1999

A Comparison of Fall vs Spring Lambing Performance of Hampshire and Columbia Ewes (Progress Report)

A. L. Slyter
South Dakota State University

Chad Miller

Rud Wasson

A COMPARISON OF FALL VS SPRING LAMBING PERFORMANCE OF HAMPSHIRE AND COLUMBIA EWES (PROGRESS REPORT)

A.L. Slyter, Chad Miller and Rud Wasson
Department of Animal & Range Sciences

Sheep 99-2

SUMMARY

Reproductive performance is reported for purebred Hampshire and Columbia flocks selected for Sept-Oct lambing. Results are shown starting with fall lambing in 1991 through the spring of 1999. Ewes are maintained as separate fall and spring flocks on a once a year lambing program. All replacement ewes come from their respective flock. Fall lambing success continues to lag behind the contemporary spring flocks. Selection for fertility and prolificacy will be continued in these flocks.

INTRODUCTION

Seasonality of lamb production continues to be a major hurdle for the sheep industry. The lack of a continuous supply of fresh lamb impacts both the processing and retail segments of the industry. The seasonal fluctuation in supply and quality results in sporadic buying patterns by consumers and ultimately less shelf space and therefore less product in the meat case. Often lamb cuts are not available in retail outlets or only on a seasonal basis making sustained consumption levels difficult. In many cases seasonal production also results in inefficient use of facilities, labor and management for the producer. This study was initiated to evaluate the effectiveness of selection for fall lambing in a population of purebred Hampshire and Columbia sheep.

EXPERIMENTAL PROCEDURE

Starting in 1989 purebred Hampshire and Columbia ewes from the spring lambing flock were exposed under various scenarios for fall lambing. Those ewes that conceived for fall lambing were moved permanently to the fall lambing flock. They remained in the fall flock unless they were culled for missing two consecutive lambings, normal culling criteria or death. A more detailed description of the early phases of this study is included in the 1995 Sheep Day Report (Sheep 95-1). Subsequent to 1993, only fall born ewe lambs have been retained as replacements. Rams used as sires have been primarily fall born. Every effort was made to select for multiple birth replacements.

Breeding management included 2 weeks of exposure to teaser rams starting April 1 followed by exposure to intact semen tested rams for 35 days. Ewes were on a flushing ration of ½ to ¾ pound corn for a minimum of 4 weeks starting when the teaser rams were introduced. Information is provided on spring lambing ewes that were managed under similar conditions as controls for this study. Nutritional requirements were met using a variety of feeds including silage, pasture, hay and concentrates based on current availability and price.

RESULTS AND DISCUSSION

Lambing performance of mature purebred ewes is shown in Table 1 starting with the fall of 1991 through the spring of 1999. Sixty-four percent of the Columbia ewes exposed for fall 1998 lambed compared to 73% of their spring contemporaries. Spring lambing ewes dropped ≅.5 more lambs per ewe lambing than fall lambing Columbias. The fall success rate was lower than that observed for 1994 (77%) and 1996 (81%), but still improved from the earlier years of the study. Fall lambing success for mature Hampshire ewes (46%) was considerably less than the preceding 4 years. However, the differential in the number of lambs born per ewe lambing between the fall and spring groups was smaller than for the Columbia flocks. The number of ewes exposed for fall lambing was smaller for both breeds as a result of management error, which resulted in loss of

Prepared for Sheep Day, June 10, 1999

what may have been the more productive ewes from the fall flocks.

Table 2 shows the lambing success for Hampshire and Columbia ewe lambs exposed for fall lambing. Only 2 of 14 Columbia and none of 19 Hampshire ewe lambs, lambed in the September-October lambing period. Body weight and condition scores indicate that they were of adequate size and condition to conceive if exposed during the normal breeding season. Extended light treatment was ineffective in stimulating reproduction in these animals. This is in contrast to a 45% success rate for crossbred ewe lambs managed similarly (see article Sheep 99-1). Continued selection with the possibility of genetic marker assistance is planned to speed the rate of progress.

Table 1. Lambing performance of purebred ewes[a] – fall vs spring

	Sept-Oct			Feb-Mar		
Breed of Ewe[a] /Year	No. Exposed	Percent Lambing	Lambs born per ewe lambing	No. exposed	Percent lambing	Lambs born per ewe lambing
Columbia						
1991-92	43	37.2	1.00	57	84.2	1.70
1992-93	45	43.3	1.33	63	82.5	1.60
1993-94	25	44.0	1.09	38	84.2	1.69
1994-95	43	76.7	1.09	48	87.5	1.64
1995-96	50	60.0	1.47	56	48.2	1.81
1996-97	36	80.6	1.17	70	68.6	1.71
1997-98	51	52.9	1.26	75	88.0	1.59
1998-99	36	63.9	1.35	86	73.3	1.83
Hampshire						
1991-92	22	0.0	0.0	85	92.9	1.90
1992-93	24	29.2	1.71	53	81.1	1.79
1993-94	45	40.0	1.44	51	92.2	1.74
1994-95	66	57.6	1.29	62	85.5	1.77
1995-96	64	73.4	1.55	65	93.8	1.86
1996-97	62	67.7	1.38	56	89.3	1.88
1997-98	58	60.0	1.54	73	83.6	1.59
1998-99	52	46.2	1.46	92	89.1	1.61

[a] Ewes 24 months of age or older at lambing time.

Table 2. September lambing performance of purebred ewe lambs

Year	No. Exposed	Pre-breeding wt., lb. (C.S. [a])	No. Lambing	Percent Lambing	Lambs born per ewe lambing
			Columbia[b]		
1993	4		0	–	–
1994	17		0	–	–
1995[c]	11		6	54.5	1.00
1996[cd]	19	140 (3.3)	1	5.3	1.00
1997[c]	14	143 (3.0)	0	–	–
1998[c]	14	150 (3.6)	2	14.3	1.00
			Hampshire[b]		
1993	20		7	35.0	1.00
1994	16		1	6.3	1.00
1995[c]	21		5	23.8	1.40
1996[cd]	17	159 (3.2)	0	–	–
1997[c]	10	140 (3.1)	0	–	–
1998[c]	19	165 (3.7)	0	–	–

[a]C.S. = condition score; 1 = very thin, 5 = very fat.
[b]Fall born; September-October.
[c]Light treated, 18 h light:6 h dark December 1 to February 10.
[d]Exposed with mature ewe group.