

Synchronization of Ovulation in Cyclic Gilts with Porcine Luteinizing Hormone (pLH)

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Optimal timing of artificial insemination (AI) in gilt breeding programs is crucial to ensure successful fertilization and improve reproductive efficiency. Heat detection is a key component of the effective use of AI, but can be time consuming and labour intensive. The use of exogenous hormones to control the timing of ovulation can eliminate the need for heat detection and facilitates the use of fixed-time AI procedures. Recent research has demonstrated that porcine luteinizing hormone (pLH) can reliably synchronize ovulation in weaned sows as a part of fixed time AI protocols, but its application in gilts for this purpose has not been studied.

45 cyclic gilts received altrenogest treatment (14-18 days) followed by 600 IU equine chorionic gonadotropin (eCG) (24 hours after last altrenogest) and either 5 mg pLH, 750 IU human chorionic gonadotropin (hCG), or saline (controls), 80 post-eCG. For gilts given pLH or hCG, the diameter of the largest follicle prior to the onset of ovulation (8.1 ± 0.2 mm and 8.1 ± 0.2 mm) was smaller than control animals (8.6 ± 0.2 mm). The pLH and hCG groups ovulated sooner after treatment compared to the saline treated group (43.2 ± 2.5 , 47.6 ± 2.5 and 59.5 ± 2.5 h, respectively), with significantly less variation in the timing of ovulation for the pLH-treated animals. Embryo quality, evaluated using total cell counts and embryo diameter, was not affected by hormone treatment.

Implications: These results indicate pLH is applicable for use in cyclic gilts, and is can reliably synchronize ovulation without detrimentally affecting embryo quality. This suggest that pLH based fixed-time AI protocols in could be applied in gilts.