

OKLAHOMA
AGRICULTURAL AND MECHANICAL
COLLEGE

AGRICULTURAL EXPERIMENT STATION
STILLWATER, OKLAHOMA

BULLETIN No. 133

SEPTEMBER, 1920

SHEEP FEEDING INVESTIGATIONS

COMPARATIVE RATIONS FOR
FATTENING WETHER LAMBS

BY W. T. MAGEE AND A. E. DARLOW*

*This work was started by W. T. Magee who resigned before test was completed. The work was completed and data compiled ready for publication by A. E. Darlow who succeeded W. T. Magee in Charge of Sheep.

SHEEP FEEDING INVESTIGATIONS

INTRODUCTION

The lambs used in this experiment were bought on the Kansas City market and were average western lambs. When these lambs arrived they were turned on kafir stubble and kept there until experiment started.

Three weights were taken at the beginning of the test November 20, 21 and 22, in order to get a representative weight of the various lots.

The lambs were fed twice daily at 7:00 a. m. and 5:30 p. m. The rations were divided equally for night and morning feed. The combination hay and grain racks were used for feeding. These consisted of hay racks with tight grain troughs at bottom. Outside runs were provided for a limited amount of exercise, but this feeding was conducted under cover. The feeding experiment was started November 20 and closed February 23, making a feed period of 96 days.

The lambs were weighed 3 days in succession at the beginning and end of the experiment.

Rations Used

Lot I
Sudan hay
Darso silage
Cottonseed meal, light
Kafir heads (for last few days)

Lot III
Silage
Alfalfa hay
Kafir heads

Lot V
Alfalfa hay
Ground kafir

Lot II
Sudan hay
Darso silage
Cottonseed meal, heavy
Kafir heads (last few days)

Lot IV
Alfalfa hay
Darso silage
Shelled kafir

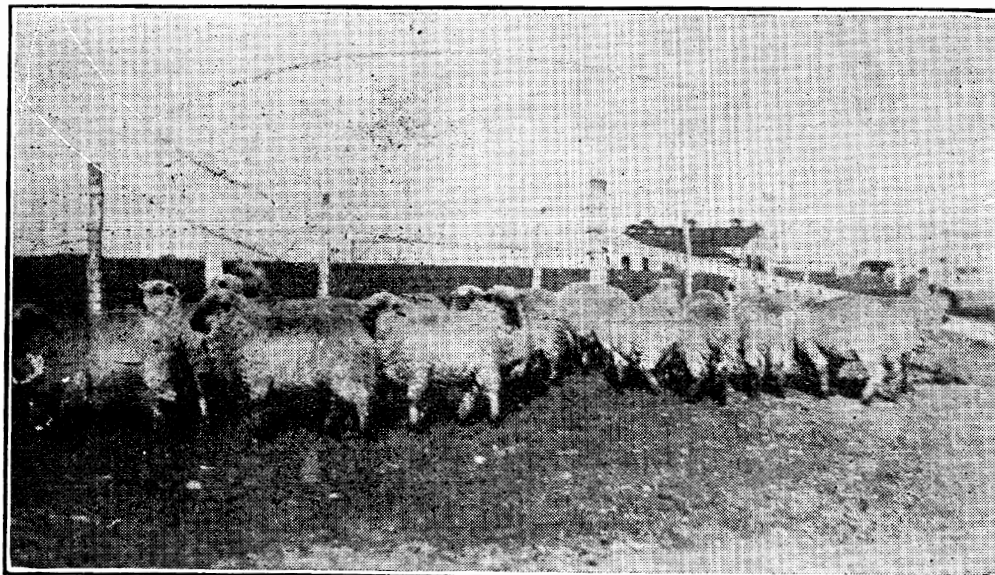


TABLE I

Lot number	I	II	III	IV	V
Number days on test...	96	96	96	96	96
Number in each lot....	21	22	22	22	21*
Avg. initial wt.	60.9 lbs.	58.18 lbs.	55.91 lbs.	56.27 lbs.	58.19 lbs.
Avg. final wt.	80.09 lbs.	78.63 lbs.	85.04 lbs.	88.27 lbs.	90.25 lbs.
Avg. daily gain per lamb at feed lot199 lb.	.213 lb.	.303 lb.	.333 lb.	.334 lb.

*One lamb died in Lot V Dec. 18, wt. 62 lbs.

Average Daily Ration per Lamb

Sudan hay	1.85 lbs.	1.77 lbs.			
Darso silage	2.30 lbs.	2.08 lbs.	2.19 lbs.	2.18 lbs.	
Cotton seed meal	.375 lb.	.55 lb.			
Kafir heads	1.2 lbs.	1.1 lbs.			
	(18 da.)	(18 da.)			
Shelled kafir			.84 lb.	.79 lb.	
Alfalfa hay			1.93 lbs.	1.96 lbs.	3.03 lbs.
Ground kafir					.91 lb.

Feed Required to Produce 100 Pounds Gain

Sudan hay	929.03 lbs.	831.58 lbs.			
Darso silage	1150.62 lbs.	976.22 lbs.	721.22 lbs.	653.12 lbs.	
Cotton seed meal	187.59 lbs.	258.22 lbs.			
Kafir heads			276.32 lbs.		
Alfalfa hay			637.53 lbs.	588.35 lbs.	997.60 lbs.
Shelled kafir				237.21 lbs.	
Ground kafir					300 lbs.

Lot number	I	II	III	IV	V
Cost of feed to produce 100 lbs. gain.	\$21.52	\$22.36	\$17.66	\$16.64	\$21.74
Avg. initial cost per lamb at feed lot.	8.73	8.35	8.03	8.08	8.14
Avg. labor cost per lamb.....	.40	.40	.40	.40	.40
Avg. feed cost per lamb.....	4.13	4.57	5.15	5.32	6.38
Int. per lamb on investment at 8 pct.	.283	.283	.283	.283	.283
Int. per lamb on equipment at 8 pct..	.267	.267	.267	.267	.267
Shipping and selling cost per lamb...	.777	.777	.777	.777	.777
Total cost per lamb at stock yards...	14.59	14.45	14.90	15.13	16.25
Selling price per lamb.....	14.87	14.59	15.78	16.38	16.75
Net profit per lamb	.26	.14	.78	1.25	.50
Necessary selling price to break even	18.21	18.38	17.52	17.14	18.05
Actual selling price*	18.56	18.56	18.56	18.56	18.56
Shrink per lamb	.185 lb	.185 lb	.185 lb	.185 lb	.185 lb
Total profit per lot	\$ 5.46	\$ 2.08	\$17.16	\$27.50	\$10.00

*These lambs were not sold by lots, but were all sold together.

Cost of Feeds

Alfalfa hay.....	\$27.00 per ton
Cottonseed meal.....	\$72.00 per ton
Darso silage.....	\$ 6.50 per ton
Sudan hay.....	\$18.00 per ton
Shelled kafir.....	\$ 1.55 per bu.
Kafir heads.....	\$ 1.75 per bu.

Conclusion

Comparing Lot I and Lot II.

Lot I received cotton seed meal light and Lot II received cotton seed meal heavy. To determine how long cotton seed meal can be fed in large quantities before poisonous effect becomes apparent.

TABLE II

Lot	No. Days on Test	Avg. Gain Per Lamb	Total Feed	Daily Ration Per Lamb	Total Cost	Cost Per Head Per Day	Adv. in Total Cost Feed Per Lot	
I	96	20 lb	S. hay	3744 lb	1.85 lb	\$ 87.26	.0433	\$12.36
			Darso silage	4637 lb	2.38 lb			
			C. S. M.	756 lb	.375 lb			
			Kafir heads	454 lb	1.2 lb			
II	96	20.45 lb	S. hay	3742 lb	1.83 lb	\$100.62	.0477	
			Darso silage	4393 lb	2.08 lb			
			C. S. M.	1162 lb	.55 lb			
			Kafir heads	454 lb	1.15 lb			
				(18 da.)				

It cost \$12.36 less to fatten Lot I, which received a limited amount of cotton seed meal, than it did to fatten Lot II, which received cotton seed meal in large quantities.

The difference in cost per head per day was .0044 in favor of Lot I. The difference in average daily gain per lamb was .0047 lb. in favor of Lot II.

Lot II gained more rapidly at the beginning of the fattening period than did Lot I. Lot II went off feed on about the 70th day. Lot I fed well to the last. No losses occurred.

Comparing Kafir Heads and Shelled Kafir

Lot III received darso silage, alfalfa hay and kafir heads. Lot IV received darso silage, alfalfa hay and shelled kafir.

Lot IV. Fattened on alfalfa hay, darso silage and shelled kafir.

Table Showing Results

Lot	No. Days on Test	Avg. Gain Per Lamb	Total Feed	Daily Ration Per Lamb	Total Cost of Feed	Cost Per 100 lb Gain	Total Profit Per Lot
III	96	29.13 lb	Darso silage 4633 lb Alfalfa hay 4093 lb Kafir heads 1774 lb	2.19 lb 1.93 lb .84 lb	\$113.42	\$17.66	\$17.16
IV	96	32 lb	Darso silage 4608 lb Alfalfa hay 4142 lb Shelled kafir 1670 lb	2.18 lb 1.96 lb .79 lb	\$117.19	\$16.64	\$27.50

It cost \$3.77 more for feed in Lot IV than it did in Lot III, but Lot IV gained 2.87 lbs. more per head than did Lot III. Lot IV gained 100 lbs. on \$16.64 worth of feed, while Lot III required \$17.66, a difference of \$1.04 in favor of Lot IV. Lot IV made a total profit of \$27.50, or \$10.34 more than Lot III.

Shelled kafir is better for fattening lambs than kafir heads, probably due to the crude fiber in kafir heads.

SUMMARY

(1) What is perhaps the most outstanding feature of the whole experiment is the value of silage in the fattening ration. It will be noticed in looking over the first table that both Lot III and Lot IV, receiving kafir heads and shelled kafir respectively, combined with darso silage and alfalfa hay, gave much better results. Lot III showed \$7.16 and Lot IV \$17.50 more profit than Lot V, which received ground kafir and alfalfa hay.

Silage has a decidedly cheapening effect when included in a fattening ration for lambs and should be given a place in such.

(2) The advisability of feeding cotton seed meal as a protein supplement for fattening lambs is rather doubtful. Cotton seed meal when fed in quantities of ½ lb. or more per head per day for a feeding period of 60 to 90 days is likely to give poor results, due to the poisoning effect. In inexperienced hands cotton seed meal is apt to prove dangerous when fed in excess and it is perhaps a better plan to obtain your protein from some other source.

(3) The lot receiving shelled kafir made a profit of \$10.34 more than the lot receiving kafir heads. The kafir heads add an amount of bulk that is unnecessary in fattening lambs. The feeding of kafir in the head is apparently a way of taking care of them, but the results of this feeding test do not show them as profitable as when fed whole.