

High Concentrate Ration for Fattening Feeder Lambs; The Effect of Sex or Sex Condition and Initial Weight on Gain and Feed Efficiency

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Considerable interest has been shown in recent years in the use of high concentrate rations for fattening cattle and lambs. This study is in part a continuation of last year's study of high concentrate rations (containing approx. 83% concentrates) as compared to a standard fattening ration for lambs (containing approximately 50% concentrates). The base grain used in this year's study was milo.

Also since there is considerable variation in the initial weight of lambs and since feeder lambs can be purchased either as wethers, ewe lambs, or a mixture of the two, this year's work also studied the effect of initial weight and sex or sex condition on rate of gain and feed efficiency with feeder lambs.

Procedure

One hundred and seventy-four grade Western feeder lambs were used in this study. The lambs were purchased at Roswell, New Mexico. The lambs were shorn prior to shipment by truck to the Ft. Reno Station. After arrival (November 6) at the station, the lambs were grazed on Bermuda grass pasture until the start of the experiment on December 4. During this preliminary period the lambs were drenched with penothiazine, implanted with 3 mgs of stilbestrol, and weighed.

The wether lambs were divided into three weight groups, those weighing from 60-70, 70-80, and 80 and above. The ewe lambs were divided into two weight groups; those weighing 60-70, and 70-80 pounds. Sufficient numbers of wethers were available to divide each weight group into two lots except the heavy wether. The average initial weight of each lots was as follows:

Wethers			
Lot 1	64.8	Lot 2	64.6
Lot 3	74.2	Lot 4	74.5
Lot 5	84.0		
Ewes			
Lot 6	63.8	Lot 7	64.9
Lot 8	73.6	Lot 9	73.1

The lambs of the odd numbered lots were fed the high concentrate ration which contained approximately 72% TDN and only 8% fiber. The lambs of the even numbered lots were fed the standard ration which contained approximately 64% TDN and 16% fiber. Both rations were approximately equal in protein and mineral content. The composition of the ration is shown in Table 1.

Table 1.—Composition of Rations (percent)

Lot Number	Standard 2,4,6,8	High Concentrate 1,3,5,7,9
Ingredient		
Ground milo	45.0	70.0
Alfalfa hay	50.0	12.5
Molasses	5.0	5.0
Soybean Oil meal	—	7.0
Cottonseed hulls	—	5.5
Salt & Aurofax ¹	—	—
Total	100.0	100.0
Proximate Composition²		
Dry matter	89.42	88.22
Crude protein	11.70	11.43
Fiber	15.34	8.07
TDN	63.77	72.11
Calcium	.78	.45
Phosphorus	.25	.28

¹ 10 pounds of salt and 2 pounds Aurofax 10 added per ton to both rations; 10 pound CaCo₃ added to high concentrate ration.

² Based on chemical analysis and T.D.N. calculated on basis of chemical analysis plus digestion coefficients given by Morrison in "Feeds and Feeding," 22nd edition.

The lambs were started on feed on December 4. They were hand fed for the first five days, after this period the lambs were turned loose on self-feeders.

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

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

Observations

High Concentrate vs. Standard Ration

1. The wether lambs in each weight group fed the high concentrate ration gained more rapidly and required less feed per cwt. than the lambs on the standard ration. With the wether lambs, the feed required per cwt. gain was less than 700 pounds.

2. The ewe lambs varied in their response to the two rations. In one weight group, the ewe lambs fed the high concentrate ration gained more rapidly on less feed, in the other weight group the reverse occurred.

Table 2.—Weight Gains, Rations Fed, and Financial Results Obtained with Fattening Lambs in Dry Lot

Treatment	High ¹ Concen- trate Ration	Standard Ration	High ² Concen- trate Ration	Standard ³ Ration	High ⁴ Concen- trate Ration
WETHERS					
Lot number	1	2	3	4	5
No. lambs per lot	17 ⁵	17	26	26	29
Initial weight 12/4/62	64.8	64.6	74.2	74.5	84.0
Days on feed	76.0	92.0	60.0	60.0	42.0
Ave. daily gain	.47	.39	.46	.41	.59
Ave. daily feed intake	3.16	2.90	3.17	3.79	3.90
Lbs. feed/lb. gain	6.8	7.5	6.9	9.3	6.55
Feed costs/lb. gain \$	16.3	15.0	16.6	18.6	15.7
Financial results \$					
Ave. purchase price del. ⁴	17.6	17.6	17.6	17.6	17.6
Ave. selling price	17.5	17.5	17.5	17.5	17.5
Total value/lamb	17.60	17.60	17.80	17.30	19.00
Initial cost/lamb	11.40	11.40	13.10	13.10	14.80
Feed cost/lamb ⁵	5.80	5.32	4.60	4.60	3.90
Misc. cost/lamb ⁶	1.00	1.00	1.00	1.00	1.00
Net profit or loss/lamb	— .60	— .12	— .90	— 1.40	— .70
EWE LAMBS					
Lot Number	7	6	9	8	
No. lambs per lot	16	16	13	14	
Initial weight 12/4/62	64.9	63.8	73.1	73.6	
Days on feed	92	92	60	60	
Av. daily gain	.45	.40	.43	.52	
Ave. daily feed intake	3.10	3.20	4.1	4.42	
Lbs. feed/lb. of gain	7.60	8.0	9.5	8.4	
Feed cost/lb. of gain \$	18.2	16.0	22.80	16.8	
Financial results \$					
Ave. purchase price del. ⁴	17.6	17.6	17.6	17.6	
Ave. selling price	17.5	17.5	17.5	17.5	
Total value/lamb	18.60	17.61	17.31	18.34	
Initial cost/lamb	11.42	11.23	12.87	12.95	
Feed cost/lamb ⁵	6.79	5.87	5.94	5.31	
Misc. cost/lamb ⁶	1.00	1.00	1.00	1.00	
Net profit or loss/lamb	— .61	— .49	— 2.50	— .92	

¹ High concentrate ration — 70% ground milo, 12.5% ground Alfalfa hay, 7% soybean oil meal, 5% cottonseed hulls, 5% molasses, plus 10 lbs. salt and 2 lbs. Aurolax 10 per ton (see Table 1).

² Standard ration—45% ground milo, 5% molasses, 50% ground alfalfa hay, plus 10 lbs. salt, 10 lbs. CaCO₃, and 2 lbs. Aurolax 10 per ton.

³ One lamb died, Lot 1. Reason Unknown.

⁴ \$16.25 per cwt. F.O.B. Roswell, New Mexico. \$17.60 per cwt. delivered, includes cost of transportation, commission and misc. costs; allows \$1.30 net credit on wool.

⁵ Cost of ration per ton: High concentrate \$48, Standard Ration \$40, includes \$5 per ton for grinding and mixing both rations.

⁶ Includes 65¢ per lamb for marketing, 25¢ per head for transportation to market, and 10¢ per head for drenching.

3. Within weight groups and ration groups, wether lambs did not consistently gain more rapidly than ewe lambs; however, in three cases out of four they required less feed per cwt. gain.

4. Considering gain based on body weight, there was little difference in average daily gain of the three weight groups. The heavier lambs gained considerably faster, but difference was due mostly to greater body size.

5. The death loss in this trial was extremely low—only one lamb died.

6. This study would again indicate that a positive margin is necessary to return a net profit with lambs fed in dry-lot even with excellent gains and feed efficiency.

The Reproductive Performance of Hereford Heifers on Different Levels of Winter Feeding and Summer Grazing

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The common practice of restricting the breeding of beef cow herds to a single limited season each year forces the producer to make the decision as to whether to breed heifers first as yearlings or as two-year olds. Several important factors must be considered in arriving at this decision: the size and condition of the yearling heifers; the level of winter feeding that will, or must, be provided; the amount of gain they can be expected to make during their yearling summer grazing season; and, probably most important, the amount of attention that can be given to the heifers during their first calving season.

The results of previous studies at Ft. Reno have indicated that if a beef heifer is sufficiently well developed she may calve first at two-years of age, and her later reproductive performance, mature size, and life span will not be adversely affected. It is true that two-year-old heifers may have a lower calf crop percentage and wean lighter weight calves than do older heifers. However, their performance at older ages is equal to that of heifers calving first at three-years of age, and, because