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LAMB AND WOOL PRODUCTION AS INFLUENCED BY BREED OF EWE AND MANAGEMENT SYSTEM (Progress Report)

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Summary

Lifetime production data are being collected to evaluate lifetime performance of Finn-Dorset x Targhee (FDT) ewes compared to straightbred Targhee (T) ewes under two management systems, range and farm flock. Preliminary results for the 1990 production year are presented. T ewes produced approximately 2 lb more wool of one to two spinning counts higher grade than FDT ewes. FDT ewes, on the other hand, produced more lambs and more total pounds of lamb per ewe exposed than T ewes in the farm flock. In the range flock, total pounds of lamb weaned per ewe were similar for both breed groups. Number and pounds of lamb weaned favored the range management system. Since data reported are for only one production year, additional data are needed before analyses are completed and conclusions drawn.

(Key Words: Sheep, Lamb, Wool, Lifetime production, Breed, Management system.)

Introduction

The number of lambs marketed per ewe per year has been shown in a number of studies to be the most important single factor in determining total productivity of the ewe flock. Crossbred ewes are reported to have higher reproductive performance and superior maternal characteristics. Combining ewe breeds that have specific desirable strengths should result in a more productive crossbred ewe. Three breeds were chosen for their respective breed strengths: the Dorset for its long breeding season and milking ability, the Finn for its prolificacy, and the Targhee for its hardiness and wool quality. The combination used in this study resulted in

ewes that are 1/4 Finn-1/4 Dorset x 1/2 Targhee (FDT). This combination results in a white-faced ewe of moderate frame size with a medium quality fleece. This study was designed to evaluate lifetime productivity of the FDT ewe compared to the straightbred Targhee ewe under range and farm flock conditions found in South Dakota.

Experimental Procedure

April-born Targhee (T) and 1/4 Finn-1/4 Dorset x 1/2 Targhee (FDT) ewe lambs born in 1984 through 1987 at the Antelope Range Livestock Research Station, Buffalo, South Dakota, are the ewes evaluated in this study. These lambs grazed with their dams on native range until weaning in August when they were moved to the Sheep Research and Teaching Unit at Brookings. Upon arrival, they were started on a growing ration, shorn and treated for internal and external parasites. The growing ration was composed of approximately 50% alfalfa hay and 50% concentrate (mostly corn). The lambs remained on this ration until approximately 1 year of age, at which time they were randomly allotted within breed groups to either the farm or range management system. Each year, approximately June 1, ewes allotted to the range system were returned to the Antelope Range Livestock Station where they are maintained for subsequent lifetime production.

Management practices common to both systems include use of Hampshire rams as terminal sires, a 35-day breeding season, shearing 30 to 60 days prelambling and shed lambing with lambing jugs. Routine management practices at lambing include ear tagging, dipping of the navel, docking and assistance in receiving colostrum from ewes. Ewes are culled from

tagging, dipping of the navel, docking and assistance in receiving colostrum from ewes. Ewes are culled from the flock as a result of failure to lamb in two consecutive opportunities or for severe reproductive problems such as prolapse or damaged udders. Usually, no ewe is allowed to nurse more than two lambs. Lambs in excess of two and lambs that appeared to be doing poorly in the opinion of the shepherd were classified as "bums" and sold. Credit is given in the lambing data for these lambs, but they are excluded from weaning data.

Management practices at the Antelope (range) location include late fall breeding beginning in November, reliance on grazing and limited feed supplementation starting 2 to 3 weeks before breeding through gestation, spring lambing and summer grazing of ewe and lamb pairs. At lambing, ewe and lamb pairs are given access to housing for 2 to 5 days. Ewes and lambs are grouped in small mixing pens for 1 to 3 days and then returned to native range and supplemented according to range conditions. Shelter is available for storm protection for approximately 3 weeks following birth. Male lambs are castrated and no lambs receive creep feed.

The farm flock is maintained at the Brookings Sheep Research unit. The breeding season begins in October and is preceded by 2 weeks of flushing. Lambing practices consistent with typical farm flock procedures include use of drop pens for these ewes close to lambing, individual lambing pens after lambing and grouping pens when the lambs are 2 to 3 days old. Male lambs were castrated in 1990. Lambs have access to creep ration shortly after birth and are switched gradually to a grower ration prior to weaning at approximately 65 days.

Results

Preliminary results for the 1990 production year are shown in Table 1. Ewes were 3 to 6 years of age at lambing in 1990. The percentage of ewes exposed

that lambled was higher in the range flock (93%) compared to the farm flock (82%). Part of this difference can be attributed to a higher number of ewes lost from breeding to lambing in the farm flock as a result of ketosis (pregnancy disease) prior to lambing. FDT ewes continue to drop more lambs per ewe lambing than straightbred T ewes. However, the difference may be narrowing as the ewes get older. Farm flock ewes of both breed groups had a higher lambing rate than ewes in the range flock. The number of lambs weaned per ewe lambing was higher for FDT than T ewes in the farm flock but not in the range flock. Ewes were not allowed to raise more than two lambs which may put a limit on the more productive ewes. Lambs in excess of two and lambs that appeared to be doing poorly, as determined by the shepherd, were classified as "bums" and sold. Although the lambing rate was higher in farm flock ewes, this management practice resulted in fewer lambs weaned per ewe than for the range flock. As a result, the number of lambs weaned per ewe lambing was lower in the farm flock. This was also reflected in the weight of lamb weaned per ewe exposed or lambing with range ewes exceeding farm flock ewes. Grease fleece weight favored T ewes by 2 to 2.5 lb with a slight advantage in wool weights in favor of the farm flock ewes. Laboratory analyses microned the T wool as 60's and 58's with 54's and 56's for the FDT ewes for range and farm flock ewes, respectively. Clean yield favors the crossbred ewes in both systems. Thus, if sold on a clean basis, the price narrows. The price differential between breed groups on a grease basis was \$.05 for the farm flock and \$.02 per pound for the range flock. Thus, the major advantage in wool for the Targhee ewes is the heavier shearing weight. If prices are known, or assumed, for wool and lamb, these data provide a basis for economic comparison of the trade off of lamb production vs wool production of using FDT rather than T ewes.

Lifetime production data will be summarized on these ewes as it becomes available. Final conclusions await proper statistical analyses of these data.

TABLE 1. LAMBING PERFORMANCE AND WOOL PRODUCTION OF TARGHEE
AND FINN-DORSET X TARGHEE EWES - 1990 LAMBING

Item	Brookings Farm Flock		Antelope Range Flock	
	Breed of ewe			
	Targhee	Finn-Dorset x Targhee	Targhee	Finn-Dorset x Targhee
No. ewes exposed	69	188	82	182
No. ewes lambing	52	158	76	170
Ewes lost, breeding to lambing	5	10	5	4
Percentage lambing (EL/EE)	75.4	84.0	93.0	93.0
Lambs born/ewe exposed	1.64	1.94	1.61	1.85
Lambs born/ewe lambing	2.17	2.30	1.74	1.98
Lambs weaned/ewe exposed	.71	1.05	1.41	1.39
Lambs weaned/ewe lambing	.94	1.25	1.53	1.49
Bum lambs sold/ewe lambing	.46	.48	.13	.21
Average weaning wt (lb)	57.3	59.1	66.3	61.6
Wt weaned/ewe exposed (lb)	40.7	61.9	89.7	88.7
Wt weaned/ewe lambing (lb)	54.0	73.7	96.8	94.9
Grease fleece wt (lb)	10.75	8.71	10.2	7.30
Spinning count (micron)	58 (25.36)	56 (27.52)	60 (24.66)	54 (28.37)
Clean wool fibers present (%)	56.7	59.5	56.0	63.5