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ADVANTAGES FROM USE OF PURE BRED RAM

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The use of a good sire is one of the recognized principles of improving the live stock. This principle is generally considered to be fundamental by all breeders of live stock, both breeders of pure bred stock and breeders of animals for the open market. However, some breeders through neglect, or a lack of knowledge and interest in the improved types, use sires which retard the general quality of their flocks and herds, rather than advance it.

Judging from the quality of native lambs on the various Missouri markets, lamb producers of this state are realizing more fully each year the economy of investing in good sires. The object of this bulletin is to present data which will show the difference in profits derived from grade ewes bred to an average medium priced mutton type ram as compared with the profits from the same class of ewes when bred to an inferior ram.

A good strong yearling ram should be able to serve fifty ewes. A good ram when used on a flock of grade ewes is in many cases more than half the flock because he will usually have greater ability to stamp his character on the offspring than will the ewes. So with a small flock of grade ewes, worth from \$4.00 to \$10.00 per head, one can afford to purchase a good mutton ram. As the value of the ewe flock increases, one can afford a higher class ram.

It is economy to have a ram of superior character at the head of the flock.

Ewes and Rams Used.—The ewes in this experiment were selected from a load of Western ewes, classified as Colorado ewes on the Kansas City market. (Fig. 1.) They showed a predominance of fine wool blood.

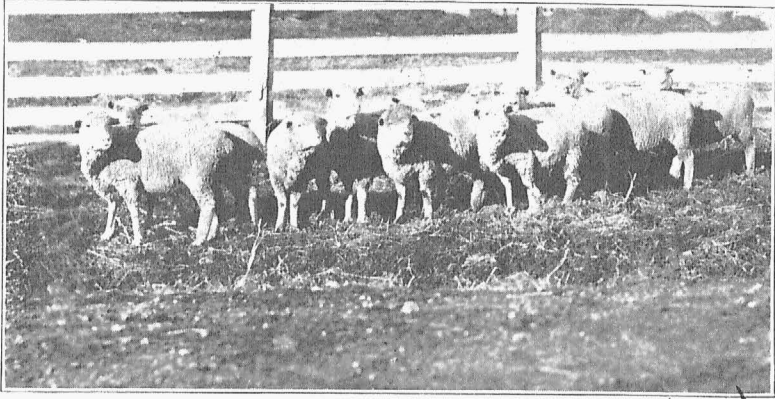


FIGURE 1. SHOWING THE TYPE OF EWES USED IN THE EXPERIMENT.

Lot 1 consisted of 17 of these ewes which proved to be with lamb when purchased. The sire of these lambs was a "scrub" ram.

Lot 2 consisted of 17 ewes comparable in every respect to those in Lot 1 except that they were not pregnant. The ewes in the two lots were as uniform as to size, quality, and condition as was possible to select them. The ewes of Lot 2 were bred to the Hampshire ram shown in Fig. 2. This ram was a medium priced individual, which any sheep breeder could afford to use on grade ewes. As seen from the cut, this ram lacks breed character and shows only average mutton type. He was a large framed growthy yearling and weighed 215 lbs. in a thin condition of flesh at the end of the breeding season. A ram of this type and quality can be purchased for \$30 or \$35.

Feed for Ewes.—The ewes in both lots were fed the same rations from the time they arrived at the experiment station, September 29, 1911, until the close of the experiment in June. All the ewes were kept on bluegrass pasture from September 29 to November 29. The grass was short on account of the extremely dry summer of 1911.

The ewes were fed in dry lots on clover hay from November 29 to December 9. From December 9 until lambing time, the ewes were used for another experiment which made it necessary to feed both lots on several different rations.

The number of ewes from each of the Lots 1 and 2, which were fed on these different rations, were kept the same, so the lots were comparable. After lambing until May 15, the ewes of both lots



FIGURE 2. THE SIRE OF THE LAMBS OF LOT II.

The lambs sired by this ram sold for \$7.35 per 100 lbs. as compared with \$4.50 per 100 lbs. for lambs sired by the scrub ram.

were fed the same ration—alfalfa hay and grain. The grain consisted of shelled corn, 6 parts; wheat bran, 3 parts; and old process linseed oil cake, pea size, 1 part, by weight.

On May 15, both lots of ewes were put on bluegrass pasture without grain.

Feed for Lambs.—The lambs were fed grain in creeps as soon as they began to eat. The lambs in Lot 1 were first fed grain at an average age of 9.5 days, and the lambs in Lot 2 at an average age of 9.7 days. The lambs received all the grain they would clean

up from one feeding time to the next. They were fed fresh grain every morning and evening.

The grain fed the lambs from lambing time to June 1st consisted of coarsely ground corn, 6 parts; wheat bran, 3 parts; and old process linseed oil cake, pea size, 1 part, by weight. The ration was changed June 1st to ground corn, 6 parts, and oil cake, 1 part, by weight.

The lambs ate some hay with the mothers, but this was charged to the ewes.

Salt and Water.—Clean salt was kept before the ewes.

Fresh clean water was supplied the ewes and lambs twice daily in galvanized iron tubs.

Weight of Ewes.—The average weight of the two lots of ewes are given in Table I.

TABLE I.
Weight of Ewes, Seventeen Ewes in Each Lot.

	Lot I. Ewes bred to inferior ram.	Lot II. Ewes bred to superior ram
Average initial weight per ewe Dec. 9.	93.17	95.03
Weight per ewe after lambing.....	92.35	98.29
Loss or gain per ewe after lambing...	.82 loss	3.26 gain
Average final weight per ewe, June 22d	85.00	85.27
Average total loss per ewe.....	8.17	9.76

The difference in weight of the ewes throughout the experiment was slightly in favor of Lot 2. This difference is too small however to account for the difference in the lambs.

So far as could be determined from observations made at weighing time, the ewes in each lot suckled their lambs equally well. Hence, the difference in condition and weight in the lambs could not be attributed to the difference in the amount of milk they received from their mothers.

Weights and Gains of Lambs.—Table II shows the difference in weights and gains of the two lots of lambs.

TABLE II.
Weights and Gains of Lambs, Eighteen Lambs in Each Lot.

	Lot I. Lambs sired by inferior ram.	Lot II. Lambs sired by superior ram
Average age in days per lamb, June 22d	122.50	93.61
Average birth weight per lamb (lbs.)..	8.79	9.75
Average final weight per lamb (lbs.)..	56.22	59.72
Average total gain per lamb (lbs.)....	47.43	49.97
Average daily gain per lamb (lbs.)....	.387	.533

The above figures show that the lambs in Lot II made an average total gain at the average age of 3 months (93.61 days) of 2.54 lbs. more than the lambs in Lot I at the average age of 4 months (122.5 days).

The lambs sired by the better ram averaged 28.89 days younger than the other lambs and the final weight of the former were 3.5 lbs. greater, illustrating the great advantage derived from a good sire.

As shown in the last line of the table the lambs which were sired by the superior ram made an average daily gain of .532 lbs. as compared with .387 lbs. daily gain made by the lambs sired by the inferior ram or 26.6 per cent greater gain in favor of lambs sired by the better ram.

It was not possible to obtain the weights of the lambs at exactly the same age. Table III shows the weights and gain of the lambs at practically the same age however. The difference between the two lots being only .89 of a day in favor of Lot I. This difference is so small that it does not cause any material difference in the results.

TABLE III.

Weights and Gains of Lambs at Three Months of Age, Eighteen Lambs in Each Lot.

	Lot I. Lambs sired by inferior ram.	Lot II. Lambs sired by superior ram.
Age in days	94.50	93.61
Average weight at birth.....	8.79	9.75
Average weight at 3 months of age....	50.33	59.72
Average total gain	41.54	49.97
Average daily gain439	.533

The above table shows that at practically the same age the lambs sired by the better ram were 9.39 lbs. heavier and made a total gain of 8.43 lbs. more. In general, younger lambs will make a greater daily gain than older ones providing they have sufficient feed and that they are comparable in condition. Thus the difference in the average daily gain presented in Tables II and III of the two lots of lambs can be partially accounted for.

Feed Consumed by Lambs.—The difference in the amount of grain consumed by the lambs is more marked than the difference in their weights.

Table IV shows the feed consumed by lambs.

TABLE IV.

Feed Consumed by Lambs from Birth to June 22.

	Lot I, Lambs sired by inferior ram.	Lot II, Lambs sired by superior ram.
Total pounds grain for 18 lambs.....	758.00	475.00
Total pounds grain per lamb.....	42.11	26.39
Average pounds grain per day per lamb	.34	.28
Average pounds grain per 100 lbs. gain	88.78	52.81

The above table shows the total amount of grain consumed by the lambs in Lot I to be 59 per cent more than that eaten by Lot II. This illustrates the economy of the improved sire.

The lambs of Lot I ate 88.78 lbs. of grain per 100 lbs. gain, while those of Lot II required nearly one-third less than that amount, or 52.81 lbs. grain per 100 lbs. gain.

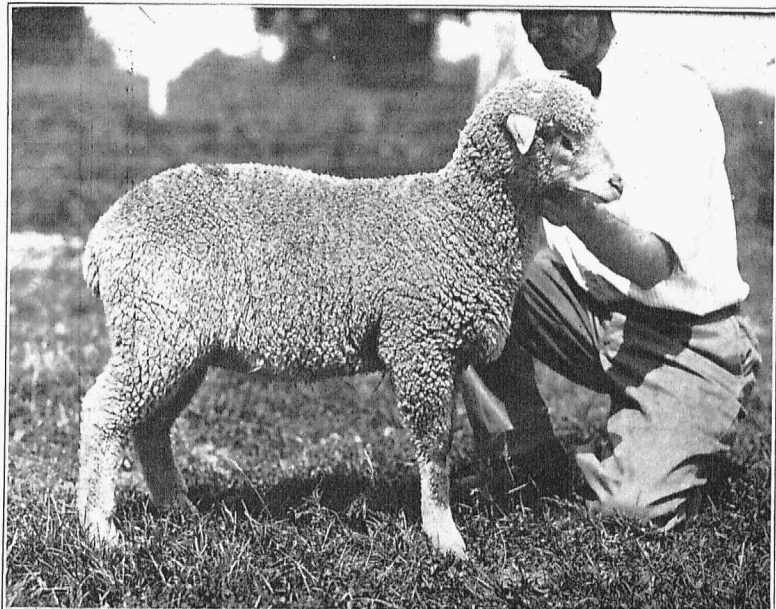


FIGURE 3. REPRESENTATIVE LAMB Sired BY INFERIOR RAM.
SIDE VIEW.

This type of lamb sold for only \$4.50 per 100 lbs.

The lambs in Lot I were 28.89 days older than the lambs in Lot II and it should be borne in mind that older lambs in the same condition of flesh require more grain per pound gain than the younger ones.

Table V shows the grain consumed by the two lots of lambs from birth to a little over 3 months of age. The difference in the average age of the two lots being only .89 of a day.

TABLE V

Feed Consumed by Lambs at Three Months of Age, Eighteen Lambs in Each Lot.

	Lot I. Lambs sired by inferior ram.	Lot II. Lambs sired by superior ram.
Average age in days.....	94.50	93.61
Total pounds of grain eaten by eighteen lambs	506.00	475.00
Total grain per lamb.....	28.11	26.39
Average grain per lamb per day.....	.29	.28
Average grain per 100 lbs. gain.....	67.66	52.81

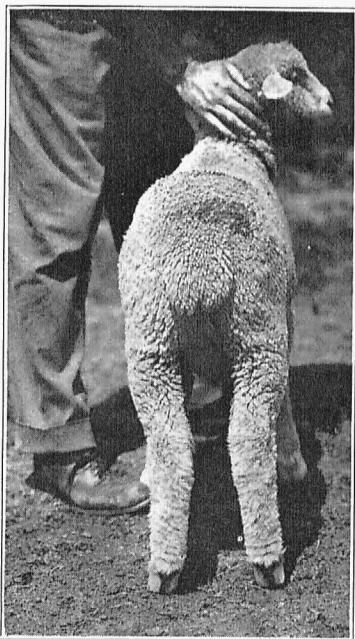


FIGURE 4. REAR VIEW OF LAMB BY SCRUB SIRE.

The same lamb shown in Figure 3. The narrow, raw back, deficient hind quarters and long legs decrease the per cent this lamb will dress out.

The difference in the feed consumed by the two lots of lambs at the same ages is small. The greatest difference is that the lambs sired by the superior ram required 14.85 lbs. less grain per 100 lbs. gain than did the lambs sired by the inferior ram. The lambs of Lot I required 28 per cent more grain for the same gain than did the lambs of Lot II.

After lambing, the ewes were fed grain and hay in such amounts as were necessary to keep them in good thrifty condition. As seen in the last line of table IV, the average daily rations were practically the same. The difference in total hay and grain consumed by the two lots of ewes can be accounted for by the earlier lambing of Lot I. Ewes suckling lambs require more feed in dry lot than pregnant ewes.

TABLE VI.

Feed Consumed by Ewes from Lambing Until Turned to Pasture.

	Lot I. Ewes bred to inferior ram.	Lot II. Ewes bred to superior ram.
Average number of days on feed in dry lot	84.50	55.61
Total pounds of hay eaten.....	3746.50	2341.50
Total pounds of grain eaten.....	1211.25	858.50
Total pounds of hay eaten per ewe....	220.38	137.70
Total pounds of grain eaten per ewe...	71.25	50.50
Average daily ration of hay per ewe...	2.608	2.476
Average daily ration of grain per ewe.	.843	.908

The greatest factor affecting the difference in the profits of the two lots is the selling prices of the lambs; the lambs of Lot I selling for \$4.50 per 100 lbs. at the National Stock Yards, East St.

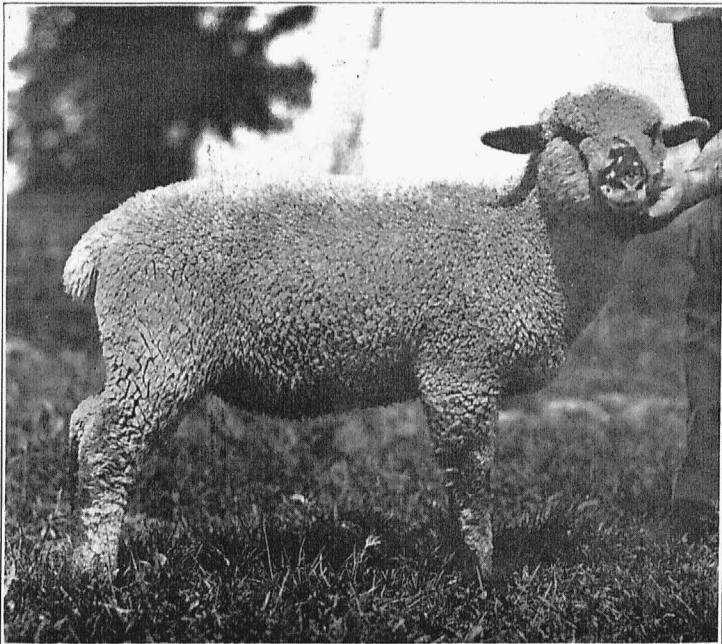


FIGURE 5. REPRESENTATIVE LAMB SIRED BY MUTTON RAM. SIDE VIEW.

The kind that sold for \$7.35 per 100 lbs. This type of lamb will dress out a high per cent of carcass and the carcass will be of good quality.

Louis, Ill., while those of Lot II brought \$7.35 per 100 lbs. The

difference in the prices of these two lots is due to the quality and conformation of the lambs.

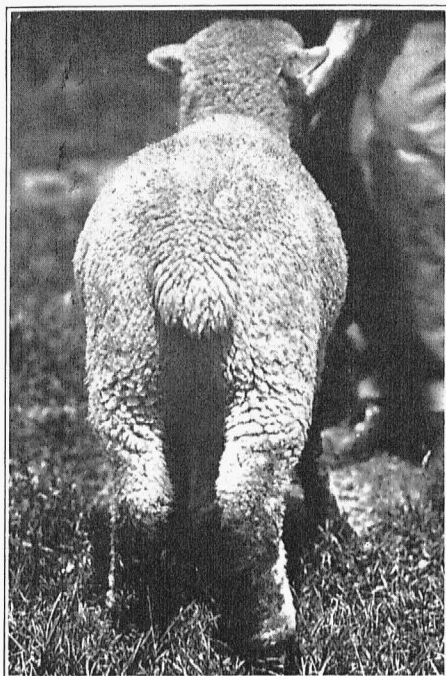


FIGURE 6. REAR VIEW OF WELL BRED LAMB.

The same lamb shown in Figure 5. The broad, thickly fleshed back and full hind quarters of this type of lamb are desired by the butchers.

The lambs in Lot II were broader, thicker, smoother, more full and deeper in the hind quarters than those of Lot I, as can be seen in Figures 3 to 6 which show side and rear views of representative lambs of each lot at the time they were marketed. The butcher or packer prefers the type of lamb shown in Figures 5 and 6 because it will dress out a higher per cent and present a better carcass.

Figures 7 and 8 show a number of representative lambs from each lot. These pictures were taken on the same day. The lambs of Lot I were 8 weeks old while those of Lot II were only 4 weeks old. The lack of mutton conformation in the lambs of Lot I is especially noticeable.

SUMMARY.

1. The average total gain of the lambs sired by the better ram was 2.54 lbs. more at 3 months (93.61 days) of age than the average total gain of the lambs sired by the inferior ram at 4 months (122.5 days) of age.
2. The average daily gain of the better lambs was 26.6 per cent greater than that of the lot of lambs sired by the inferior ram.
3. The feed eaten by the lot of lambs sired by the inferior ram was 59 per cent more than that eaten by the lambs sired by the superior ram. The grain eaten per 100 lbs. gain was 88.78 lbs. for the former lot and only 52.81 lbs. for the latter.

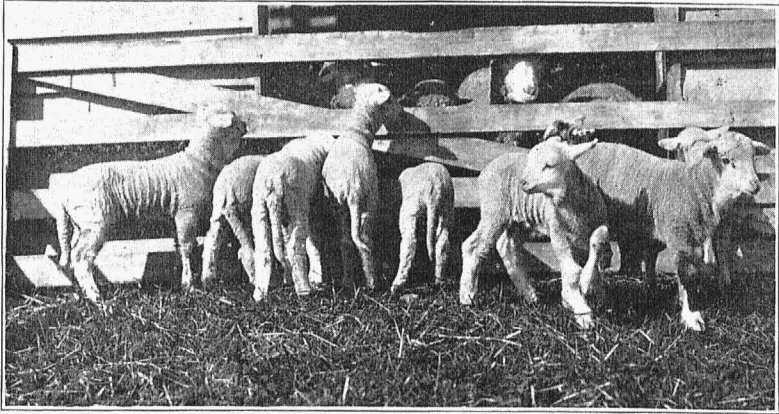


FIGURE 7. LAMBS SIRED BY THE INFERIOR MUTTON RAM AT THE AGE OF EIGHT WEEKS.

This lot of lambs at four months of age did not weigh as much or make as great a total gain as did the lambs of Lot II at the age of three months.

4. Both lots of lambs consumed about the same amount of grain at the same ages, the advantage being slightly in favor of the lambs of the better mutton type.

5. At 3 months of age, the lambs sired by the ram of mutton type were 9.39 lbs. heavier and made a total gain of 8.43 lbs. greater

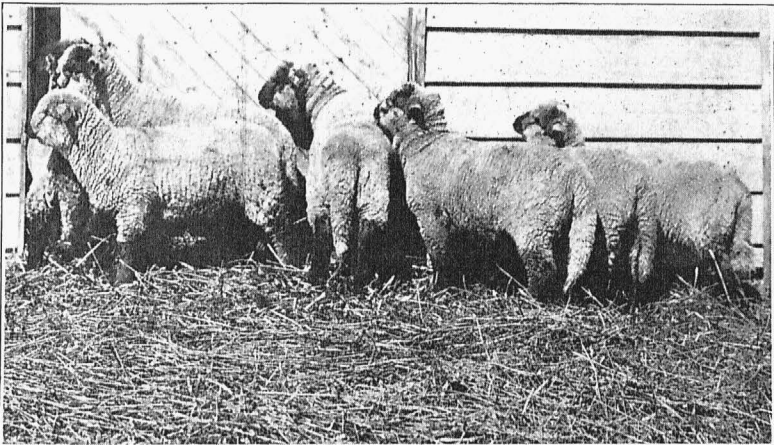


FIGURE 8. LAMBS SIRED BY AN AVERAGE MUTTON TYPE RAM AT THE AGE OF FOUR WEEKS.

This lot of lambs at three months of age weighed 3.5 lbs. more per head than the lambs of Lot I at four months of age.

than the lambs sired by the inferior ram. The lambs from the scrub sire required 2.8 per cent more grain per 100 lbs. gain than did the other lot.

6. The average daily rations for the two lots of ewes were about the same. Lot I required more feed because ewes require more feed when suckling lambs than pregnant ewes, and the lambs of Lot I on an average were 28.89 days older than those of Lot II.

7. Lambs sired by the good ram sold for \$7.35 per 100 lbs., while those sired by inferior ram brought only \$4.50 per 100 lbs.

8. The lambs of Lot II were thicker fleshed, smoother, broader in back and lighter in the pelts than those of Lot I.