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# AGRICULTURAL EXPERIMENT STATION

## KANSAS STATE AGRICULTURAL COLLEGE

DEPARTMENT OF ANIMAL HUSBANDRY



FAT LAMBS ON THEIR WAY TO MARKET

### LAMB FEEDING INVESTIGATIONS, 1919

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The feeding of lambs has never been practised very extensively in Kansas except by men who feed large bands. The demand and price, however, for mutton and mutton products have so increased during recent years that the feeding of lambs in carload lots has become a profitable side line on the general Kansas farm. This fact has prompted many inquiries for information regarding methods of feeding that will secure the most rapid and economical gains.

### SCOPE OF INVESTIGATIONS

In order that the Kansas Agricultural Experiment Station might have data applicable to Kansas conditions it has made some investigations of lamb feeding problems. The purposes of this year's investigations were :

1. To compare the efficiency and economy of linseed meal, cottonseed meal, and corn gluten feed as protein supplements when fed with shelled corn, alfalfa hay, and corn silage.
2. To determine the value of a concentrated protein supplement in a ration with shelled corn, alfalfa hay, and corn silage.
3. To compare the efficiency and economy of shelled corn and hominy feed when fed with alfalfa hay and corn silage.
4. To determine the value of adding corn silage to a ration of shelled corn and alfalfa hay.
5. To determine whether or not linseed meal can be used to replace corn entirely when alfalfa and corn silage are fed as roughage.

### FEEDING PLAN

On the Kansas City market 250 white-faced Idaho lambs were purchased at \$16 per hundredweight. They were shipped to Manhattan, February 26, 1919, and fed silage and corn fodder until March 9th. They were then divided into seven lots of 35 head each, care being taken to have each lot as uniform in conformation and weight as possible.

The lambs were weighed on three consecutive days and the average of the three weights used as the initial weight. They were weighed every 20 days and the final weight used in determining the results of the experiment was the actual selling weight on the Kansas City market.

The lambs were started on feed very slowly, at the rate of 6 pounds of grain, 2 pounds of protein supplement, 20 pounds of alfalfa hay, and 35 pounds of silage to each lot of 35 head. In the lots where no silage was used, 40 pounds of alfalfa hay was fed each day. The ration was gradually increased, care being taken to see that the feed was cleaned up at each feeding.

The silage was fed in the evening and the alfalfa hay in the morning. They were fed for a period of 49 days.

QUARTERS

The lambs were quartered in a shed open to the south which provided 280 square feet of shed space for each lot of 35 lambs.

The lot space outside the shed occupied by each group was 13 feet wide and 100 feet long. The lots had ample slope to give proper drainage which made the yard fairly dry at all times. The lambs were fed in combination racks and had access to fresh water and salt at all times.

RESULTS

The results are given in detail in Table I.

TABLE I.—RESULTS OF LAMB FEEDING INVESTIGATIONS, 1919  
(Feeding period, 49 days)

Lot No.	1	2	3	4	5	6	7
Number of lambs in lot	35	35	35	35	35	35	35
Daily ration per lamb:	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Shelled corn	1.24	1.24	1.24	1.24			1.24
Hominy feed					1.24		
Linseed meal	.16					1.14	
Cottonseed meal			.16				
Corn gluten feed		.16					
Alfalfa hay	1.04	1.04	1.04	1.04	1.08	1.16	2.14
Corn silage (a)	1.52	1.52	1.52	1.52	1.58	1.78	
Initial weight per lamb	64.56	65.40	66.08	65.23	65.62	65.21	65.23
Final weight per lamb	84.27	81.14	82.94	79.12	80.00	80.61	84.11
Total gain per lamb	19.71	15.74	16.86	13.89	14.38	15.40	18.88
Average daily gain per lamb	.40	.32	.34	.28	.29	.31	.38
Feed required to make 100 pounds of gain:							
Shelled corn	308.20	386.02	360.38	437.44			321.82
Hominy feed					422.53		
Linseed meal	39.77					362.73	
Cottonseed meal			46.50				
Corn gluten feed		49.81					
Alfalfa hay	258.55	323.77	302.25	366.88	368.01	369.09	555.40
Corn silage (a)	377.87	473.19	441.76	536.21	538.39	566.36	
Cost of feed per 100 pounds of gain	\$15.02	\$18.74	\$17.56	\$19.44	\$20.38	\$19.61	\$17.00
Initial cost per lamb at feed lot	10.57	10.71	10.82	10.68	10.73	10.67	10.63
Cost of feed per lamb	2.96	2.95	2.96	2.70	2.93	3.02	3.21
Cost of labor per lamb	.28	.28	.28	.28	.28	.28	.28
Interest per lamb on investment at 8 percent	.113	.115	.116	.114	.115	.114	.114
Interest per lamb on equipment at 6 percent	.12	.12	.12	.12	.12	.12	.12
Shipping and marketing expense per lamb	.43	.43	.43	.43	.43	.43	.43
Total cost per lamb at Kansas City	14.473	14.605	14.586	14.321	14.605	14.634	14.834
Selling price per cwt. at Kansas City	19.00	18.25	18.75	18.50	18.40	17.75	18.85
Selling price per lamb at Kansas City	16.01	14.81	15.55	14.66	14.72	14.31	15.85
Profit or loss per lamb	1.537	.205	.824	.316	.115	-.324	1.016

Feed prices: Shelled corn, \$1.50 per bushel; linseed meal, \$65 per ton; cottonseed meal, \$65 per ton; corn gluten feed, \$83 per ton; hominy feed, \$60 per ton; alfalfa hay, \$30 per ton; corn silage, \$8 per ton.

(a) Corn silage made in August from corn injured by hot winds.

### SUMMARY

The results of these investigations indicate:

1. That linseed meal is more efficient than corn gluten feed as a protein supplement for fattening lambs when fed with shelled corn, alfalfa hay, and corn silage.

2. That the addition of linseed meal or cottonseed meal as a protein supplement to a ration of shelled corn, alfalfa hay, and corn silage increased gains, reduced cost of 100 pounds gain, increased selling price per hundredweight and the ultimate profit. The addition of corn gluten feed as a protein supplement to a ration of shelled corn, alfalfa hay, and corn silage increased gains, reduced slightly the cost of a hundred pounds gain, but failed to produce the desired finish and made less profit than when no protein supplement was used.

3. That the substitution of hominy feed for shelled corn with alfalfa hay and silage increased slightly the gains, but increased the cost of gains. It also failed to produce the high finish that corn did, making the ultimate profit less.

4. That corn silage added to the ration of shelled corn and alfalfa hay did not prove profitable except when linseed meal as a protein supplement was fed with the silage, alfalfa hay, and corn. This combination gave the greatest profits.

5. That linseed meal substituted for corn and fed with alfalfa hay and corn silage produced slightly larger gains than when corn was fed with alfalfa hay and corn silage; but the linseed meal, alfalfa hay, and corn silage ration failed to produce the necessary finish, and the lambs sold for so much less per hundredweight that each lamb made a loss.