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Reproductive performance of primiparous sows inseminated at the second estrus after weaning or after post-weaning hormonal treatment with altrenogest

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Introduction

This study investigated the effects of breeding at the second estrus after weaning or after feeding an orally active progestagen (altrenogest) on the subsequent reproductive performance of primiparous sows.

Materials and Methods

After three weeks of lactation, 663 weaned primiparous sows were allocated into three groups: G1 - breeding at the first estrus after weaning; G2 - breeding at the second estrus after weaning and G3 - treatment with 20 mg altrenogest (Regumate®) for 5 days after weaning and breeding at the first estrus after the end of the treatment. In all sows of G3, the total daily individual consumption of the product was confirmed. The females were homogeneously distributed within the groups according to genetic line, number of previous total born piglets and number of weaned piglets, body condition score (BCS) at weaning and lactation length. During lactation previous to the application of treatments sows were fed *ad libitum* (19.0% crude protein, 0.9% lysine, and 3400 kcal metabolizable energy). From weaning up to insemination, they were fed with 4.0 kg/day (14.5% crude protein, 0.8% lysine, and 2900 kcal metabolizable energy). Estrus detection was performed twice daily, at 0800 and 1400, starting one day after weaning or after altrenogest withdrawal. The altrenogest to estrus interval (AEI) was calculated as proposed by van Leeuwen et al. (2010), i.e., starting at 24 h after altrenogest withdrawal, considering that altrenogest would be still acting during 24 h after its last administration. Body weight (BW) and backfat thickness (BT) measurements were performed at weaning and 24 h after the last insemination. Transabdominal ultrasonography was performed at estrus onset and 24 h after the last insemination with real time ultrasound equipment in order to retrospectively confirm if at least one insemination was performed within the period considered as ideal (Kemp and Soede 1996). The reproductive data of sows with weaning to estrus interval (WEI) and AEI more than 10 days were not included in the analysis.

Results

Groups did not differ in BW and BT at weaning ($P>0.05$), whereas at breeding, G1 and G3 sows had lower BW than G2 sows ($P<0.05$). Groups differed ($P<0.05$) regarding change of BW and BT from weaning to breeding, being expressed by a higher loss of weight and BT in G1, followed by G3 and a gain of weight and BT in G2 sows. The reproductive data are showed in Table 1.

Table 1 - Reproductive performance of primiparous sows bred at the first (G1), second estrus (G2) after weaning or at the first estrus after altrenogest treatment (G3)

Variables	G1	G2	G3
Sows in estrus, %	94.1a	95.5a	86.4b
WEI, d	4.4a	4.4a	3.7b
Return to estrus, %	10.1a	2.4b	29.3c
Abortion rate, %	1.0	1.4	1.6
Farrowing rate, %	87.0a	94.3b	69.1c
Total born piglets	11.0a	13.5b	9.8c
Born alive piglets	10.4a	12.7b	9.3c

a,b,c values within rows with different letters differ ($P<0.05$).

References

1. Kemp, B.; Soede, N.M. 1996. Relationship of weaning-to-estrus interval to timing of ovulation and fertilization in sows. Journal of Animal Science 74:944-949.

2. van Leeuwen, J.J.J.; Williams, S.I.; Kemp, B.; Soede, N.M. 2010. Post-weaning Altrenogest treatment in primiparous sows; the effect of duration and dosage on follicular development. Animal Reproduction Science 119:258