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# Feeding range lambs

C. F. Curtiss  
*Iowa State College*

James W. Wilson  
*Iowa State College*

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## FEEDING RANGE LAMBS,

C. F. CURTISS.

JAMES W. WILSON.

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The territory west of the 100th meridian, known as the Range, is rapidly becoming the great breeding ground for cattle and sheep. Already this locality is producing about one-half of the total number of sheep in the United States. This is pre-eminently a grazing country and must largely remain so. The natural conditions will not permit of the production of sufficient corn and other grain to properly fatten the stock grown in the range territory. The finishing can only be done by the utilization of some of the surplus grain crops of the upper Mississippi valley states. These states have lately been reducing their stock production and increasing their grain crops. The seven states constituting the corn belt produced over one and a half billion bushels of corn and about 237 million bushels of oats in 1896; and Iowa alone produced nearly 322 million bushels of corn and 105 million of oats, according to the statistics of the United States Department of Agriculture. In addition to this there was a large surplus of both corn and oats left over from 1895, and there has not yet been a profitable cash market for this enormous product. In view of these conditions, the Iowa station deemed it of interest to determine what opportunities were offered for a profitable market in feeding some of this surplus grain to range lambs. This inquiry was doubly urgent inasmuch as the cattle supply was short and hog cholera had swept the state and destroyed over 2,000,000 hogs.

The lambs used in this experiment were purchased by Clay, Robinson and Company's Denver branch near Las Cruces, New Mexico, and arrived at the station November 3d.

The shipment comprised 252 head representing the following distinct types: Sixty-three head of shorn lambs of prevailing Merino blood, designated in our experiment as Lot



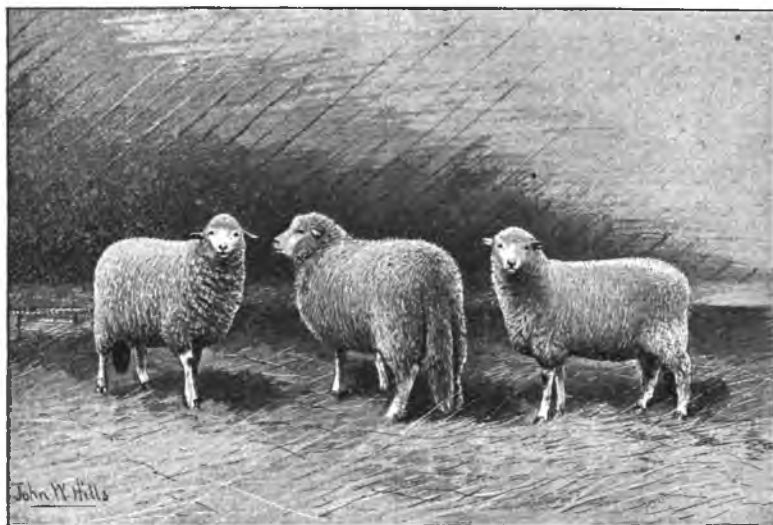
REPRESENTATIVE LAMBS FROM LOT I, SHORN MEXICAN MERINOS.

I, 63 head of typical coarse woolled New Mexican lambs, designated as Lot II, 63 head of Down blood cross on the Merino foundation, designated as Lot III, and 63 head of unshorn Merinos of the same blood as the first bunch, designated as Lot IV.

These lambs were dipped a few days after arriving at our yards and turned onto blue grass pasture and immediately started onto a very light feed of oats and bran morning and evening. They also had access to good hay during the night. Of this they ate freely. On December 1st they were divided into four lots as described, and put into separate yards. The weights at that time were as follows:

Lot I, 63 head shorn Merinos.....	2950
Lot II, 63 head Coarse Wool.....	3330
Lot III, 63 head Down Cross .....	3390
Lot IV, 63 head unshorn Merinos....	3340
Total.....	13010—Average 51.6

The average gain from the time of first weight taken three days after the lambs arrived, to December 1st, was only about one pound per head, but the change of conditions and the dipping are perhaps accountable for this low result.



REPRESENTATIVE LAMBS FROM LOT II, COARSE WOOLED MEXICANS.

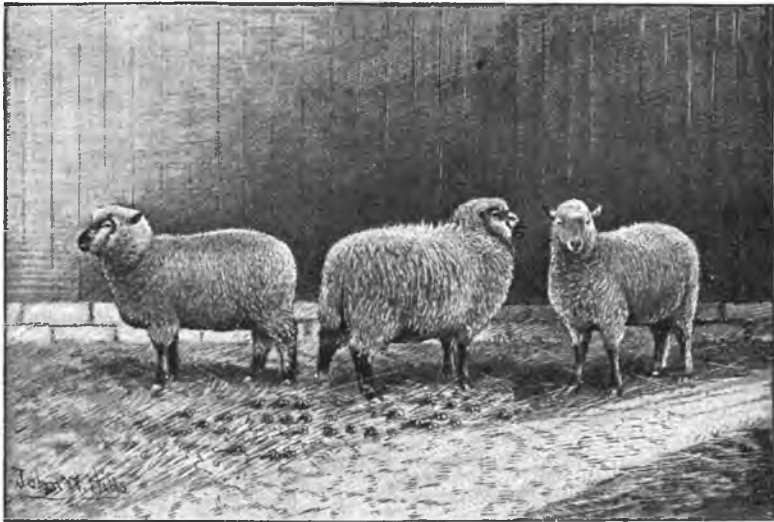
The entire 252 head of lambs were fed through the experiment and sent to market without the loss of a lamb from any of the bunches.

The following is the record of the weights and gains for each lot during the 110 days they were on feed.

	Weight Dec. 1	Average.	Weight March 1.	Average.	Average Gain.
Lot I, 63 Shorn Merinos .....	2950	46.9	4796	76.1	29.2
Lot II, 63 Coarse Wool .....	3330	52.8	5114	81.1	28.3
Lot III, 63 Down Cross .....	3390	53.8	5212	82.7	28.9
Lot IV, 63 Unshorn Merinos .....	3340	53	5080	80.6	27.6
Total .....	13010	51.6	20202	80.1	28.5

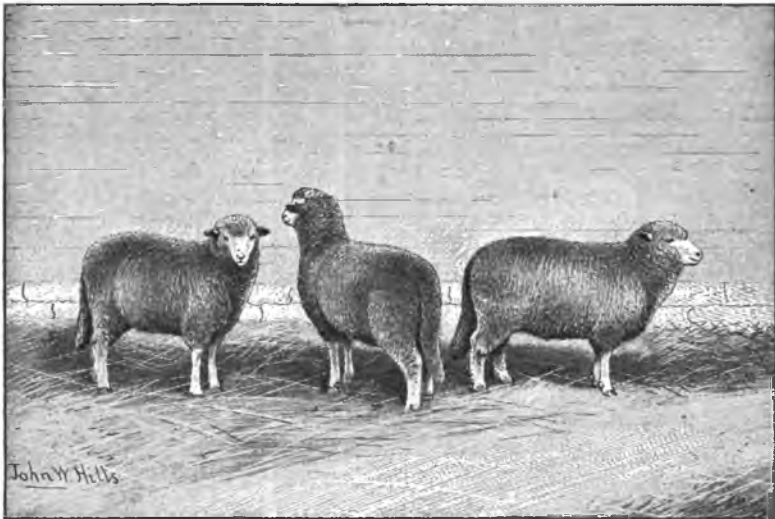
The following is a complete record of the amount and cost of feed consumed by each lot during the experiment, and this table also includes other calculations that furnish a basis for interesting comparisons with the pure bred lambs fed at the station during the past two winters and reported elsewhere in this bulletin.

Lot I (63) Shorn Merinos .....	2785	3135	514	324	743	14360	1846	.266	18233	9.88	\$ 49 83	2.7 cts
Lot II (63) Coarse Wool.....	2813	3168	518	327	743	14360	1784	.257	18314	10.26	50 04	2.8 cts
Lot III (63) Down Cross.....	2813	3168	513	327	743	14360	1822	.263	18314	10.05	50 04	2.74 cts
Lot IV (63) Unshorn Merinos.....	2728	3069	533	317	743	14360	1740	.251	18153	10.43	49 50	2.84 cts
Summary .....	11039	12640	2078	1295	2972	57440	7192	.259	73034	10.15	\$199 41	2.77 cts
	Oats.	Corn.	Bran.	Oil Meal.	Mangels.	Hay.	Total gains.	Average gain per head Daily.	Total dry matter.	Pounds of dry matter per pound of gain.	Total cost of feed.	Cost of feed per pound of gain.



REPRESENTATIVE LAMBS FROM LOT III, DOWN CROSS ON MERINO FOUNDATION

It will be observed that while these lambs have not made as large gains as the pure bred and have required more feed (dry matter) for a pound of gain, they have nevertheless produced very creditable gains at unusually low cost for feed consumed. The greater amount of feed and lower cost for a pound of gain by these lambs in comparison with the pure bred, seems like an inconsistent result. This apparent inconsistency, however, is doubtless due to the variation in the rations consumed. The range lambs, as already explained, ate freely of hay and quite sparingly of grain until they had been on feed for several months. At the beginning of the feeding test period, December 1st, the range lambs were eating less than one-fourth of a pound of mixed grain per day, and at the end of the first month they were eating only one-third of a pound, while the amount of hay consumed daily was at first as high as  $3\frac{1}{2}$  pounds per head and gradually declined to about two pounds as the feeding advanced and the allowance of grain increased. The pure bred lambs ate relatively much less hay and correspondingly more grain, consequently the results with respect to economy of production between



REPRESENTATIVE LAMBS FROM LOT IV, UNSHORN MEXICAN MERINOS.

the pure bred and the range lambs are not directly comparable. The hay fed to the range lambs was alfalfa a part of the time, and clover and timothy of good quality, the remainder. On account of their taking readily to a liberal allowance of hay, and eating sparingly of grain, a ration of this kind seemed best suited to these lambs, while the pure bred were capable of utilizing a heavier grain ration with correspondingly less hay. Both lots of lambs had all the grain they would eat during the last sixty days.

The comparison in economy of production of gain between pure bred and range lambs in our experiments in 1895 and 1896 where similar rations were fed does not indicate any advantage for the former on this point. Similar results have been obtained in cattle and hog feeding experiments at this station. Scientists have discovered and demonstrated that civilized man has no greater power of digestion than the barbarian or the Indian. Neither has the modern pure bred or high grade animal much, if any, greater power of digestion and assimilation than the native or unimproved types. The marked advantage possessed by the well bred animal lies

in the superiority of the finished product. This is the controlling factor in determining profit in feeding animals.

#### COMPARISON ON THE MARKET.

At the conclusion of the feeding test the lambs were shipped to Chicago and sold on the market March 23d. The prices obtained and percentage of dressed mutton were as follows:

	Selling price.	Per cent dressed.
Lot I, Shorn Merinos .....	\$ 4 75	55.9
Lot II, Long Wools.....	5 15	53.5
Lot III, Down Cross.....	5 25	52.8
Lot IV, Unshorn Merinos.....	5 00	52.8

The foregoing results furnish evidence establishing the value of improved blood and demonstrate that the enhanced value lies in the superiority of the product rather than in the capacity to make larger or cheaper gains. These lambs cost the station, delivered and ready to go into the experiment December 1st, about \$3.80 per hundred. In figuring the results for each bunch separately we have the following

#### FINANCIAL STATEMENT.

	DEBIT.	CREDIT.		
	Cost, including freight	Selling price, less freight, commission and winter's feed.	Net profit.	Net profit per head.
Lot I—63 head, Shorn Merinos.....	2950 lbs @ \$3 80= \$112 10	\$138 60	\$ 26 59	\$0 42
Lot II—63 head Coarse Wool.....	3330 lbs @ 3 80= 126 54	174 07	47 53	0 75
Lot III—63 head Down Cross.....	3390 lbs @ 3 80= 128 82	184 58	55 76	0 87
Lot IV—63 head, Unshorn Merinos.....	3340 lbs @ 3 80= 126 92	171 01	44 09	0 70
Totals.....	\$494 38	\$668 35	\$173 97*	

\*The actual net profit resulting from this feeding experiment was \$1.90 less than the above amount, owing to the fact that six of the coarse woolled lambs were cut 50 cents per cwt. in price on account of showing effect of scab.



It will be observed that Lot I, that made the largest and most economical gains, returned less than half as much net profit as Lot III. A part of this distinction in the selling price, however, was doubtless due to the fact that Lot I was shorn. Lots II, III and IV afford data for a more satisfactory comparison. In these the gains were substantially the same, and made at nearly uniform cost, and yet Lot III having a cross of Down blood made 24 per cent. more profit than Lot IV, and 16 per cent. more than Lot II. This increased profit can be almost wholly attributed to one cross of improved blood. The higher percentage of dressed mutton made by Lot I was doubtless due to the fact that these lambs were shorn in the fall and were carrying considerable less wool than the other lots at the time of killing. The results indicate that fall shorn lambs feed better than unshorn, of the same quality, but unless allowance is made for the fleece, the latter are likely to be more profitable—that is the increased gains would not compensate for the wool taken off, or justify the same purchase price for these lambs as feeders.

Thorough dipping of range lambs is of urgent importance and it should be repeated in about two weeks after the first treatment. One dipping was found to be sufficient for the shorn lambs, but all the others had to be dipped a second time.

The feeding and all conditions surrounding the different lots during the experiment were the same. Each lot had a clean dry yard with ample well bedded shed room. They had the run of both shed and yard at all times except during an occasional severe storm when they were confined to the shed for several hours, but were always fed grain in the open yard.

The feeds used in this experiment were rated at the following prices based on the local market value at that time:

Bran per cwt .....	35 cents
Oats per cwt .....	35 cents
Shelled corn per cwt.....	20 cents
Oil meal per cwt .....	90 cents
Hay per cwt.....	20 cents
Roots per cwt .....	5 cents

The above prices are equivalent to 11 1-5 cents per

bushel for the corn and oats. If to these prices be added the net profit in handling this lot of lambs after deducting the expense of feeding, interest on investment and taxes, the returns realized for the grain would be equivalent to fully 100 per cent. better than the prevailing market values aside from the advantage of affording a home market for the unfinished products of the farm. While these lambs are not of the class that farmers could afford to raise on high priced lands, they can nevertheless be fed at a good profit under conditions similar to those reported in this bulletin.