

Public Abstract

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Title:TIMING OF OVULATION IN GILTS TREATED WITH DIFFERENT REGIMENTS OF OVUGEL AND MATRIX

Previous research has shown that 85% of gilts treated with Matrix® will show heat (estrus) 4-9 d after last Matrix® feeding. Synchronization of estrus is important in knowing when to inseminate (breed). This window of estrus is too large to accurately have synchronization occur at the same time and be able to inseminate all gilts within a short period of time. OvuGel® is administered 96 h post weaning and has been shown to cause ovulation in sows 40-48 h after administration. OvuGel® is approved for use in sows, whereas Matrix® has been approved for use in gilts. FDA approval (INAD # 10-964) for the use of OvuGel® in gilts was received in order to perform this research.

Between December 2014 and April 2015, 5 groups consisting of a total of 105 gilts were used to evaluate the time of ovulation, incidence of ovulation, pregnancy rate, timing of Matrix® administration, and timing of OvuGel® treatment after last feeding of Matrix® to better characterize ovulation in gilts. These groups consisted of Landrace/Large White gilts (PIC 1050 Genetics) with at least one heat-no-serve prior to being put on study. Gilts were allocated in a randomized complete block design and were blocked by weight. Gilts were housed in 2.13m x 0.61m gestation stalls in a mechanically ventilated barn during the study. Each gilt was fed 15mg of Matrix® orally for 14 d per label instructions. Gilts in control (C1) and treatment (OG1) groups were administered Matrix® at 0700 h, and gilts in control 2 (C2) and treatment 2 (OG2) groups were administered Matrix® at 1900 h. Gilts were then administered either a placebo (control, C1 and C2) or OvuGel® (treatment, OG1 and OG2) either 120 h (C1 and OG1) or 132 h (C2 and OG2) after last Matrix® feeding. Estrus detection was performed once a day for d 4 and 5 of the study, and twice a day on d 1, 2, 3, 6 and 7. Gilts were inseminated 24 h after placebo or OvuGel® administration regardless of standing heat, and inseminated again 24 h later if in standing heat. Transrectal ultrasonography was performed starting 4 h after OvuGel® or placebo administration. Twenty h later scans resumed and were performed at 6 h intervals until 54 h (n=17) or 60 h (n=88) after OvuGel® or placebo administration, or until gilts ovulated, whichever came first. Ovulation was determined by either visualization of corpora lutea or the absence of follicles for 1 (n=9) or 2 (n=65) consecutive scans. Time of ovulation (mean ± SE) was C1= 48.23 ± 1.91 h, C2= 44.29 ± 1.8 h, OG1= 45.95 ± 0.93 h and OG2= 39.78 ± 1.54 h. OvuGel® treated gilts had less variability in time of ovulation (P<0.05). Incidence of gilts ovulating during the scanning period (refer to scanning protocol) was as follows C1=0.54 ± 0.082, C2=0.74 ± 0.087, OG1=0.85 ± 0.082 and OG2=0.88 ± 0.082. The incidence of gilts ovulating was higher in OvuGel® treated gilts (P<0.05). There was no treatment effect on pregnancy rate and no statistical difference in timing of administration of Matrix®. More research needs to be done to accurately determine optimal time of OvuGel® administration with respect to last Matrix® feeding.