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Induction of Lambing at Weekly Intervals

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Summary

Lambing results were analyzed for 976 ewes lambing in 1975-1980. The effectiveness of flumethasone given on day 138 through 146 of gestation to group lambing was evaluated. Of the flumethasone-treated ewes, 72.6% lambed within 72 hr of treatment compared to 19.7% for control ewes. Comparing once weekly treatments on day 138 through 144 to treatment on day 140 through 146, 70.2% vs 79.2% lambed within the 72-hr response period, respectively. The average interval for those that lambed within 72 hr was 49.2 hr for treated and 45.5 hr for control ewes. This management technique provides a method to group a major portion of lambing in a projected time period at weekly intervals.

(Key Words: Flumethasone, Induced Lambing, Ewe Reproduction).

Introduction

Lambing season is the time in the sheep production year which demands the largest input of labor. Due to problems associated with the birth process, it is also one of the most critical times. By controlling the time of parturition, producers are better able to schedule labor and facilities more effectively. Ewes induced to lamb on specified days allow for more uniform groups of lambs for management practices. Flumethasone, a glucocorticoid, will induce parturition in ewes when administered late in gestation. The objective of this study was to determine the optimum range of days for once per week treatment for practical application of a grouped lambing program.

Materials and Methods

Correct breeding dates were determined for 967 purebred and crossbred ewes in 1974 through 1979 using dye-colored marking paint on the lower brisket and chest area of all rams. Breeding dates were considered correct if the ewe lambed in a period ranging from 138 to 158 days postmating. Purebred ewes were Hampshire and Columbia. Crossbred ewes were of Targhee, Suffolk and Finnsheep breeds and(or) various combinations thereof.

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On each Wednesday during the lambing seasons of 1975 through 1978, ewes on or between days 138 and 144 after breeding were visually examined for verification of pregnancy and randomly assigned to flumethasone[1] or control treatments. During the 1979 and 1980 lambing seasons, treatment days were shifted to day 140 through 146 of gestation. Treatments were given im in a 4-cc volume Wednesday mornings between 0800 and 0930 hours. Flumethasone treatment was 7 mg and the control was physiological saline for years 1975 through 1977 or no injection for years 1978 through 1980. All ewes, injected or uninjected, were individually caught and weighed on their respective treatment date in an attempt to equalize handling stress.

Lambing checks were maintained at a maximum of 4-hr intervals. Data recorded at lambing were time of lambing, lambing difficulty, number, sex and birth weight of lambs, ewe milking ability, and occurrence of retained placentas. Hours to lambing post-treatment were calculated. Preliminary analysis revealed lambing difficulty, incidence of retained placenta, and milking ability were not affected by treatment and therefore are not discussed in this report.

Results

Mean interval from treatment to parturition was shorter ($P<.01$) for treated ewes (80.6 hr) than for control ewes (156.7 hr). Figure 1 shows the accumulative percentage of ewes lambing by hours post-treatment. Less than 5% of the ewes had lambed by 24-hr postinjection (treated and control). Within 72 hr of injection, 72.6% of the flumethasone-treated ewes lambed compared to 19.7% of the control ewes (table 1). The mean interval treatment to lambing for ewes lambing within 72 hr was 49.2 vs 45.5 hr for flumethasone and control ewes, respectively. The percentage of ewes responding within 72-hr postinjection increased as day of gestation when injected increased. Hours to lambing decreased with advancing day of treatment (table 1). In an effort to determine the most desirable 7-day period for treatment, the percentage responding was grouped by treatment on day 138 to 144 vs day 140 to 146 (table 2). Nine percent more flumethasone-treated ewes lambed within 72 hr with the latter treatment schedule compared to 6% more for the controls. Looking at the data in table 1, it is evident that, although 32% and 50% of the control ewes treated on day 145 and 146 lambed within 72 hr, flumethasone increased the response to much higher levels (93 and 100%, respectively). Therefore, even though many ewes will lamb on their own at this stage of gestation, treatment with flumethasone further improved synchrony of lambing.

Flumethasone-treated ewes lambed on the average 3.1 days sooner and gave birth to lambs that were .35 to 1.07 lb. lighter on the average.

In conclusion, flumethasone was effective in grouping parturition. Treatment on days 140 to 146 of gestation grouped lambing more closely than treatment on days 138 to 144.

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[1]Flucort , Diamond Laboratories, Des Moines, IA 50304.

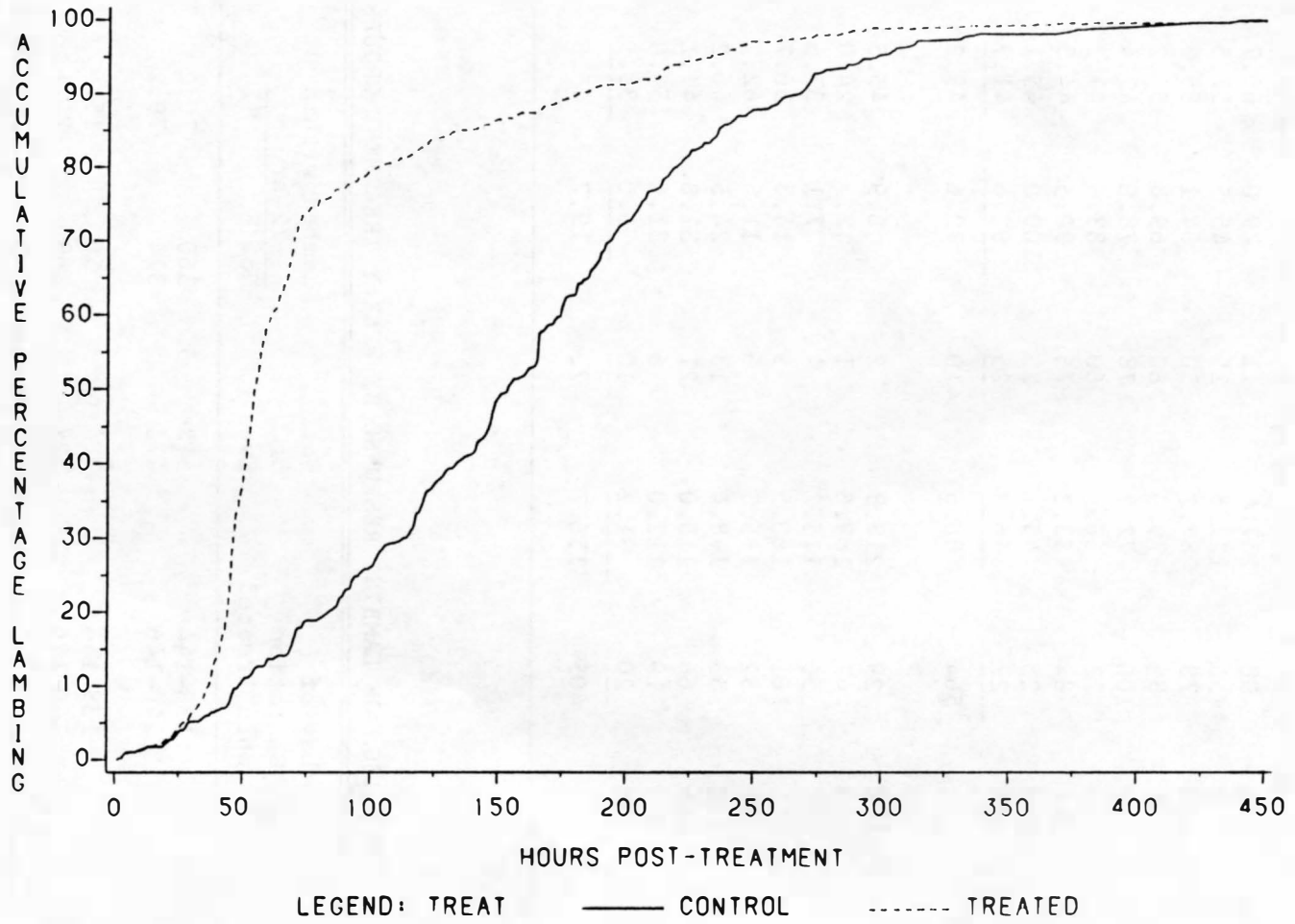

Figure 1. The accumulative percentage lambing by hours post-treatment.

TABLE 1. THE EFFECT OF TREATMENT AND DAY OF INJECTION ON LAMBING RESPONSE.

Treatment	Day of Inj.	No. of Ewes	Mean No. of hr.	Lambed within 72 hr. No.	%	(hr)
Flumethasome	138	38	157.6	11	29.0	60.7
	139	55	127.6	25	45.5	57.5
	140	78	87.2	50	64.1	55.3
	141	86	79.6	60	69.8	54.2
	142	100	72.9	78	78.0	47.4
	143	72	66.1	60	83.3	47.2
	144	84	53.2	76	90.5	44.3
	145	25	45.1	25	100.0	45.1
	146	27	46.9	25	92.6	41.7
Total or $\bar{x}$		564	80.6	410	72.6	49.2
Control	138	29	218.8	2	6.9	45.5
	139	47	189.6	1	2.1	24.0
	140	56	175.2	4	7.1	37.5
	141	61	160.5	9	14.8	36.7
	142	52	165.3	6	11.5	62.2
	143	53	148.4	13	24.5	46.2
	144	66	119.0	21	31.8	47.1
	145	19	112.0	6	31.6	55.0
	146	20	91.2	10	50.0	38.5
Total or $\bar{x}$		403	156.7	72	19.7	45.5

TABLE 2. COMPARISON OF LAMBING RESPONSE BY WEEKLY TREATMENT GROUPS.

Treatment	Day of Gestation when Treated	No. of Ewes	Lambed within 72 hr. No.	%
Flumethasone	138-144	513	360	70.2
	140-146	472	374	79.2
Control	138-144	364	56	15.4
	140-146	327	69	21.1