

A Preliminary Evaluation of Some Growth and Carcass Characteristics of 1/4 Finnish Landrace Lambs

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Story in Brief

In the spring of 1971 the first replicate of some experimental ewe lambs were born at Fort Reno. These were composed of four different groups which will be evaluated over a 7 year period to compare them for suitability as commercial ewes under Oklahoma conditions. The breeding groups consisted of: (1) $\frac{1}{2}$ Dorset $\frac{1}{2}$ Rambouillet, (2) $\frac{1}{4}$ Dorset $\frac{3}{4}$ Rambouillet, (3) $\frac{1}{4}$ Finnish Landrace- $\frac{1}{4}$ Dorset- $\frac{1}{2}$ Rambouillet and (4) $\frac{1}{4}$ Finnish Landrace- $\frac{1}{4}$ Rambouillet- $\frac{1}{2}$ Dorset.

The data on the ewes and their male sibs suggested that the two groups of Finnish Landrace descent had birth weights about one to one and a half pounds lighter than the Dorset X Rambouillet groups. All groups had approximately the same rates of gain up to 70 days of age (.6 lbs./day). Except for the $\frac{1}{4}$ Dorset $\frac{3}{4}$ Rambouillet lambs (.58 lbs./day) rates of gain from weaning to market were also very similar (approximately .51 lbs./day).

The average daily gains from birth to market also showed a faster gain of the $\frac{1}{4}$ Dorset $\frac{3}{4}$ Rambouillet lambs (.59 lbs./day) as compared to the other three groups (approximately .56 lbs./day).

It was also observed that early death losses (before two weeks of age) were slightly higher (16.2 and 15.9 percent) in the groups with Finnish Landrace breeding than in the Dorset X Rambouillet groups (11.7 and 5.9 percent).

Eight wether lambs from each of groups 1, 3 and 4 were slaughtered at the Oklahoma State University meat lab. The carcass data taken shows preliminary results. It is a comparison on a very few animals to see the effect of the $\frac{1}{4}$ Finnish Landrace breeding as compared to the $\frac{1}{2}$ Dorset $\frac{1}{2}$ Rambouillet breeding relative to carcass characteristics.

Results on the comparisons of backfat thickness and dressing percent showed the $\frac{1}{2}$ Dorset $\frac{1}{2}$ Rambouillet lambs to be fatter (.32 in.)

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than the $\frac{1}{4}$ Finnish Landrace lambs (about .28 in.), and they also had a higher dressing percent (50.3 percent as compared to approximately 48.3 percent). There were no large differences between the breed groups when compared on loin eye area (about 2.0 sq. in) or cutability scores (about 43).

Introduction

One of the main areas of the sheep industry that can be vastly improved is in lamb production per ewe. Two main management systems can be employed to achieve this end: i.e., increase lamb crop percent at each lambing or increase the number of lambings per ewe per year. To determine what breed of ewe is most productive with each system, a long range program was initiated in 1970 at the Fort Reno Livestock Station. The breed crosses to be tested are $\frac{1}{2}$ Dorset $\frac{1}{2}$ Rambouillet, $\frac{1}{4}$ Dorset $\frac{3}{4}$ Rambouillet, $\frac{1}{4}$ Finnish Landrace- $\frac{1}{4}$ Dorset- $\frac{1}{2}$ Rambouillet and $\frac{1}{4}$ Finnish Landrace- $\frac{1}{4}$ Rambouillet- $\frac{1}{2}$ Dorset (Table 1).

The Rambouillet was used in this program because it is an out of season breeding sheep, and one of the most widely used western ewes. The Dorset was included because it also is an out of season breeding sheep. Previous research at Fort Reno has shown that the Dorset X Rambouillet ewe was superior to the straightbred Dorset or straightbred Rambouillet on the basis of spring breeding reproductive rate and for twice yearly lambing programs. The Finnish Landrace breed (Finnsheep) is a medium size sheep somewhat deficient in wool production (a coarse wool) and muscling, but is well known for its outstanding prolificacy (often 4-5 lambs in a litter). For the latter reason Finnish Landrace breeding was included in the study. These preliminary results summarize comparisons of the breed groups for birth weights, lamb growth performance, lamb mortality and a few major carcass characteristics. The program is not far enough along to observe these traits on the offspring of the test ewes, therefore, the data in this report is on the ewes themselves and their male sibs.

Materials and Methods

Between 1970 and 1972 planned matings will be made to produce the desired groups of ewes for evaluation. The performance as lambs (of the desired breed crosses that were born in the spring of 1971) were evaluated for this report. There were 71, 55, 74 and 67 lambs in the groups one to four, respectively, as shown in Table 1.

Management practices were the same for all groups of lambs. Lambs were born in the lot and were placed in lambing pens with their mother

Table 1. The Lamb Groups and Their Breed Components with Numbers and Early Death Losses¹ for Each Group

Group No.	Breed Components	No. of Lambs Born	Early Death Losses (%) ¹
1	½ Dorset, ½ Rambouillet	77	11.7
2	¼ Dorset, ¾ Rambouillet	51	5.9
3	¼ Finnish Landrace, ¼ Dorset, ½ Rambouillet	74	16.2
4	¼ Finnish Landrace, ¼ Rambouillet, ½ Dorset	67	14.9

¹ Death before 2 weeks of age.

for 3 to 4 days. At this time lamb data was collected. All lambs had access to a creep feed. The creep feed consisted of five percent molasses, 55 percent cracked milo, ten percent soybean meal and 30 percent ground alfalfa hay.

Starting when the oldest lambs reached 30 pounds the lambs were all weighed biweekly. The lambs were weaned at approximately ten weeks of age and placed in a drylot feed area at the Fort Reno station. When the youngest lambs reached twelve weeks of age the soybean meal was removed from the creep ration and replaced with ground alfalfa hay. Due to the problem of internal parasites in springborn lambs, they were never allowed out of the drylot area until final removal.

The ewe lambs that weighed 75 pounds or over on the biweekly weighings were removed from the drylot and put on a clean pasture with no extra feed. They were bred at 7 months of age to compare their rates of sexual maturity since this is the first reproductive trait that these ewes will be compared for in the long range project. The wethers were carried up to 95 pounds and shipped to market. The last of the wether lambs were used for the carcass data given in this study.

Results and Discussion

Death Losses

Death losses on the spring born lambs have been separated into two divisions; early death losses (before two weeks of age) and lambs that died between two weeks of age and market. Any deaths that occurred between 2 weeks of age and market were contributed to chance and not breeding therefore only death losses were reported here. The two Dorset X Rambouillet groups had early death loss percentages of 11.7 and 5.9 while the Finnsheep groups had 16.2 percent and 14.9 percent early death

losses. From these preliminary results (Table 1) it would appear that the lambs with Finnish Landrace breeding had greater death losses than the Dorset X Rambouillet sheep.

Lamb Growth Performance

The lambs from each group were evaluated on growth performance by comparing them for birth weight, rate of gain from birth to weaning, post weaning rate of gain and average daily gain from birth to market (Table 2).

Forty-three of the wether lambs were sold for nutrition work at weaning time and were not used for tabulating average daily gain from birth to market. Also, the ewe lambs were taken out of the drylot at about 75 pounds and, therefore, their post weaning rate of gain and average daily gain figures were only calculated up to about 75 pounds.

The averages for birth weights showed that the $\frac{1}{4}$ Finn lambs were lighter at birth (8.8 pounds and 8.0 pounds) as compared to the Dorset X Rambouillet groups (9.2 pounds and 9.6 pounds). Rates of gain from birth to 70 days of age were similar for all four groups. The groups containing Finn breeding compared favorably with the $\frac{1}{2}$ Dorset $\frac{1}{2}$ Rambouillet group on rates of gain and average daily gain. However, group 2 ($\frac{1}{4}$ Dorset $\frac{3}{4}$ Rambouillet) had a higher rate of gain from 70 days to market (.58 lbs./day vs. .51 lbs./day, .52 lbs./day and .49 lbs./day) and a higher average daily gain (.59 lbs./day vs. .56 lbs./day, .57 lbs./day and .54 lbs./day) than the other three groups. Other work at Fort Reno and elsewhere has sometimes shown Rambouillet lambs to be faster gaining lambs than Dorsets, and these results agree with those observations.

Table 2. Birth Weights and Mean Growth Performance of the Spring-born Lambs

Measurement	Mean			
	$\frac{1}{2}$ D, $\frac{1}{2}$ R	$\frac{1}{4}$ D, $\frac{3}{4}$ R	$\frac{1}{4}$ F, $\frac{1}{4}$ D, $\frac{1}{2}$ R	$\frac{1}{4}$ F, $\frac{1}{4}$ R, $\frac{1}{2}$ D
Birth weight	9.2	9.6	8.8	8.0
Rate of gain up to 70 days	.60	.59	.61	.59
Rate of gain from 70 days to market (lbs./day) ^{1,2}	.51	.58	.52	.49
Average daily gain from birth to market (lbs./day)	.56	.59	.57	.54
No. of lambs used to calculate average daily gain ²	54	29	55	50

¹ Ewes lambs were pulled out of drylot at 75 pounds for use in flock.

² 43 wethers were sold at weaning time.

Carcass Characteristics

Eight wethers from each of groups 1, 3 and 4 were studied for major carcass characteristics. They were cut and evaluated on chilled carcass weight, loin eye area, backfat thickness, quality grade, leg conformation grade, cutability and dressing percent as shown in Table 3. These wethers were the last of the spring lamb crop to be taken from the drylot.

There were no great differences in loin eye area or cutability, but the groups with Finn breeding did grade lower on quality grades and leg conformation grades. They were also a little lower on dressing percent and chilled carcass weight. Figures on back fat thickness showed that the 1/2 Dorset 1/2 Rambouillet lambs were fatter than the groups with Finn breeding (.32 in., as compared to .27 in., and .29 in.).

Table 3. Mean Comparisons for Slaughter Measurements

Measurement	Mean		
	1/2 Dorset	1/4 Finn 1/4 Dorset	1/4 Finn 1/4 Rambouillet
	1/2 Rambouillet	1/2 Rambouillet	1/2 Dorset
Number of lambs	8	8	8
Live wt. at Ft. Reno (lbs.)	98.8	96.4	98.4
Chilled carcass wt. (lbs.)	49.7	46.0	47.9
Dressing percent	50.3	47.9	48.8
Cutability	42.8	43.0	43.5
Carcass quality grade ¹	12.6	11.5	12.1
Leg conformation grade ¹	13.3	11.4	12.8
Loin eye area (sq. in.)	2.08	1.90	2.06
Backfat thickness (in.)	.32	.27	.29

¹ Grade code is on a scale of 1 to 15, 11 being average choice, 12 high choice and 13 low prime.