



The Attainment of Estrus in Sows Administered with 400 IU Pregnant Mare Serum Gonadotropin and 200 IU Human Chorionic Gonadotropin at Weaning¹

Technical Report No. 4

Summary

A study was conducted to determine if hormone therapy consisting of a combination injection of 400 IU Pregnant Mare Serum Gonadotropin (PMSG) with 200 IU Human Chorionic Gonadotropin (HCG) was effective in stimulating return to estrus in sows farrowing during the summer. The study was conducted on two Missouri swine farms.

Days-to-estrus was improved by 7 days on Farm A but had no effect on Farm B. The number of sows exhibiting estrus within 8 days postfarrowing was improved on Farm A but not on Farm B. The proportion of sows which farrowed and attained estrus was not altered by hormone therapy on either farm.

This study suggests that when return to estrus in weaned sows was delayed, hormone therapy of 400 IU of PMSG with 200 IU HCG was effective.

Introduction

For many swine producers, hot summer temperatures often cause delays in return to estrus for just-weaned sows. Sows not returning to estrus within 7 days after farrowing cause decreases in efficiency of production and profit. To alter this, administration of hormones important in stimulating estrus may be effective.

Prepuberal gilts have exhibited fertile estrus when given 400 IU PMSG with 200 IU HCG (Paterson et al., 1984). Therefore, a study utilizing two Missouri commercial swine farms was conducted to determine if administration of 400 IU PMSG with 200 IU HCG (P.G. 600®) was effective in improving return to estrus of sows that farrowed during the summer months.

Experimental Design

Two commercial swine farms were used in this study.

At Farm A, the experiment began the week of July 20, 1987 and included sows that weaned their litters prior to August 24, 1987. Sows weaned their litters at approximately 3 weeks after farrowing. There were 18 to 24 sows weaned weekly. A total of 80 sows were used for this project.

At Farm B, the experiment began the week of July 13, 1987 and included sows that weaned their litters prior to September 28, 1987. Farm B weaned sows at approximately 4 weeks of lactation. This farm weaned 4 to 10 sows weekly.

A total of 79 sows were included in the project. Sows scheduled to wean each week were randomly assigned to be injected with P.G. 600® or to be untreated. Sows that received P.G. 600® were injected the day of weaning. Sows were checked daily for the onset of estrus with an intact boar. All sows were hand mated.

Data collected provided information on the number of sows achieving estrus, days to estrus after weaning and number of sows reaching estrus 8 days after weaning.

Results and Discussion

The number of sows that farrowed and exhibited estrus is given in Table 1. Treating sows with P.G. 600® did not stimulate more sows to come into heat. However, it appears that neither farm experienced a large number of sows becoming anestrous after weaning and therefore P.G. 600® would not be expected to be very effective under such circumstances.

Days to estrus after farrowing for those sows that exhibited estrus is reported in Table 2. For Farm A, the week the sows were weaned and

treatment interacted to give a varied response. However, for the entire experiment, average days to first estrus for sows being injected with P.G. 600® was 7.2 days compared to 14.9 days for sows not being treated. No difference was detected among sows being treated with P.G. 600® when compared to untreated sows for days to first estrus at Farm B. The experiment was conducted for a longer period at Farm B than at Farm A.

The number of sows reaching estrus 8 days after farrowing for each farm is given in Table 3. At Farm A, treatment of sows with P.G. 600® at weaning was effective in bringing more sows into estrus by day 8 after farrowing. Treatment of sows with P.G. 600® at Farm B did not cause more sows to be in estrus by 8 days after farrowing. The difference in the 2 farms could be due to reasons given in the previous paragraph.

Table 1.

	Number of Sows that Exhibited Estrus after Farrowing	
	Exibited Estrus	Failed to Exhibit Estrus
	Farm A	
Injected ^a	42	4
Not injected	32	2
	Farm B	
Injected ^a	39	1
Not injected	38	1

^aTreatment did not affect the number of sows that reached estrus after farrowing.

Table 2.

Days to Estrus after Farrowing for Sows that Exhibited Estrus

Week of weaning	Injected	Not injected
	Farm A	
July 20, 1987	11.5 (9) ^c	11.75 (7)
July 27, 1987	6/2 (10)	9.5 (7)
August 3, 1987	4.7a (7)	26.4b (4)
August 10, 1987	6.4 (7)	13.8 (6)
August 17, 1987	7.2 (9)	12.7 (7)
	Farm B	
July 13 thru		
Sept. 25, 1987	5.8 (39)	6.8 (38)

^{a,b}Means in the same row with different superscripts differ (P < 0500).

^cNumber of observations per sub-class.

Table 3.

Number of Sows that Exhibited Estrus by Day Eight after Farrowing

	Exibited Estrus Before Day 8	Exibited Estrus After Day 8
	Farm A	
Injected	36 ^a	4 ^a
Not injected	19 ^b	13 ^b
	Farm B	
Injected	35	4
Not injected	32	6

^{a,b}Numbers in the same column with differing superscripts differ (P < 0.01).



Conclusion

Sows weaned at Farm A experienced a delay in return to estrus during the duration of this experiment. The administration of P.G. 600® was effective in decreasing the days to first estrus and provoking a larger number of sows to attain estrus within 8 days after farrowing. Sows weaned at Farm B did not experience a delay in the return to estrus during this study. Therefore, P.G. 600® was not effective.

The data suggest that if return to estrus is delayed in sows weaned during the summer, then P.G. 600® is effective in reversing this condition.

Literature Cited

Paterson, A.M. Pearce, GR. Foxcroll, GR. and Reed, HC.B., 1984. Reproductive performance of gilts induced into puberty with estradiol benzoate or a combination of Pregnant Mare's Serum Gonadotropin and Human Chorionic Gonadotropin. *Anim. Prod.* 38:121

We wish to express our thanks to Norad Enterprises, Vandalia, and Vollmer Farms, Boonville. Special thanks to Mr. Al Kennelt and Mr. Ross Swofford, area livestock specialists, for their interest and help. Also, we thank Dr Mike Brauer of Intervet America Inc. for supplying the P.G. 600® and for his technical assistance.

Intervet Inc.
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