

## High Energy Rations for Fattening Feeder Lambs

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Although we have known for many years that sheep can adequately utilize large amounts of roughage, many people still believe that only a small amount should be used in a fattening ration for optimum gains and finish. Opinions vary as to the proportion of concentrates-to-roughage a fattening ration should contain in order to obtain maximum performance in the feedlot.

In determining what concentrate:roughage ratio we should feed to drylot lambs, we should consider rate of gain; feed consumption; feed efficiency; carcass merit; and economic aspects, which might include cost of the various feeds fed, cost of preparing the feed, and death losses.

Farmers and ranchers who feed lambs in drylot usually raise a good part of their feed. Under the circumstances where a feeder raises a lot of grain and very little or no hay, it may be cheaper for him to feed a high grain ration rather than the normal 50 percent concentrate and 50 percent roughage ration.

### Procedure

On October 2, 1961, 163 head of Western range feeder lambs were purchased from Southwest Texas. The lambs were grazed at Fort Reno on wheat pasture until November 1, at which time they were divided into five groups of equal weight. The average weight of all lambs on November 1 was 59.51 lbs. A grain adjustment period of 14 days was used in starting the lambs on feed. During this two-week period, the lambs of each lot were fed a standard ration of 45 percent ground milo, 50 percent ground alfalfa hay, and 5 percent molasses with the addition of 10 lbs. of salt and 2 lbs. of Aurofac 10 added per ton of feed. The lambs were started on feed gradually and turned loose on self-feeders after the 5th day.

On November 14, 600 lbs. of each test ration was mixed with 600 lbs. of the control ration. After this mixture was consumed, the test rations were fed alone. The rations studied are shown in Table 1. The control or standard ration (Lot 1) contained approximately 11.7 percent crude protein, 63.8 percent T.D.N., and 15 percent crude fiber. The high energy ration (Lots 2, 3, 4, and 5) were balanced on the basis of crude protein, T.D.N., and crude fiber. These rations contained approximately 11.5 percent crude protein, 72.5 percent T.D.N., and 8 percent crude fiber. All rations contained adequate calcium, phosphorus, and carotene.

Table 1.—Composition of Rations Used in All Trials.

Lot Number	1	2	3	4	5
	Control				
			(Percent)		
<b>Ingredient</b>					
Ground milo	45.0	69.5			
Steam rolled milo			69.5		
Ground barley				80.0	
Steam rolled barley					80.0
Molasses	5.0	5.0	5.0	5.0	5.0
Soybean oil meal		7.0	7.0	2.0	2.0
Ground alfalfa hay	50.0	12.5	12.5	12.5	12.5
Cottonseed hulls		5.5	5.5		
Salt <sup>1</sup>		.5	.5	.5	.5
Aurofac <sup>2</sup>					
Total	100.0	100.0	100.0	100.0	100.0
<b>Proximate Composition<sup>3</sup></b>					
Dry matter	89.42	88.22	88.22	88.33	88.33
Crude protein	11.70	11.43	11.43	11.60	11.60
Fiber	15.34	8.07	8.07	8.02	8.02
TDN	63.77	72.11	72.11	72.76	72.76
Calcium	.782	.262	.262	.270	.270
Phosphorus	.250	.276	.276	.367	.367
Carotene (mg./lb. ration)	4.145	1.111	1.111	1.189	1.189

<sup>1</sup>10 lbs. salt added per ton of feed in Lot. 1.

<sup>2</sup>2 lbs. Aurofax 10 added per ton of feed in each lot.

<sup>3</sup>Based on chemical analysis and TDN is calculated on chemical analysis plus digestion coefficients given by Morrison in *Feeds and Feeding*, 22nd edition.

At the beginning of the trial, all lambs were drenched with phenothiazine and implanted with 3 mg. of stilbestrol. All lambs were self-fed throughout the test period and had access to fresh water at all times.

Individual weights were taken at the beginning and end of the trial following an overnight period without access to feed and water. Intermediate weights without shrinking the lambs were taken at approximately 30 day intervals. The lambs were weighed off the experiment and shipped to the Oklahoma City market as they reached 100 lbs.

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

## Results

The average daily gain of the lambs of all lots was essentially the same except for Lot 4. The poor response in Lot 4 was perhaps caused by the unpalatability of the ground barley. The lambs of Lot 4 consumed approximately 1 lb. less feed per head daily.

The overall response from steam rolled milo and steam rolled barley was essentially the same. The rate of gain was slightly higher in the steam rolled milo lot but feed efficiency was in favor of the steam rolled barley.

Table 2.—Weight Gains, Rations Fed, and Financial Results Obtained with Fattening Lambs Self-fed in Drylot.

Treatment:	45% gr. milo 50% ground alf. hay 5% molasses	69.5% gr. milo 12.5% gr. alf. hay 7% SBOM 5.5% CS Hulls 5% molasses .5% salt	Same as Lot 2 except milo was steam rolled	80% gr. barley 12.5% gr. alf. hay 2% SBOM 5% molasses .5% salt	Same as Lot 4 except barley was steam rolled
Lot Number:	1	2	3	4	5
No. lambs per lot	31	33 <sup>1</sup>	33 <sup>2</sup>	33 <sup>1</sup>	33 <sup>1</sup>
Avg. wt. when put on 2 week adj. period	60.54	59.64	59.54	58.72	59.12
Avg. wt. when put on test ration	67.83	65.91	66.30	66.63	65.91
Avg. no. days on feed	78	79	78	111	82
Final weight (lbs.)	102.91	100.14	101.73	101.41	101.15
Avg. Daily gain (from initial wt.)	.55	.51	.54	.38	.51
Avg. daily feed intake (lbs.)	3.54	3.81	3.60	2.59	3.24
Total feed/lamb (lbs.)	276	301	281	288	266
Lbs. feed/lb. gain	6.51	7.43	6.66	6.75	6.33
Feed cost/cwt. gain	12.70	17.16	15.38	16.87	15.82
Financial Results:					
Avg. purchase price, del. <sup>3</sup>	14.70	14.70	14.70	14.70	14.70
Avg. selling price	15.25	15.25	15.25	15.25	15.25
Total value/lamb <sup>3</sup>	16.15	15.84	16.07	16.03	15.99
Int. cost/lamb	8.90	8.77	8.75	8.63	8.69
Feed cost/lamb <sup>4</sup>	5.38	6.95	6.49	7.20	6.65
Misc. cost <sup>5</sup>	.85	1.81	1.34	1.34	1.81
Net profit or loss/lamb	+\$1.02	-1.69	-0.51	-1.14	-1.16

<sup>1</sup>Death loss. Two lambs died in Lot 2, one in Lot 3, one in Lot 4, and two in Lot 5.

<sup>2</sup>\$13 F.O.B. Barnhart, Texas, \$14.70 per cwt. delivered, includes cost of transportation, commission, and miscellaneous expenses.

<sup>3</sup>Deducts 4% shrinkage to market and includes wool return \$1.18 per lamb.

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

<sup>5</sup>Includes 60¢ per lamb for marketing, 25¢ per head for transportation, and death losses.

Feed Prices: Milo, \$2/cwt.; alf. hay \$25/ton; barley \$2.30/cwt.; SBOM \$4/cwt.; cottonseed hulls \$20/ton.

Steam rolling the milo as compared to grinding increased average daily gains slightly and increased feed efficiency considerably. Steam rolling the barley vs. the ground barley increased both rate of gain and feed efficiency. It would appear that high energy rations (72 percent T.D.N. and only 8 percent fiber) composed primarily of ground milo, steam rolled milo, or steam rolled barley can be successfully fed to fattening lambs. However, the standard ration containing approximately 50 percent concentrate and 50 percent roughage (63.8 T.D.N. and 15 percent crude fiber) gave better results. The feed cost per cwt. gain was considerably lower for this group of lambs.