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Confinement and type of penning affects the interval to estrus and synchrony of estrus in gilts after altrenogest (1986)

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CONFINEMENT AND TYPE OF PENNING AFFECTS THE INTERVAL TO ESTRUS AND SYNCHRONY OF ESTRUS IN GILTS AFTER ALTRENOGEST[1]

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Summary

We compared the effects of outside vs inside and individual vs group penning on the interval to estrus after synchronization of estrus with altrenogest. Altrenogest (15 mg/day) was fed for 14 days and penning treatments were initiated after the last altrenogest treatment. All groups were exposed to a boar (2 hr/day) for 3 days, beginning the day after last altrenogest, and then twice daily estrous detection was initiated. Outside penning shortened the interval to estrus after altrenogest. Synchrony of estrus was not affected by treatment but there was a tendency for gilts penned outside to exhibit estrus more synchronously.

Introduction

Procedures have been developed for regulating the time of estrus in cycling gilts. Feeding altrenogest, a synthetic progestogen, to a group of gilts for 14 or more days alters the estrous cycles of gilts such that they return to estrus as a group a few days after the last treatment with altrenogest. Usually 70 to 80% of gilts will be in estrus during a 4-day period, most commonly between 5 and 8 days after altrenogest treatment ended. However, the average interval to estrus and degree of synchrony varies among trials. Herein, we report the results of an experiment that tested the effects of penning in individual stalls and group pens in confinement and outside group pens on the interval to estrus and the distribution of estrus.

Procedures

Two trials using 99 Chester White x Duroc x Yorkshire gilts were conducted (September and October, 1985). Altrenogest (15 mg/gilt) was fed daily to individual gilts penned in gestation stalls (21 x 66 in) for 14 days. The altrenogest was included in the first 1 lb of a complete diet and the total daily feed was 4 lb.

After consuming their last altrenogest treatments, gilts were either moved to a pen in the same building (penned inside), to an adjacent outside pen (penned outside) or remained in their stall. Beginning the day after last altrenogest, a mature (>1 yr-old) boar was introduced into each pen and in front of the gilts in stalls for 2 hr/day. Exposure to boars continued for 3 days and boars were rotated among treatments, such that each treatment group was exposed to each boar.

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[1]The authors appreciate the generous donation of altrenogest by Roussel-Uclaf, Paris, France. Altrenogest is a synthetic hormone and is not available to swine producers at this time.

Estrus checks were conducted from the fourth through the tenth day after last altrenogest. Twice daily (0830 and 1630 hr), a mature boar was introduced into each pen and gilts in stalls were moved to a pen in groups of four to eight, where they were exposed to a boar and observed for symptoms of estrus.

The deviations of individual intervals to estrus about the mean were calculated, and treatments were compared using Levene's test to compare the distribution of intervals about their mean.

Results

A similar number of gilts were in estrus by 10 days after last altenogest, regardless of treatment (Table 1). However, treatment affected ($P<.05$) the interval to estrus. Gilts penned outside were in estrus about 1.5 days earlier than those in other treatments. The synchrony of estrus was not significantly affected by penning treatment; however, inspection of the data (Fig. 1) reveals a tendency for gilts penned outside to be grouped more closely about their mean interval to estrus than gilts housed inside.

Discussion

Our present results add to the information available on synchronization of estrus in gilts. Outside penning stimulates a prompter estrus and perhaps a more synchronous grouping of estruses; however, the latter effect was not statistically significant and must be investigated further. Our previous work (1984 Swine Day Report, p. 6) demonstrated a reduction in the interval to estrus of .6 days when gilts were exposed to boars 2 hr/day beginning at the end of altrenogest treatment. Boar exposure was practiced for all treatments in our present study; therefore, the 1.5 days shorter interval to estrus may be in addition to that expected to result from boar exposure. These results are useful for interpreting some of the differing intervals to estrus after altrenogest reported by different investigators. More work will be required to establish methods for decreasing the variation in interval to estrus among individual gilts.

Table 1. Estrous Traits as Affected by Location and Individual or Group Penning After Altrenogest

Penning Location/type of pen	No. of gilts Assigned	In estrus(%)	Interval to estrus[a]
Inside/stall	33	25 (76)	7.8
Inside/pen	33	24 (73)	7.8
Outside/pen	33	28 (85)	6.3[b]

[a]Days after last altrenogest treatment.
[b]Less than other treatments (P<.05).

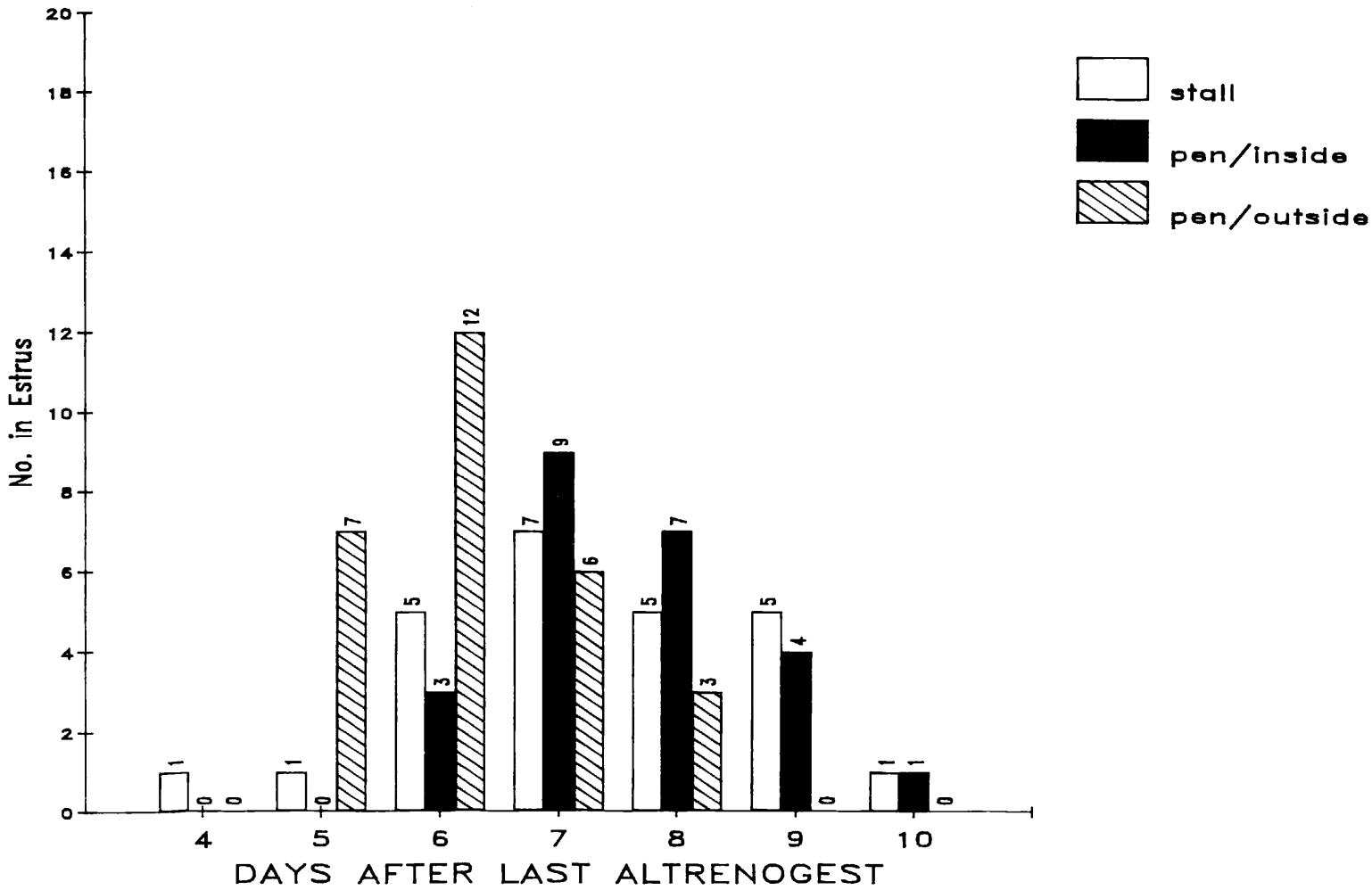

Figure 1. Effect of Penning Treatment on the Distribution of Estrus.