1977

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A.S. Series 77-3

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A Progress Report

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Controlling parturition (birth) in the ewe offers to the producer a valuable tool to increase the efficiency of his operation. Parturition induction could be utilized in entire small flocks or groups within large flocks. Also, large flock operators could utilize controlled parturition for a clean-up tool by inducing parturition in all ewes not lambing by 134 days after removal of rams from the breeding flock. More efficient utilization of available space and labor, less death loss (due to increased supervision) and more lambs born on a given day are some of the advantages the producer might obtain by controlling time of birth.

Experimental Procedure

During the breeding seasons of 1974 (August 20 through October 21), 1975 (September 9 through October 21) and 1976 (September 9 through November 4), breeding dates were identified for 371 purebred and crossbred ewes by the use of marker rams with grease-painted briskets. Ewes were checked daily for evidence of breeding. Colors used for marker rams were changed every 14 days. The last observed marking date was determined to be a ewe's breeding date.

Ewes were randomly allotted into two treatment groups, one receiving a 2 mg flumethasone injection, the second receiving a physiological saline control injection.

Every Wednesday morning between 8:00 and 9:30 am, all ewes on or between days 138 through 144 of gestation received their respective treatments. Treatments were given intramuscular (IM) in 4 cc volumes. Ewes were checked for parturition at a maximum time interval of 4 hours.

Clean-up ewes were designated as all remaining pregnant ewes for which known breeding dates were not available and that had not lambed prior to 14 days before the last expected lambing date. Last expected lambing date was considered to be 148 days after the rams were removed from the flock. Clean-up ewes received 2 mg flumethasone at this time.

Data collected were weight of ewe at time of injection, date and time of birth, number and sex of lambs, weight of lambs at time of birth, ewe lambing score (1 - no difficulty, 2 - slight difficulty, 3 - pulled, 4 - pulled, great difficulty) and ewe milking score (1 - normal, 2 - lacking milk, 3 - injured or no milk, 4 - bad bag).

Prepared for Sheep Field Day, June 10, 1977.

Results and Discussion

Table 1 contains average prelambing ewe weight, average lamb weight, number of lambs per ewe, lambing difficulty score and ewe milking score. Analysis of variance for average lamb birth weight indicated a decrease (P<.01) in lamb birth weight, .6 lb, with the flumethasone treatment. Lambing difficulty score and milking score analyses indicated no difference (P<.01) in these parameters between treatment groups.

Table 2 lists the mean hours from treatment to parturition for all ewes treated. Flumethasone-treated ewes had a shorter time interval (P<.01) from treatment to parturition (86.8 ± 8.0 hours) than did control ewes (155.1 ± 7.9 hours).

The percentage of ewes that might be expected to lamb within a specified time period after treatment is of interest to the producer. Those ewes not lambing within 72 hours after treatment are not considered to have responded to treatment, because the active chemical is metabolized in less than 72 hours. Assuming these criteria, the percentage of flumethasone-treated ewes lambing within 72 hours was higher than for control ewes (P<.01). Sixty-three percent of the flumethasone-treated ewes lambed compared to 17% of the control ewes within 72 hours after treatment (table 3). This difference of 46% would be the increase in percentage of ewes lambing within the 72-hour period as a result of flumethasone treatment. The mean and standard error of the flumethasone-treated ewes responding within 72 hours was 49.5 ± 2.1 hours. Based on the results of this experiment, one would expect 68% of the flumethasone-treated ewes that respond to lamb in a 4.2-hour period starting 47.4 hours following injection. Ninety-five percent of the ewes that respond would be expected to lamb in an 8.4-hour period starting 45.3 hours after injection.

Twenty-two ewes received clean-up injections. Percent ewes lambing 72 hours after injection was 72.7%, with a mean time from injection to parturition of 45.5 ± 2.8 hours (table 4).

Summary

Flumethasone injection decreased the average time interval from treatment to parturition (86.8 ± 8.0 hours, flumethasone treatment; 155.1 ± 7.9 hours, control). Sixty-three percent of the flumethasone-treated ewes lambed within 72 hours after injection vs 17% of the controls. Based on the results of this study, 95% of flumethasone-treated ewes that respond could be expected to lamb in an 8.4-hour period starting 45.3 hours after injection.

Seventy-three percent of the clean-up ewes lambed within 72 hours after injection with a mean time from injection to parturition of 45.5 ± 2.8 hours.

Table 1. Average Prelambing Ewe Weight, Average Lamb Weight, Number of Lambs Per Ewe, Lambing Difficulty Score and Ewe Milking Score

Treatment	Avg ewe wt. (lb)	Avg lamb wt. (lb)	Avg number lambs per ewe	Lambing difficulty score[a]	Milking score[b]
Flumethasone	177.2	10.2[c]	1.7	1.1	1.1
Saline	181.8	10.8[d]	1.6	1.1	1.1

[a] 1 - no difficulty, ..., 4 - pulled, great difficulty.
[b] 1 - normal, ..., 4 - bad bag.
[c,d] Average lamb weights with different superscripts differ significantly (P<.01).

Table 2. Average Interval from Treatment to Parturition for All Ewes

Treatment	Mean hours	Standard error
Flumethasone	86.8[a]	8.0
Saline (control)	155.1[b]	7.9

[a,b] Means with different superscripts differ significantly (P<.01).

Table 3. Percent of Ewes Lambing Within 72 Hours Post-treatment and Their Average Interval From Treatment to Parturition

Treatment	Number	Lambed within 72 hours (No.)	(%)	Mean hours	Standard error
Flumethasone	186	118	63	49.5	2.1
Saline (control)	185	31	17	42.2	5.0

[a,b] Lambing percentages with different superscripts differ significantly ($P<.01$).

Table 4. Percentage of Clean-up Ewes Lambing Within 72 Hours Post-injection and Their Average Interval From Treatment to Parturition

Injection	Number	Lambed within 72 hours (No.)	(%)	Mean hours	Standard error
Flumethasone	22	16	72.7	45.5	2.8