 48, 51, & 55 for years 1949 to 1959, inclusive.