1985

Effects of Breed of Ewe and Management System on the Production of Lamb and Wool 5. Effect of Lambing at 12-14 Months on Cumulative Lifetime Production

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EFFECTS OF BREED OF EWE AND MANAGEMENT SYSTEM ON THE PRODUCTION OF LAMB AND WOOL

5. EFFECT OF LAMBING AT 12-14 MONTHS ON CUMULATIVE LIFETIME PRODUCTION

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SHEEP 85-10

Summary

Data from Targhee, Suffolk x Targhee and Finnsheep x Targhee ewes which had completed a lifetime production study were used to determine the effect of lambing at 12 to 14 months on cumulative production. Ewes that lambed at 1 year of age gave birth to and weaned more lambs as well as gave birth to and weaned more pounds of lamb on a cumulative basis than ewes that failed to lamb at 1 year of age. Wool production was similar for the two groups of ewes. Ewes that produced a lamb at 1 year of age were more productive than those ewes that failed to lamb, even if the first year's production was not included.

(Key Words: Sheep, Lamb, Wool, Breeds, Ewe Lamb Production, Lifetime Production).

Introduction

Research on the practice of breeding ewe lambs to lamb at 1 year of age began in the 1970's. Since that time, research has continued on the long- and short-term effects of breeding ewe lambs. The value of those lambs produced the first year must be weighed against the possible detrimental effects on lifetime production. Breeding ewes as lambs may check their growth and development, even if only temporarily. Most research has indicated that no adverse lifetime production effects would result from the breeding of ewe lambs. The long-term effect of early breeding may differ between breeds. Studies have indicated that ewes that were in estrus but not bred as ewe lambs were more productive their second year and on a cumulative lifetime basis. The question remains that, if ewe lambs that have the ability to lamb at 1 year of age are more productive in their lifetime, is it simply due to that first year's production or are those ewes indeed more productive?

Materials and Methods

A complete discussion of the experimental flock development, along with yearly and cumulative production, can be found in parts 1, 2, 3, and 4 of this series of articles (SHEEP 85-6, 85-7, 85-8, and 85-9). At the conclusion of the study, the cumulative production was separated between ewes lambed at 1 year of age and those that failed to lamb until

Prepared for Sheep Day, June 6, 1985.

they were 2. Because of the practice of culling those ewes which failed to lamb at two consecutive opportunities, only ewes remaining in the study 6 years were included. Production was evaluated using least-squares analysis of variance with breed, management system and ability to lamb at 1 year of age (table 1) included as main effects.

A total of 194 ewes (46%) of the original experimental flock remained in the study for 6 years. Of those ewes remaining, 69 did not lamb at 1 year of age and 125 did.

A second analysis was run where lamb production from the first year was subtracted from the 6-year cumulative results. This production (net production) would evaluate the differences in production excluding production from lambing at 12 to 14 months. This report evaluates the effect of lambing vs no lambing at 1 year on cumulative lamb and wool production.

Results and Discussion

For the lamb production traits tested, Targhee and Suffolk x Targhee ewes that lambed at 1 year of age had greater cumulative production ($P<.05$) than ewes that failed to lamb at 1 year of age. Traits tested included number born, number weaned, pounds born and pounds weaned. Targhee and Suffolk x Targhee ewes that lambed at 1 year of age weaned 19.7% and 20.2% more pounds of lamb than those ewes that failed to lamb at 1 year of age, respectively. Finnsheep x Targhee ewes that lambed at 1 year of age gave birth to more lambs, weaned more lambs and gave birth to more pounds of lamb ($P<.05$) than ewes failing to lamb at 1 year of age. Lambing at 1 year of age did not have a detrimental effect on the cumulative production of wool.

Least-squares means and standard errors for net production of lamb and wool are found in table 2. Based on net production (cumulative production after 6 years minus first year production), ewes that lambed at 1 year of age gave birth to and weaned more lambs as well as weaned more pounds of lamb than ewes who failed to lamb at 1 year of age ($P<.05$). Our data would indicate that producers could expect a net increase in pounds of weaned lamb from those ewes that lambed as ewe lambs (355 vs 394 lb.). The net production of weaned lambs by those ewes lambing as a lamb represents an increase of 11%. It should be noted that having a lamb at 1 year of age did not reduce the net production of wool.

Based on these results, producers may be able to increase lamb production by selecting those yearling ewes who did produce a lamb at 12 to 14 months. If first year production is going to be used as a selection criteria, every effort should be made to insure that the ewe lambs are of sufficient weight and age to reach puberty at 7 to 8 months.

TABLE 1. LEAST-SQUARES MEANS AND STANDARD ERRORS FOR CUMULATIVE PRODUCTION OF LAMB AND WOOL.

	Performance at one year of age	
	Failed to Lamb	Lambed
Number born	7.74 ± .251[a]	9.61 ± .182[b]
Targhee	6.61 ± .298[a]	8.33 ± .386[b]
Suffolk x Targhee	6.78 ± .438[a]	8.55 ± .268[b]
Finnsheep x Targhee	9.83 ± .536[a]	11.95 ± .279[b]
Number Weaned	6.04 ± .251[a]	7.47 ± .182[b]
Targhee	5.59 ± .297[a]	6.91 ± .387[b]
Suffolk x Targhee	5.11 ± .438[a]	6.67 ± .268[b]
Finsheep x Targhee	7.42 ± .536[a]	8.87 ± .279[b]
Pounds Born	82.7 ± 2.65[a]	100.4 ± 1.93[b]
Targhee	81.2 ± 3.14[a]	98.2 ± 4.08[b]
Suffolk x Targhee	73.0 ± 4.62[a]	93.6 ± 2.83[b]
Finnsheep x Targhee	93.9 ± 5.66[a]	109.5 ± 2.95[b]
Pounds Weaned	355 ± 15.0[a]	430 ± 10.9[b]
Targhee	331 ± 17.8[a]	412 ± 23.1[b]
Suffolk x Targhee	324 ± 26.2[a]	406 ± 16.0[b]
Finnsheep x Targhee	410 ± 32.0	473 ± 16.7
Pounds of Wool	53.1 ± 1.18	52.7 ± 0.86
Targhee	56.6 ± 1.40	57.0 ± 1.82
Suffolk x Targhee	49.9 ± 2.06	53.4 ± 1.26
Finnsheep x Targhee	52.8 ± 2.52	47.8 ± 1.31

[ab]Means in the same row with unlike superscripts differ ($P<.05$).

TABLE 2. LEAST-SQUARES MEANS AND STANDARD ERRORS FOR NET CUMULATIVE PRODUCTION OF LAMB AND WOOL.

	Performance at one year of age	
	Failed to lamb	Lambed
Number born	7.74 ± .240[a]	8.35 ± .174[b]
Targhee	6.61 ± .284	7.33 ± .370
Suffolk x Targhee	6.78 ± .418	7.34 ± .256
Finnsheep x Targhee	9.83 ± .512	10.4 ± .257
Number Weaned	6.04 ± .239[a]	6.70 ± .174[b]
Targhee	5.58 ± .283	6.35 ± .368
Suffolk x Targhee	5.11 ± .417	5.96 ± .255
Finnsheep x Targhee	7.42 ± .510	7.80 ± .266
Pounds Born	82.7 ± 2.54	87.6 ± 1.85
Targhee	81.2 ± 3.01	86.6 ± 3.92
Suffolk x Targhee	73.0 ± 4.43	80.7 ± 2.72
Finnsheep x Targhee	93.9 ± 5.43	95.6 ± 2.83
Pounds Weaned	355 ± 14.8[a]	394 ± 10.8[b]
Targhee	331 ± 17.5	386 ± 22.8
Suffolk x Targhee	324 ± 25.8	373 ± 15.8
Finnsheep x Targhee	410 ± 31.6	422 ± 16.4
Pounds of Wool	45.1 ± 1.09	45.3 ± 0.81
Targhee	48.0 ± 1.29	49.4 ± 1.74
Suffolk x Targhee	42.2 ± 1.90	45.8 ± 1.16
Finnsheep x Targhee	45.1 ± 2.32	40.6 ± 1.21

[ab]Means in the same row with unlike superscripts differ (P<.05).