

Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 10 *Swine Day (1968-2014)*

Article 248

1982

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W E. Schmidt

Duane L. Davis

Jeffrey S. Stevenson

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Recommended Citation

Schmidt, W E.; Davis, Duane L.; and Stevenson, Jeffrey S. (1982) "Fertility with artificial insemination: gilts that lock on the insemination spirette vs. those that don't," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 10. <https://doi.org/10.4148/2378-5977.6088>

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Fertility with Artificial Insemination:
Gilts That Lock On The Insemination Spirette
vs Those That Don't

W.E. Schmidt, D.L. Davis and J.S. Stevenson

Summary

KSU breeding records show a higher farrowing rate for gilts that "lock" on the insemination spirette at both inseminations as opposed to gilts that "lock" at one insemination or at neither insemination. Continued research is focusing on factors affecting female response to insemination and fertility.

Introduction

There is considerable unexplained variation in fertility after natural mating and artificial insemination. We are conducting experiments to discover reasons for variable fertility. As part of that effort, we examined breeding records to determine if the gilts response to AI (as determined by whether or not her cervix locked on the insemination spirette) has any relationship to fertility.

Procedures

Gilts were checked twice daily for estrus (am and pm) and artificially inseminated at the second and third checks after estrus was detected. Insemination was accomplished using a rubber spirette having a cork screw tip. Pooled semen from at least two boars and extended to 100 cc's with an egg yolk, bicarbonate, glucose extender was inseminated at each service. If the gilts cervix locked on the spirette, "locked" was recorded. If the gilt's cervix did not lock on the spirette, it could be freely pushed and pulled through the cervix and "no lock" was recorded.

Results and Discussion

Gilt response to AI was an important source of variation in fertility. As shown in table 1, approximately 85% of the gilts farrowed that locked on the spirette at both inseminations. In contrast, only 63 and 73% of the gilts not locking at one or both inseminations farrowed ($P < .05$). Litter size differences were not statistically significant but followed a similar trend.

Table 1. Fertility of Gilts "Locking" or "Not Locking" on the Spirette.

Item	Locked at both AIs	Locked at one AI	Did not lock at either AI
No. of gilts	106	24	16
No. of gilts farrowing	90	15	11
% gilt farrowing ^a	84.9%	62.5%	73.3%
Total pigs farrowed	11	9.5	9.9
Pigs farrowed alive	10.4	9	9.3

^aGilts failing to "lock" at one or both inseminations had a lower farrowing rate than gilts "locking" at both inseminations ($P < .05$).

Two possible explanations for poorer fertility in "not-locking" gilts are: 1) gilts were not in the proper physiological stage of estrus at the time of AI; or 2) something about the AI technique was deficient in stimulating the gilt to "lock". The latter possibility is being investigated currently.