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Synchronizing Estrus with 5 or 10 MG Prostaglandin F2α in the Ewe

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SYNCHRONIZING ESTRUS WITH 5 OR 10 MG PROSTAGLANDIN F2α IN THE EWE (PROGRESS REPORT)

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Summary

Singular intramuscular injections of prostaglandin F2α (PGF [1]) at 5 or 10 mg per ewe was evaluated to determine relative effectiveness for synchronizing estrus. Parameters measured were interval to mating after injection, interval to conception after last injection, interval to mating-second cycle, interval to conception-second cycle. No significant differences due to treatment were found. Small numbers may account for lack of statistical differences. Further work is needed before final conclusions can be drawn.

(Key words: Estrus, Ewe, Prostaglandin F2α, Synchronization)

Introduction

The length of the breeding period can be decreased through estrous synchronization. This enables the producer to reduce the length of the resulting lambing period allowing for more efficient use of labor and facilities during lambing. Past synchronization trials at this station have found intramuscular injections of 10 or 15 mg PGF to be effective in synchronizing estrus during the normal breeding season. This study evaluates 5 or 10 mg PGF for relative effectiveness for estrous synchronization.

Experimental Procedure

Fifty-three crossbred and grade ewes representing Finn x Targhee, Suffolk x Targhee and Targhee were randomly assigned to 5 or 10 mg PGF treatments. Two weeks prior to the start of a 35 day September-October breeding period, epididymectomized teaser rams were placed with the ewes at a rate of 1 ram to 30 ewes. A flushing ration consisting of brome grass-alfalfa pasture supplemented with 0.34 kg (0.75 lb) ground corn per head per day was fed during the prebreeding and breeding periods. On day 1 at 1600 hr. teaser rams were replaced with semen tested Suffolk rams at the rate of 1 ram to 14 ewes. A marking mixture of grease and wool branding paint was applied on the chest area of the rams and breeding marks were recorded daily. Ewes which had not mated by 0800 hrs on day 5 as assessed by absence

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[1] Lutalyse®, courtesy of The Upjohn Company, Kalamazoo, MI 49001.

of a breeding mark were injected intramuscularly with PGF. On day 35 rams were removed and ewes were treated similarly through lambing.

Results and Discussion

Parameters measured were interval to mating after injection, interval to conception after injection, interval to mating-second cycle, interval to conception-second cycle, Julian lambing date and number of lambs born per ewe lambing.

Table 1 lists the number of ewes mating and conceiving by time periods following injection. The number of ewes conceiving by time periods for treatments were determined by lambing date minus 148 days. Twenty of the 53 ewes mated on day 1 through 4 and therefore received no injection of PGF and were not included in table 1. Of particular interest is the very low number of ewes mating and conceiving during the second cycle after injection which indicates the rams were very effective in identifying and breeding ewes within the first 17 days. This may be partially attributed to the ram and ewe ratio (1R:14E). Table 2 summarizes the number of ewes receiving injections and the lambing response. Forty-four percent of those receiving the 5 mg levels conceived within 80 hrs. compared to 75% on the 10 mg level.

Lambing dates were recorded as Julian lambing dates and lambing distributions were plotted (figure 1). Least squares means and standard errors for lambing date for 5 and 10 mg PGF were 60.20±1.22 and 59.20±1.20, respectively. Number of lambs born per ewe lambing were 2.125 and 2.120 for 5 and 10 mg PGF treatments respectively.

No statistical differences due to treatments were found. This may be due to either the result of similar responses or small numbers per group. Further work is needed before final conclusions can be drawn.

TABLE 1. NUMBER OF EWES MATING AND CONCEIVING BY TIME PERIODS FOLLOWING INJECTION.

Time Periods	Treatment			
	5 mg PGF		10 mg PGF	
	No. Mating	No. Conceiving	No. Mating	No. Conceiving
0 - 8 hrs	0	0	1	1
8 - 32 hrs	0	0	4	4
32 - 56 hrs	7	5	3	3
56 - 80 hrs	3	3	2	1
80 -180 hrs	4	4	2	2
180 hrs-17 days	3	3	0	0
17 - 35 days	2	1	1	0

TABLE 2. SYNCHRONIZATION AND LAMBING RESPONSE FOLLOWING 5 OR 10 MG PGF.

	Treatment	
	5 mg PGF	10 mg PGF
Number of ewes		
Exposed	26	27
Mated day 1-4	8	15
Received injection	18	12
Conceived		
0-80 hours postinjection	8 (44.4)[a]	9 (75.0)
0-80 hours postinjection, second cycle	1	1
Injected and open	2 (11.1)	1 (8.3)
Lambing rate		
Lambs per ewe lambing	2.13	2.12
Lambs per injected ewe lambing	1.81	2.09

[a]Number in parenthesis are percentages based on number shown divided by the number that were injected.

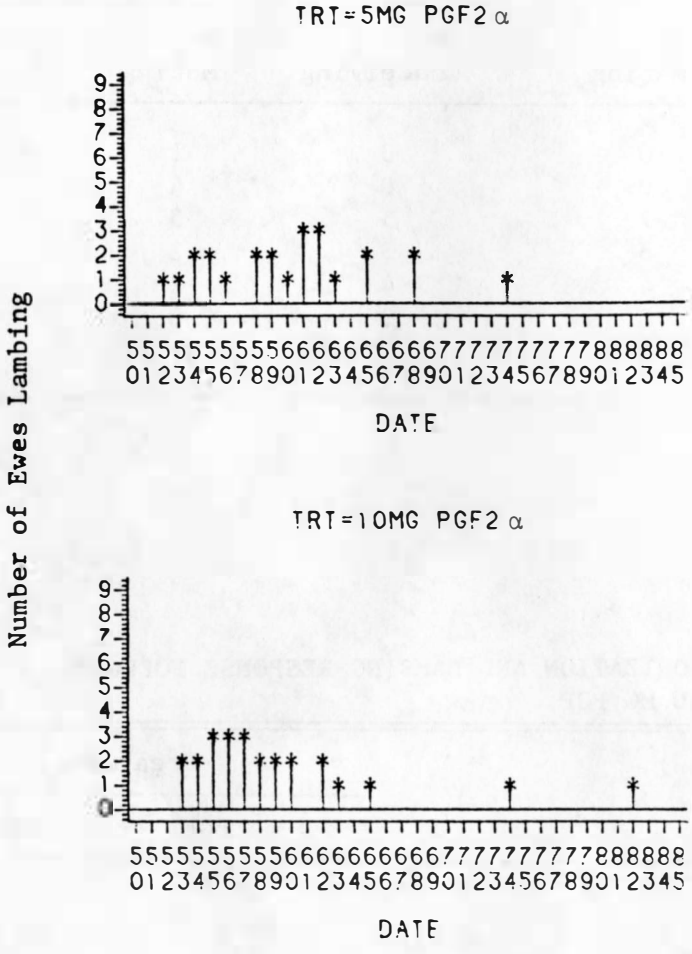

Figure 1. Lambing distribution, number of ewes lambing by Julian lambing dates.