The Productivity Of Young Crossbred Ewes of Finnsheep, Dorset And Rambouillet Breeding When Lambed In Spring

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Story in Brief

During the years 1970-1972 matings were made to produce about 250 ewe lambs that were of the following breed combinations: ½ Dorset X ½ Rambouillet, ¼ Dorset X ¾ Rambouillet, ¼ Finnsheep X ¾ Rambouillet, ¼ Finnsheep X ¼ Dorset X ½ Rambouillet and ¼ Finnsheep X ½ Dorset X ¼ Rambouillet. All ewe lambs were born during March and April and were mated to lamb first at 12 months. The first group reared have lambed for the second time at 24 months of age.

Differences between the breeding groups have not been large for any traits studied. Reproductive rate at one year of age showed a consistent advantage for the two ¼ Finn groups that contained both Dorset and Rambouillet breeding. Reproductive rate at two years of age showed a small advantage for the ¼ Finn ewes.

The matings have all been to blackface (Hampshire or Suffolk) rams, and thus the growth performance studied represents the contribution of the dams of the lambs insofar as breed group differences are concerned. The lambs from the larger ¼ Dorset X ¾ Rambouillet ewes were larger at birth and the lambs from the ¼ Finn X ½ Dorset X ¼ Rambouillet ewes were smallest. The growth rates to ten weeks of age, ten week weights and growth rates after weaning at ten weeks did not produce differences that were large enough to establish any important patterns.

Introduction

The most productive mating system for commercial sheepmen usually involves a three-way cross. The ewe flock needs to be a cross between two breeds that are highly productive, and these crossbred ewes should be mated to rams that produce growthy lambs with good carcasses. Past research at Fort Reno has established the superiority of the lambs from Dorset X Rambouillet ewes bred to good blackfaced rams for this purpose.

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During the past few years a very limited number of Finnish Landrace (Finnsheep) sheep have been brought into the United States. This breed excels in lambing rate in their native country. Their wool and carcass conformation are apparently not as good as found on most domestic breeds. This station obtained rams that were ½ Finnsheep X ½ Dorset and ½ Finnsheep X ½ Rambouillet during 1970 and 1971. These rams were used to produce some crossbred ewes combining Finnsheep, Dorset and Rambouillet that were born during the spring months of 1971 and 1972. The growth rate of these lambs and some carcass characteristics of some of the male lambs were reviewed in the 1972 and 1973 Animal Sciences and Industry Research Reports (MP-87 and MP-90).

This report gives the reproductive performance of these young ewes during the years of 1972 and 1973. The growth rate of the lambs produced by these ewes is also summarized.

Experimental Procedure

The ewes constituting this experimental flock are of five breeding groups and were born during the two years, 1971 and 1972. (See Table 1). The ewe groups of the various kinds were produced by mating the two kinds of ½ Finnsheep rams indicated above and some Dorset and Rambouillet rams to ewes of Rambouillet, Dorset or ½ Dorset X ½ Ram-

Table 1. The Breed Crosses Used to Produce the Test Ewes and the Number Kept for Testing Each Year[1]

Group	Breeding of Test Ewes	Test Ewe Sire Breed	Test Ewe Dam Breed	No. Born S 71	F 71	S 72
1	½ Dorset × ½ Ramb. (Control)	Dorset	Rambouillet	26	5	24
2	¼ Dorset × ¾ Ramb.	Rambouillet	½ Dor. × ½ Ramb.	28	7	24
3	¼ Finn. × ¾ Ramb.	½ Finn × ½ Ramb.	Rambouillet	0	0	41
4	¼ Finn- ¼ Dorset × ½ Ramb.[2]	a. ½ Finn × ½ Dorset b. ½ Finn × ½ Ramb.	Rambouillet ½ Dor. × ½ Ramb.	22	5	29
5	¼ Finn- ½ Dorset × ¼ Ramb.[2]	a. ½ Finn × ½ Dorset b. ½ Finn × ½ Ramb.	½ Dor. × ½ Ramb. Dorset	23	7	23

[1] The ¼ Finnish Landrace X ¾ Rambouillet ewe lambs were born in 1972 only.
[2] These breed crosses were produced by two different matings (a and b).

bouillet breeding in such plans as necessary to get lambs of the kinds indicated.

The lambs were born during March and April (except for a few, Table 1) of each year, and those born together were weaned together. Those that were spring born were not allowed out of dry lot because of parasites until they reached 75-80 pounds at which time they were put on clean pasture for further growth. The lambs nursed their mothers (who grazed for a few hours daily) and had creep feed available until they were weaned at about ten weeks. After weaning the lambs were on a self-feeder containing a mixture of approximately 35-40 percent alfalfa, 5 percent molasses and 55-60 percent sorghum grain.

In order to test the rate of sexual maturity the ewe lambs were exposed to fertile rams when the oldest lambs were seven months of age (Table 2). The ewes that conceived lambed at about 12 months of age. The rams used were Hampshire or Suffolks and thus the record of lambing difficulties should demonstrate any differences between the ewe breed groups in ease of lambing.

The lambs produced by the test ewes were reared in dry lot from birth in March and April until sold for slaughter during late summer

Table 2. Mating Performance of the First and Second Groups of Ewes When Lambing at 12 Months of Age

Ewe Breeding	Number Avail.	Ave. 1 Age at Breeding (days)	Ewes Not Mated	Ave. 2 Conc. Age (days)	Ave. Wt. Prior to Breeding Season	Lambing[3] Assist.
st Group Born Spring 1971)						
½Dx½R	26	195.7	4	229.3	88.0	2 9
¼Dx¾R	28	199.6	3	226.4	90.7	5 4
¼Fx¾R	0	0	0	0	0	
¼Fx¼Dx½R	22	193.0	1	216.4	90.1	3 8
¼Fx½Dx¼R	23	195.0	0	224.7	89.0	2 1
nd Group Born Spring 1972)						
Dx½R	24	213.0	4	236.3	82.2	1 1
Dx¾R	24	216.4	4	248.6	86.8	0 3
Fx¾R	37	202.1	7	235.4	81.4	0 7
Fx¼Dx½R	29	196.8	2	230.6	81.4	1 2
Fx½Dx¼R	23	187.7	3	223.1	78.8	2 5

verage age in days at the beginning of the breeding season 1971-October 18, 1972-Octo- 20.
verage age in days at conception.
umber of lambings assisted of ewes lambing.

and fall. They had creep feed available until weaned. The creep feed was approximately:

	Percent
Alfalfa Hay	30
Soybean Meal[1]	10
Molasses	5
Sorghum Grain	55

The ewes were allowed to graze for a few hours daily before being removed from the lot when the lambs were about ten weeks old. After weaning the lambs were self fed until marketed at 95 to 100 pounds.

Results

The results presented in the accompanying tables are for all ewes when lambed at 12 months of age and for the first group when lambed at 24 months of age. Also these results involve fall breeding and spring lambing. Later studies will evaluate the ewes for lambing during other seasons.

The ewes were tested for earliness of maturity by mating them to lamb at one year of age. Table 2 presents some information relative to the ewes at this lambing. The average age of ewes at the beginning of the breeding period was between six and seven months. The second group was less well grown out as indicated by their lighter weights, and they were older at conception as compared to the first group. This is believed to be due to the conditions when they were lambs. Both groups were born during the spring and grew out during the summer. The summer of 1972 was hotter than 1971, and the quality of the ration fed was not as good as the previous year. Consequently, the ewe lambs in group two were less well developed than those in group one. This probably accounted for more group two ewes not mating.

The information for the different breed combinations for weight and age during their first year are given to supplement the data on reproduction presented in Table 3. It should be noted the weights and ages were similar for the group one ewes. In the group two comparisons breeding groups involving Finn were younger at breeding time than the other breeding groups yet mated as well or better.

The column presenting information on lambing assistance presents no striking results and suggests no particular problem for the ¼ Finn ewes. The high number of assists required by the ¼ Dorset X ¾ Rambouillet ewes in group one may be due to chance or it may not. They are the largest framed breeding group. In the second group, the

[1] The soybean meal was replaced by alfalfa hay when the lambs reached 50-60 pounds.

Table 3. Lambing Performance of the First and Second Groups of Ewes During Their First Year

Ewe Breeding	Number Avail.	Ewes Lambing No.	Ewes Lambing %	Number Lambs Born	Lambs Born Per Ewe Lambing	Lambs Born Per Ewe Availab
1st Group						
½Dx½R	26	19	73	20	1.05	0.77
¼Dx¾R	28	14	50	14	1.00	0.50
¼Fx¾R	0	0	0	0	0	0
¼Fx¼Dx½R	22	18	82	23	1.28	1.04
¼Fx½Dx¼R	23	21	91	23	1.10	1.00
2nd Group						
½Dx½R	24	11	46	13	1.18	0.54
¼Dx¾R	24	13	54	14	1.08	0.58
¼Fx¾R	37	17	46	18	1.06	0.49
¼Fx¼Dx½R	29	22	76	23	1.04	0.79
¼Fx½Dx¼R	23	16	70	79	1.19	0.83

ewes that were ½ Dorset had a bit more difficulty, but there were few problems considering that the ewes were all mated to blackfaced rams.

The results presented in Tables 3 and 4 are of greatest significance because it is in reproductive rate that the Finnsheep are supposed to excel. Table 3 presents the results obtained when the two groups of test ewes were mated at about seven months of age to lamb at about 12 months of age, and the lambing was in March and April. It should be noted that the group one ewes that were grown out better had a higher percent of the ewes lamb. They also produced a few more twins.

In comparing the breeding groups in group one, the two kinds of ewes that were ¼ Finn showed a higher percentage lambing and more lambs per ewe lambing for an overall big advantage in lambs born per ewe in the breeding flock. The Dorset X Rambouillet ewes were next and the ¼ Dorset X ¾ Rambouillet ewes were least productive probably due to the slower rate of maturity of the Rambouillet breeding. Among the group two ewes, the combinations containing ¼ Finn and the remainder Dorset and Rambouillet, although younger (Table 2), were more productive than either the ½ Dorset X ½ Rambouillet or the two groups that were ¾ Rambouillet. These data support the idea that the Finnsheep breeding combined with Dorset and Rambouillet breeding increases the fertility of ewes lambing at one year of age during the spring.

Table 4. Lambing Performance of the First Group of Ewes During Their Second Year

Ewe Breeding	Number[1] Avail.	Ewes Lambing No.	Ewes Lambing %	Number Lambs Born	Lambs Born Per Ewe Lambing	Lambs Born Per Ewe Available
½Dx½R	25+5	27	90	40	1.48	1.33
¼Dx¾R	28+7	29	83	48	1.66	1.37
¼Fx¾R	0	0	0	0	0	0
¼Fx¼Dx½R	21+5	25	96	38	1.52	1.46
¼Fx½Dx¼R	22+7	24	83	42	1.68	1.45

[1] The second number is the number of fall born ewes in each group lambing first at about 18 months of age.

Table 4 presents the reproductive performance of the group one ewes when lambing at two years of age in the spring. (Included in each group were 5-7 ewes that were fall born, bred first at 12-13 months of age and lambed first at about 18 months of age.) The mating season lasted for about two months, and it is not known why a higher percent of the ewes did not lamb. The lambing rate (lambs born per ewe lambing) should be a good estimate since there were a fair number of ewes lambing of each breed group. The last column given the lambs born per ewe in the breeding flock is perhaps the best measure of overall reproductive performance. The two kinds of ewes that are part Finn are a bit higher, but the difference is not as great as one might expect. The entire flock (both groups one and two) have been mated to lamb in January and February of 1974. The results from that lambing should give better estimates of the results to expect from these breeds when lambing during the winter.

Lamb Growth Performance

Group one has lambed in the spring of 1972 and 1973. Group two has lambed in the spring of 1973. Their lambs have been evaluated for growth performance by comparing them for birth weight, average daily gain to 70 days of age, 70-day weight, and average daily gain from 70 days to market (Tables 5 and 6).

Since only a small number of twin lambs were born to the two groups of ewes in their first year, Table 5 compares only single lambs. Table 6 also compares single lambs; but since a larger number of twins were born to group one during their second year, twin lambs are also compared.

The lambs born from the ¼ Finn ewes during their first year were

Table 5. Birth Weights and Growth Performance of Single Lambs Produced From the 1st and 2nd Groups of Ewes During Their First Year[1]

Dam Breeding	Number Single Lambs Born	Birth Weight	A.D.G. to 70 Days	70-Day Weight	A.D.G. from 70 Days to Market
1st Group (Lambed 1972)					
½Dx½R	18	10.5	0.60	52.8	0.38
¼Dx¾R	14	11.2	0.65	57.1	0.41
¼Fx¾R	0	0	0	0	0
¼Fx¼Dx½R	13	9.7	0.66	56.3	0.38
¼Fx½Dx¼R	18	9.6	0.64	54.1	0.38
2nd Group (Lambed 1973)					
½Dx½R	9	10.0	0.73	61.4	0.43
¼Dx¾R	12	10.2	0.70	58.6	0.48
¼Fx¾R	16	9.7	0.62	52.8	0.47
¼Fx¼Dx½R	21	9.7	0.67	56.1	0.50
¼Fx½Dx¼R	14	9.0	0.67	55.9	0.54

[1] All lambs were sired by a blackfaced ram (either Suffolk or Hampshire).

lighter at birth than the lambs born from the Dorset X Rambouillet ewes for both groups (Table 5). The ¼ Dorset X ¾ Rambouillet ewes gave birth to the heaviest lambs (11.2 and 10.2 pounds), and the ¼ Finn X ¼ Rambouillet X ½ Dorset ewes gave birth to the lightest lambs (9.6 and 9.0 pounds) in both groups during their first year.

All lambs produced from the group one ewes in 1972 compared favorably on A.D.G. to 70 days, 70-day weight, and A.D.G. from 70 days to market. It should be noted that the poor A.D.G. from 70 days to market for these lambs in 1972 was due to a hot summer and poor alfalfa for the creep ration.

The lambs produced from the group two ¼ Finn ewes in 1973 were poorer in A.D.G. to 70 days and lighter at 70 days of age than were the lambs produced from the Dorset X Rambouillet ewes (Table 5). However, the lambs from the ¼ Finn ewes gained better or similar to the lambs from the Dorset X Rambouillet ewes from 70 days to market. It would, however, be premature to draw any definite conclusions from these data since a relatively small number of lambs have been used to generate these data.

Table 6. Birth Weights and Growth Performance of Single and Twin Lambs Produced From the 1st Group of Ewes in Their Second Year[1]

Dam Breeding	Number Lambs Born	Birth Weight	A.D.G. to 70 Days	70-Day Weight	A.D.G. from 70 Days to Market
Twins					
½Dx½R	25[3]	7.8	0.58	48.8	0.53
¼Dx¾R	38	9.2	0.61	51.6	0.55
¼Fx¾R	0	0	0	0	0
¼Fx¼Dx½R	25[2]	8.0	0.59	50.2	0.53
¼Fx½Dx¼R	35[3]	7.8	0.57	47.8	0.54
Singles					
½Dx½R	15	10.3	0.70	59.8	0.54
¼Dx¾R	10	11.5	0.76	65.0	0.54
¼Fx¾R	0	0	0	0	0
¼Fx¼Dx½R	12	10.5	0.78	65.1	0.68
¼Fx½Dx¼R	7	9.5	0.74	61.1	0.57

[1] All lambs were sired by a blackfaced ram (either Suffolk or Hampshire).
[2] One twin lamb was stillborn.
[3] Includes one set of triplets.

The birth weights of lambs produced from the second lambing of the group one ewes in 1973 were again greatest for the lambs produced from the ¼ Dorset X ¾ Rambouillet (twins — 7.8 and singles — 9.5 pounds) (Table 6). Growth performance of the lambs as measured by A.D.G. to 70 days, 70-day weight, and A.D.G. from 70 days to market was similar for each of the crosses.

Future Plans

These ewes are now bred to lamb for their second or third times in January and February of 1974. Those data should give the best estimates to date of the fertility of these breeding groups under these conditions. The fleeces from the breed groups will also be carefully characterized with the fleeces produced during the spring of 1974.

Starting in May the ewes will be exposed to rams for about 50 days to determine their willingness to mate during spring and the conception rate of the various groups during spring breeding.