

PRODUCTIVITY OF SELECTED BREEDS AND CROSSES OF SHEEP

2. Lamb Production

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Most sheep breeding research in past years has centered around the use of breeds best adapted to range production. These breeds may or may not be well suited to the demands of modern day production units in farm flock areas.

This report is intended to inform sheepmen of research in progress at the Hettinger Experiment Station, where the suitability of several genetic types of white faced ewes for farm flocks is being tested.

Methods

Test ewes were produced by mating Columbia, Rambouillet, North Country Cheviot and Border Leicester rams to Rambouillet and Columbia grade ewes. Each genetic group consisted originally of approximately 32 ewes. This experiment will continue for the lifetime of the ewes.

Each group is randomly split and mated to either Hampshire or Suffolk rams to determine the suitability of these ram breeds as sires of market lambs. One half of each ewe group also is assigned to either an early lambing (February-March) or late (April-May) lambing group. Early born lambs were weaned at an average age of 90 days and finished for market in dry lot. Late born lambs were run with dams on pastures consisting of crested wheat grass, brome and native grasses. Late lambs were finished for market in dry lot on the same rations used for early born lambs.

Data have been collected on birth weights, weaning weights, type of birth, market weight and age at market. Detailed carcass data also are collected on all lambs produced. Carcass data for crossbred lambs will be published following analyses of the 1968, 1969, and 1970 carcass data.

Discussion

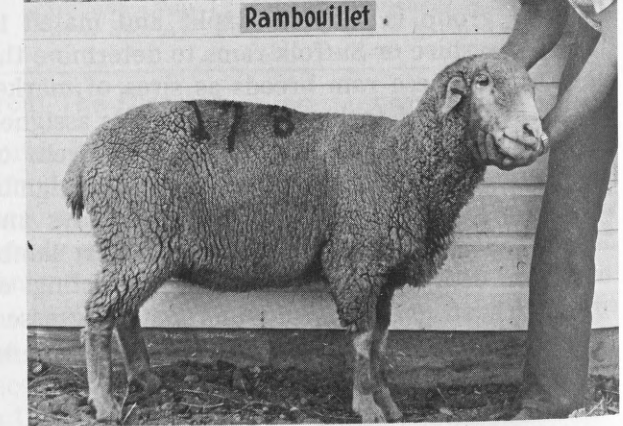
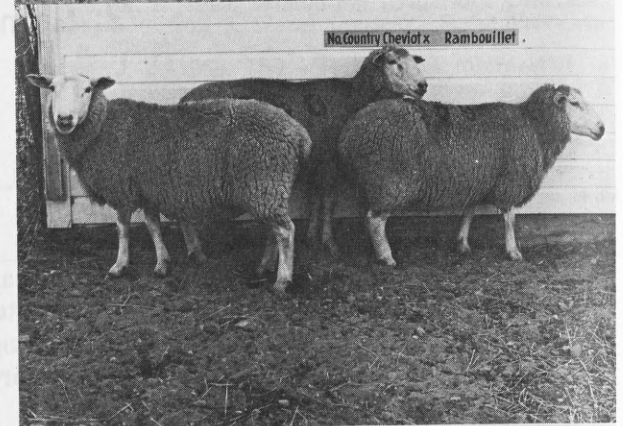
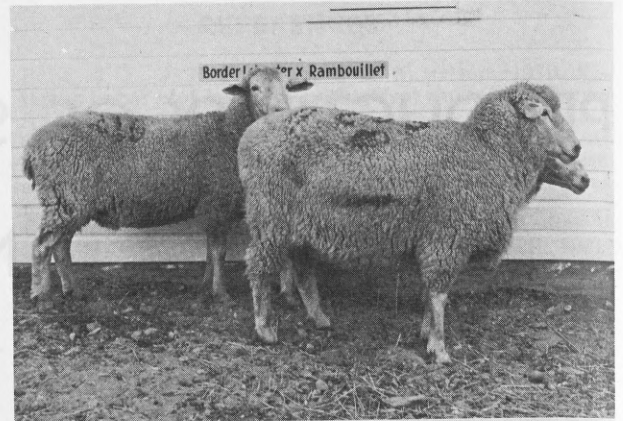
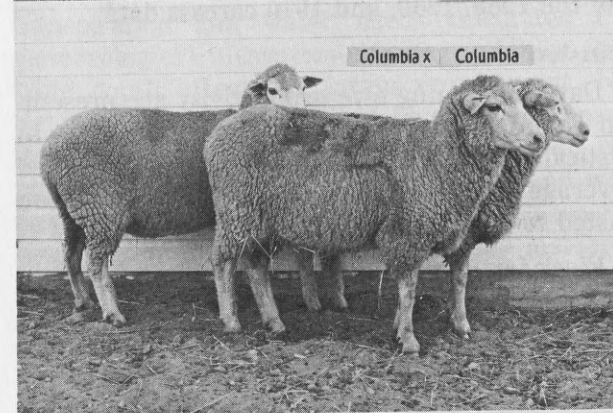
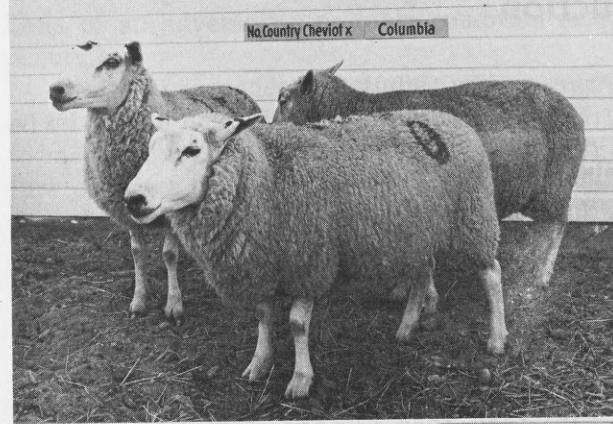
Data concerning ewe productivity are presented in Tables 1 and 2. No attempt has been made to statistically analyze these data which are presented as average figures. Ninety day weights have been adjusted to a single male lamb weight.

Flock fertility has been excellent for all groups under test. The entire group has lambed at a rate of 151.3 per cent, varying by groups from a high of 207.7 per cent to 106.3 per cent. Death losses of lambs from birth to weaning have been minimal, averaging 6.6 per cent.

Average weights for birth, weaning, market weight and market age are included for 1968 and 1969 only. All data for the 1970 lamb crop have not yet been collected.

Fertility levels for several crossbred ewe groups have been outstanding and are consistent from year to year to this date. Border Leicester sired ewes from Rambouillet dams have weaned 1.78 lambs per year, or 44.7 per cent more lambs than Rambouillet ewes and 41.5 per cent more than Columbia ewes. North Country Cheviot sired ewes from Rambouillet ewes have weaned lamb crops averaging 167.5 per cent to date. This represents an increase of 35 per cent above the Rambouillet ewes.

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This page of pictures shows the various crosses of ewes that produced the lambs used in the experiment reported in this article. The series of Columbia crosses are shown in the left column, while the series of Rambouillet crosses are shown in the right column. Summary production of the Columbia ewe crosses is reported in Table 1, and the summary production of the Rambouillet ewe crosses is reported in Table 2.

TABLE 1: SUMMARY PRODUCTION OF EWES

| BREED OF DAM | COLUMBIA | | | | | | | | | | | |
|-------------------------|------------------|-------|-------|-----------------------|-------|-------|----------|-------|-------|-------------|-------|-------|
| | Border Leicester | | | North Country Cheviot | | | Columbia | | | Rambouillet | | |
| BREED OF SIRE | 1968 | 1969 | 1970 | 1968 | 1969 | 1970 | 1968 | 1969 | 1970 | 1968 | 1969 | 1970 |
| LAMBING SEASON | | | | | | | | | | | | |
| No. Ewes Exposed | 16 | 28 | 28 | 16 | 30 | 28 | 15 | 26 | 21 | 16 | 30 | 29 |
| No. Lambs Born | 17 | 37 | 40 | 26 | 46 | 41 | 21 | 36 | 30 | 18 | 39 | 38 |
| % Lambs Born/Ewe Bred | 106.25 | 132.1 | 142.9 | 162.5 | 153.3 | 146.4 | 140.0 | 138.5 | 142.9 | 112.5 | 130.0 | 131.0 |
| No. Lambs Weaned | 17 | 36 | 38 | 24 | 43 | 38 | 19 | 34 | 30 | 17 | 37 | 38 |
| % Lambs Weaned/Ewe Bred | 106.25 | 128.6 | 135.7 | 150.0 | 143.3 | 135.7 | 126.7 | 130.8 | 142.9 | 106.15 | 123.3 | 131.0 |
| Average Birth Weight | 12.3 | 12.2 | | 11.9 | 11.2 | | 11.1 | 11.3 | | 12.7 | 12.0 | |
| Adjusted 90 Day Weight | 71.6 | 83.3 | | 73.0 | 71.8 | | 64.3 | 72.5 | | 70.5 | 72.9 | |
| Average Market Weight | 114.4 | 107.3 | | 114.1 | 110.4 | | 108.6 | 108.4 | | 113.5 | 110.6 | |
| Average Market Age | 178.5 | 154.3 | | 193.8 | 169.9 | | 196.6 | 161.6 | | 191.4 | 154.4 | |

Fertility levels for all ewes based on Rambouillet dams has averaged 1.51 lambs weaned per ewe mated as compared to 1.31 lambs for ewes based on Columbia dams. The productivity of purebred Columbia and Rambouillet ewes was not greatly different. These data suggest that Rambouillet ewes used in this experiment were superior in specific combining ability when used to produce crossbred ewes.

It will be noted that there are yearly differences in market ages of lambs because of an outbreak of coccidiosis in 1968.

Lamb production for Border Leicester sired crossbred ewes from Rambouillet ewes has been superior in nearly every category. Not only have these ewes produced the largest lamb crop, their lambs have weighed more at weaning and have reached market weight sooner. These data are a good indication of the mothering and milking ability of these crossbred ewes.

The data presented indicate that commercial sheep producers in North Dakota should strongly

consider the use of ewes of either Border Leicester or North Country Cheviot sired ewes, preferably from Rambouillet dams, if white faced commercial ewes are desired.

Perhaps the sheep industry in the United States should consider stratified production. Range operators of Rambouillet ewe bands could crossbreed their ewes to produce crossbred commercial ewes for farm flocks. Although this concept has not gained popularity in the United States, this method has been used with great success in the United Kingdom with both the Border Leicester and North Country Cheviot breeds. Such ewe lambs should bring premiums to commercial ewe producers and added profits to farm flock managers.

Summary

Progress report data have been presented concerning the productivity of ewes of selected breeds and crosses. Ewes from Rambouillet dams sired by Border Leicester or North Country Cheviot rams have continued to be outstanding in productivity.

TABLE 2: SUMMARY PRODUCTION OF EWES

| BREED OF DAM | RAMBOUILLET | | | | | | | | | | | |
|------------------------|------------------|-------|-------|-----------------------|-------|-------|----------|-------|-------|-------------|--------|--------|
| | Border Leicester | | | North Country Cheviot | | | Columbia | | | Rambouillet | | |
| BREED OF SIRE | 1968 | 1969 | 1970 | 1968 | 1969 | 1970 | 1968 | 1969 | 1970 | 1968 | 1969 | 1970 |
| LAMBING SEASON | | | | | | | | | | | | |
| No. Ewes Exposed | 16 | 26 | 25 | 16 | 31 | 27 | 16 | 28 | 26 | 16 | 32 | 31 |
| No. Lambs Born | 30 | 54 | 46 | 29 | 57 | 50 | 25 | 36 | 40 | 21 | 44 | 46 |
| % Lambs Born | 187.5 | 207.7 | 184.0 | 181.75 | 183.9 | 185.2 | 156.25 | 138.6 | 153.8 | 131.3 | 137.5 | 148.38 |
| No. Lambs Weaned | 28 | 46 | 45 | 26 | 52 | 46 | 21 | 34 | 36 | 21 | 42 | 42 |
| % Lambs Weaned | 175.0 | 176.9 | 180.0 | 162.5 | 167.7 | 170.4 | 131.25 | 121.4 | 138.5 | 131.3 | 131.25 | 135.5 |
| Average Birth Weight | 13.1 | 11.4 | | 11.0 | 10.8 | | 11.6 | 12.1 | | 13.0 | 12.2 | |
| Adjusted 90 Day Weight | 76.1 | 78.6 | | 65.1 | 70.3 | | 68.8 | 75.1 | | 72.4 | 75.9 | |
| Average Market Weight | 114.2 | 108.9 | | 110.7 | 107.5 | | 110.3 | 108.6 | | 113.8 | 109.4 | |
| Average Market Age | 181.2 | 157.0 | | 197.0 | 171.3 | | 195.5 | 158.4 | | 188.4 | 157.8 | |