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Duane L. Davis

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Prostaglandin $F_{2\alpha}$ to Induce Farrowing in Sows[1,2]

D. L. Davis

Summary

Alternate groups of sows were synchronized, with prostaglandin, to farrow within a certain time or to serve as controls. The objective was to determine if baby-pig survival or litter-weaning weight would be improved by such group farrowing. Results indicated no improvement in those traits; therefore, if prostaglandin is used under the conditions of this experiment, its cost will have to be justified by other considerations.

Introduction

Most baby-pig losses occur at, or shortly after, farrowing; so pork producers and researchers have been looking for ways to improve farrowing management. In recent years, a better understanding of the physiology of birth has led to the discovery that 70-80% of sows injected with prostaglandin $F_{2\alpha}$ on the 111th day of gestation (or later) would farrow the following day. Prostaglandin has not yet been approved for this use by the U.S. Food and Drug Administration, but approval is being sought, and this trial was conducted to evaluate potential benefits of using prostaglandin to synchronize farrowing in groups of sows.

Theoretical benefits of synchronized farrowing are: 1) by knowing approximately when 80% of a group of sows will farrow, a swine producer can schedule labor so that he can be on hand to supervise farrowing, aid with difficult births, and otherwise assist new-born pigs; 2) having most sows farrow within a short time allows for more efficient cross-fostering to even-out litters and 3) management of farrowing rooms might be simplified. The first two theoretical benefits were evaluated by comparing groups of sows in which farrowing was either synchronized or not synchronized (non-treated controls).

Procedures

This experiment, involving 90 sows in 14 groups, was conducted at Excel Feeder Pigs, Scott City, Kansas, in the summer and fall of 1980. Farrowing was synchronized by injecting prostaglandin $F_{2\alpha}$ (Lutalyse®) into the ham muscle of a sow on day 111 to 114 of gestation. Each week a group

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[1] Lutalyse, UpJohn Co., Kalamazoo, MI 49001.

[2] The Cooperation of Excel Feeder Pigs, Scott City, KS, where this study was conducted is gratefully acknowledged.

of sows was brought, according to farm procedures, into a cleaned, disinfected farrowing room operated on an all-in/all-out basis. Farrowing was synchronized in 7 groups of sows (averaging 6.1 sows per group), alternated with 7 groups of sows not treated and used as controls (averaging 6.7 sows per group). Control sows were handled as usual. Synchronized sows were usually injected with prostaglandin on one of two days, early or late in the week that they were expected to farrow; the day after, they were observed closely. For both groups, the farrowing manager provided assistance deemed necessary, and litters among sows were equalized by cross-fostering.

Results and Discussion

Results (Table 1) showed that prostaglandin was effective in synchronizing farrowing by 81% of the sows that farrowed 24 to 38 hours after injection. However, there was no improvement in the number or percentage of pigs born alive, or in the weaning weight of the litter. Adjusted litter size was 9.3 for controls; 9.5 for treated sows. Inspecting adjusted litter sizes revealed that the number of pigs per sow was similar. Therefore, there was no advantage in avoiding extremely large or small litters during lactation. These results indicate that if synchronized farrowing is practiced under the conditions of this experiment, the cost of the drug will have to be offset by advantages other than improved pig survival or increased litter-weaning weight, if the practice is cost effective. Currently, ten milligrams of prostaglandin would cost about $2.00. Prostaglandin might be cost effective if, for example, in weekly farrowing schedules, all sows that had not farrowed by Thursday morning were injected. That would minimize the number of sows farrowing during the weekend and might improve uniformity in the age at which pigs in a farrowing room were weaned. But that possibility was not evaluated in this experiment.

Table 1. Farrowing and Weaning Performance of Prostaglandin-treated and Control Sows

	Control	Prostaglandin
No. of sows	47	43
No. farrowing before 24 hr. after prostaglandin	--	0
No. farrowing 24-38 hr. after prostaglandin	--	35 (81%)
No. farrowing later than 38 hr. after prostaglandin	--	8 (19%)
Average interval from injection to farrowing, hr.	--	31.1
Average gestation length, days	114.7	112.7
Interval from first to last pig, hr. (No. of sows on which this information was available)	3.0 (23)	2.9 (34)
No. of pigs born alive	9.1	9.1
% of pigs born alive	92.3	91.2
Average adjusted litter size	9.3	9.5
Average age of the litter at weaning (days)	20	19.6
Average no. of pigs weaned	7.7	7.7
Litter weight at weaning, lbs.	98.6	96