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Evaluation of the Effect of Adding Lutalyse® Sterile Solution to Extended Boar Semen on Farrowing Rate, Service Periods per Pregnancy and Litter Size

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Introduction

Several investigators have examined the use of Lutalyse in females at the time of insemination to improve fertility and/or litter size.^{1,2} This trial, conducted in a start up herd, examined the effect of the addition of Lutalyse to the extended boar semen at the time of insemination in gilts and parity 1 females on subsequent farrowing rate (FR), service periods per pregnancy (SP/P), and total born (TB). The effect of season was also examined.

Materials and methods

Females were assigned to either a treatment group or a control group at breeding based on ear tag number (even numbered females to the treated group, odd numbered to the control group). Females in the control group were inseminated with extended boar semen and 0.5 ml of Lutalyse® Sterile Solution added at the time of insemination. The Lutalyse was injected into the breeding catheter, the catheter was inserted into the cervix and the catheter was then flushed with 80 mL of extended semen. Females in the control group were inseminated with extended boar semen. Pig Champ records were used as the recording method and the records were analyzed for farrowing rate, adjusted farrowing rate, and litter size. Records with incomplete or conflicting data were excluded from the analysis.

Results

Records from 2274 animals were available for analysis (1575 gilts and 699 parity 1). Gilts inseminated with Lutalyse-treated semen had higher farrowing rates and lower service periods per pregnancy than gilts inseminated with untreated semen. A service period is the duration of one estrus. There was no difference in total born or born live between the two groups. In parity 1 females, the farrowing rate at subsequent farrowing was higher in the treated group. There was no difference in service periods per pregnancy, total born and born alive. Across both parities, there was a significant difference in farrowing rate and service periods per pregnancy in favor of the Lutalyse treated group. See Tables 1-4

Table 1. Gilts Farrowing rate, service period/pregnancy and total born by treatment

	Lutalyse	Control	P value
N	769	806	
FR	84.9	81.5	<.02
SP/P	1.26	1.38	<.03
TB	10.1	10.1	<.17

Table 2. Parity 1 Farrowing rate, service period/pregnancy and total born by treatment

	Lutalyse	Control	P value
N	373	326	
FR	85.8	81.4	<.05
SP/P	1.29	1.31	<.06
TB	10.2	10.1	<.27

Table 3. Gilts and parity 1 Farrowing rate, service period/pregnancy and total born by treatment.

	Lutalyse	Control	P value
N	1142	1132	
FR	85.2	81.5	<.03
SP/P	1.27	1.36	<.03
TB	10.1	10.1	<.17

In both the hot season (<8/31) and the moderate season (>8/31), the treated gilts outperformed the controls with respect to FR and SP/P.

Table 4. Farrowing rate by season bred and treatment group

Breed date	Lutalyse	Control	P value
6/01- 8/31	86.8	82.0	<.03
>8/31	82.9	80.1	<.03
P(seasonal effect) < .03			

Table 5 Service periods per pregnancy by season bred and treatment group

Breed date	Lutalyse	Control	P value
6/01- 8/31	1.17	1.31	<.04
>8/31	1.35	1.47	<.05
P(seasonal effect) < .05			

Conclusions

In this trial, gilts responded positively to the addition of Lutalyse to extended boar semen. Farrowing rate and service periods per pregnancy were positively affected. Litter size was unaffected. Parity 1 females responded to Lutalyse addition to extended semen with a higher farrowing rate. In gilts, the effect of adding Lutalyse was significantly greater in the hot season than in the moderate season and significantly better in both seasons than controls.