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## **Lifetime Production Performance by Suffolk x Rambouillet Ewes in Northwestern Kansas**

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In late August, 1979, 50 Suffolk x Rambouillet ewe lambs, 8-9 months old, arrived at the Colby station from Idaho and were immediately bred to lamb the following spring. After lambing in February and March of 1980, when they were 13-14 months old, the ewes were bred to lamb again in the fall of 1980 and each subsequent fall through 1985. In all, the flock produced seven lamb crops in its productive lifetime. This report discusses the production performance of the flock. The data are summarized in Table 1.

### **First Lamb Crop**

Two ewes died before the first lamb crop was born, so only 48 ewes were considered exposed to the rams. Then as the ewes began lambing, a problem, thought to be vibriosis but not confirmed, became apparent. Three ewes aborted five lambs before treatment with chloro-tetracycline solved the problem.

For the first lamb crop, 36 (75.0%) of the ewe lambs gave birth to 53 lambs for a 110.4% lamb crop. Sixteen (44.4%) of the 36 ewes produced multiple births. The 38 lambs weaned (50 +/- 3 days) weighed an average of 39.2 pounds and made average daily gains of 0.470 pound. Preweaning death loss was very high (28.3%), some of which could be attributed to the abortions mentioned above. Most of the other lamb

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deaths were probably the result of three main factors: a fairly high percentage of multiple births; a probable lack of milk production capacity of the young ewes; and wet weather during February and March, which caused some pneumonia.

Lambs born that spring carried over into the heat of summer and only 62.3% of them were marketed. The lambs averaged 96.5 pounds and had gained an average of 0.478 pound daily from weaning to market.

### **Second Lamb Crop**

After weaning their first lamb crop, the ewes were bred again in June, 1980, to lamb that fall. Again 48 ewes were exposed and this time 40 (83.3%) lambed. Only 6 (15.0%) of the ewes had multiple births, resulting in a 95.8% lamb crop (the smallest produced during the productive lifetime of this flock). However, of the second lamb crop and all subsequent ones, the breeding period was definitely out-of-season for most sheep and especially so for black-faced ewes.

Prewaning death losses again were very high at 19.6%, but were 8.7% lower than for the first lamb crop. Thirty-seven of the 46 lambs born were weaned at an average weight of 41.8 pounds. They showed an average daily gain of 0.591 pounds, compared with 0.470 pound for lambs of the first lamb crop.

Average daily gain from weaning to market was 0.757 pound, a marked improvement over the 0.478 pound for the first crop. Much of that improvement probably could be attributed to cool winter temperatures compared to the hot summer temperatures experienced by first-crop lambs during their postweaning period. Again, a low percentage (71.7) of lambs born were marketed. Enterotoxemia was suspected of causing the sudden deaths of many seemingly healthy and normal looking lambs.

### **Third Lamb Crop**

The third lamb crop was born in the fall of 1981; 39 of 47 ewes lambed, giving birth to 57 lambs for a 121.3% lamb crop. The conception rate (83.0%) was essentially the same as for the second lamb crop. However, lamb crop size increased by 25.5% over the previous lamb crop as the result of a 31.2% increase in ewes having multiple births.

Prewaning death losses were 12.3%, markedly less than for the first two lamb crops. Improved milk production and mothering experience probably were the main factors in this reduction.

Weaning and market weights and average daily gains of third-crop lambs were similar to those of second-crop lambs.

Through the first three lamb crops, two ewes died and one was culled because of poor milk production. After the third lamb crop, the ewes were culled more critically and seven were removed from the flock. Five were culled as non-lambers and two because of vaginal prolapses.

### **Fourth Lamb Crop**

Results of that culling process were immediately apparent when the fourth lamb crop was born in the fall of 1982. At that time, 39 of 40 ewes lambed, giving births to 56 lambs.

The conception rate (97.5%) was by far the best for the first four crops. The 140.0% lamb crop was also the largest for the first four lambings. Prewaning death losses declined to 10.7% the lowest for the first four lamb crops.

Weaning and market weights were heavier than the weights of lambs from previous crops. All lambs weaned through four crops averaged 42.2 pounds and gained an average of .590 pound per day from birth to weaning. Average market weight through four crops was 108.4 pounds, with an average daily gain of .702 pound from weaning to market.

#### **Fifth Lamb Crop**

The fifth lamb crop was born in the fall of 1983; 32 of 40 ewes lambled, giving birth to 49 lambs. The conception rate (80.0%) was the lowest since the flock's first lamb crop, when the ewes were still lambs. However, lowered conception rates were the rule for all ewe groups of the station flock that lambled in the fall of 1983. More ewes (46.9%) had multiple births than for any previous lamb crop resulting in a 122.5% lamb crop, the second largest for the five lambings.

Prewaning death losses (16.3%) were up 5.6% from the previous year. Average weaning weight (42.4 lb.) was down from the previous crop, but was still second highest of the five lambings. Average market weight (120.1 lb.) was higher than for any of the earlier lamb crops. The lambs reached that weight in fewer days after weaning than in previous years, as indicated by the .900 pound per day average daily gain. That was, and remains, the highest rate of gain for any group of lambs raised on the station for at least the last 12 - 15 years.

Before breeding for the sixth lamb crop, four more ewes left the flock. Three were culled because of udder problems and one died of a heart attack during shearing.

#### **Sixth Lamb Crop**

In the fall of 1984, 29 of 36 ewes lambled, giving a conception rate (80.6%) that was almost identical to the 1983 rate (the lowest since the first lambing in the spring of 1980). However, lower conception rates probably should be expected as ewes advance in age. After six lamb crops, the accumulative conception rate was 83.3%, probably not unreasonable for black-faced ewes breeding out-of-season. The 29 ewes that lambled produced 46 lambs for a 127.8% lamb crop, the second largest crop through six lambings.

Prewaning death losses were 13.0% and continued to be higher for this groups of ewes than for the experiment station flock as a whole.

The average weaning weight (36.7 lb.) was the lowest of the first six lamb crops. Lowered weaning weights could have been the result of a higher rate (55.2%) of multiple births than for any of the previous lamb crops. Also, milk production may decrease as ewes get older. Sixth-crop lambs gained 0.792 pound daily from weaning to birth.

### **Seventh Lamb Crop**

The seventh and final lamb crop was born in the fall of 1985. After the sixth lamb crop, four ewes were culled from the flock because they missed two consecutive opportunities to lamb. Two other ewes died, so only 30 ewes were exposed to rams for the seventh breeding.

Conception rate was again 80.0%, as it had been for the two previous lamb crops. The 24 ewes that lambled gave birth to 43 lambs or 1.79 lambs per ewe. Eighteen ewes (75.0%) had multiple births, resulting in a 143.3% lamb crop. In terms of percent lamb crop, number of lambs per ewe lambing, and percent multiple births, the seventh lamb crop (born when the ewes were nearing 7 years of age) was the most productive in the flock's history. This indicates that the most productive ewes did survive the culling processes of the previous years. Average weaning weight of seventh crop lambs was 39.0 pounds and average daily gain was 0.537 pound, both of which were slightly below the seven-crop average. Daily gain from weaning to market was 0.862 pound, second highest of all lamb crops.

### **Combined Data: Seven Lamb Crops**

**Conception Rate.** A summary of the data from seven lamb crops shows that 239 of 289 (82.7%) ewes exposed to rams conceived and lambled. Conception rate was lowest (75.0%) for the first lamb crop, when the ewes were 13 - 14 months old, and highest in the fall of 1982, when the ewes were approaching 4 years of age and were lambing for the fourth time. All other conception rates ranged from 80.0% to 83.3%. Such conception rates probably would not be acceptable to most sheep operations; however, for black-faced ewes breeding out-of-season, the rates probably are not unreasonable.

**Lambing Rate.** The 239 ewes that lambled during the flock lifetime gave birth to 350 lambs for a 121.1% accumulative lamb crop. Multiple births, including several sets of triplets, occurred in 44.4% of the lambings, bringing the average to 1.46 lambs born per ewe lambing. The ewes produced lamb crop highs of 140.0% at 4 years of age and 143.3% when they lambled the final time at 7 years of age. The first was based on a high conception rate and the latter on increased multiple births. Lambs born per ewe lambing generally increased as the ewes matured.

**Preweaning Deaths.** Preweaning death losses were 16.3% for the lifetime of this flock. The first two lamb crops suffered severe preweaning losses (28.3% and 19.6%, respectively). Though preweaning death losses were more moderate for subsequent lamb crops, they were always greater than losses for other station flocks. We do not have an explanation for that difference.

**Weaning Weight and Daily Gain.** Average weaning weight was 41.1 pounds for the 293 lambs weaned over all lamb crops. Preweaning average daily gain was .575 pound for the same lambs. Lambs of the fourth lamb crop, born in the fall of 1982, were the heaviest at weaning (46.8 lb.) and had the highest preweaning average daily gain (.688 lb.). The majority of lambs born to the ewes were sired by Suffolk rams. A

**Table 1. Production Performance of Idaho Suffolk x Rambouillet Crossbred Ewes**

| Item                        | Spring<br>1980 | Fall<br>1980 | Fall<br>1981 | Fall<br>1982 | Fall<br>1983 | Fall<br>1984 | Fall<br>1985 | Summary<br>7 Crops |
|-----------------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------|
| No. ewes exposed            | 48             | 48           | 47           | 40           | 40           | 36           | 30           | 289                |
| No. ewes lambled            | 36             | 40           | 39           | 39           | 32           | 29           | 24           | 239                |
| % ewes lambled              | 75.0           | 83.3         | 83.0         | 97.5         | 80.0         | 80.6         | 80.0         | 82.7               |
| No. lambs born              | 53             | 46           | 57           | 56           | 49           | 46           | 43           | 350                |
| % lamb crop                 | 110.4          | 95.8         | 121.3        | 140.0        | 122.5        | 127.8        | 143.3        | 121.1              |
| Lambs/ewe lambing           | 1.47           | 1.15         | 1.46         | 1.44         | 1.53         | 1.59         | 1.79         | 1.46               |
| Avg. birth weight (lb.)     | 10.7           | 11.4         | 11.4         | 12.3         | 11.7         | 10.7         | 11.5         | 11.2               |
| No. ewes-multiple births    | 16             | 6            | 18           | 17           | 15           | 16           | 18           | 106                |
| % ewes-multiple births      | 44.4           | 15.0         | 46.2         | 43.6         | 46.9         | 55.2         | 75.0         | 44.4               |
| No. lambs weaned            | 38             | 37           | 50           | 50           | 41           | 40           | 37           | 293                |
| % lambs born weaned         | 71.7           | 80.4         | 87.7         | 89.3         | 83.7         | 87.0         | 86.0         | 83.7               |
| Avg. weaning weight (lb.)   | 39.2           | 41.8         | 40.2         | 46.8         | 42.4         | 36.7         | 39.0         | 41.1               |
| ADG birth to weaning (lb.)  | 0.470          | 0.591        | 0.582        | 0.688        | 0.598        | 0.518        | 0.537        | 0.575              |
| No. lambs marketed          | 33             | 33           | 49           | 49           | 41           | 39           | 37           | 281                |
| % lambs born marketed       | 62.3           | 71.7         | 86.0         | 87.5         | 83.7         | 84.8         | 86.0         | 80.3               |
| Avg. market weight (lb.)    | 96.5           | 110.2        | 108.3        | 115.3        | 120.1        | 106.6        | 111.1        | 110.2              |
| ADG weaning to market (lb.) | 0.478          | 0.757        | 0.782        | 0.735        | 0.900        | 0.792        | 0.862        | 0.765              |

few were sired by Hampshire, Dorset, and Finn x Rambouillet rams in several different lamb crops.

**Lambs Marketed.** During the course of seven lamb crops, 12 lambs were lost between weaning and market, bringing the marketed lamb crop down to 80.3% of those born. Again, the first two lamb crops were the most seriously affected.

**Postweaning Daily Gain.** Weaning to market average daily gain was .765 pound for lambs of all seven lamb crops combined. Lambs of the first crop gained only .478 pound daily but all other lamb crops averaged at least .7 pound daily from weaning to market. Fifth-crop lambs, born in the fall of 1983, gained an even .9 pound per day from weaning to market. That was probably the highest rate of gain achieved by any group of lambs at Colby.

## Summary

In summary, the data from seven lamb crops indicate that at least 80% of Suffolk x Rambouillet crossbred ewes will breed to lamb in the fall months of October, November, and December. Even though lambing was out-of-season, many of the ewes did have multiple births, resulting in individual lamb crops of up to 143.3%

Prewaning and postweaning growth rates of the lambs, most sired by Suffolk rams, were excellent. Weaning took place at 50 days and all male lambs were left intact as rams.

The major criticism of this flock of ewes was the high preweaning death rate of lambs. The problem was especially se-

vere during the first two lamb crops and was magnified by an abortion outbreak that occurred early during the first lambing season.

After the seventh lamb crop, two ewes were sold as non-lambers and two died of unknown causes. When the project was terminated in 1986, 26 ewes remained in the flock. At that time, three ewes were sold as culls because of poor condition and 23 ewes were sold as still being potentially productive.

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