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EFFECTS OF EXPOSURE TO BOARS AND OTHER  
GILTS ON THE ESTROUS RESPONSE AFTER  
SYNCHRONIZATION WITH ALTRENOGEST<sup>1</sup>

Duane L. Davis and Jeffrey S. Stevenson

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Summary

Estrus was synchronized in gilts by feeding altrenogest for 18 days. All gilts were penned in gestation stalls. Beginning the day before the last altrenogest treatment and continuing until 3 days after treatment, gilts were either exposed to a boar for 2 hr/day, group-penned with other gilts for 2 hr/day, both exposed to a boar and group-penned, or given neither treatment. Boar exposure shortened the interval to estrus but group-penning had no effect. None of the treatments improved the synchrony of estrus.

Introduction

Altrenogest is a synthetic progestogen, which is used to synchronize estrus in groups of gilts. It is not approved presently by the Food and Drug Administration for use in pigs. In previous trials, we have observed varying intervals to estrus after altrenogest. These differences might arise from a variety of sources, including genetic differences between groups of gilts and differences in their environment. Social interaction is one environmental factor known to influence reproduction in pigs. This study provides information on the effect of boar exposure and exposure to other gilts in pens on the interval to and synchrony of estrus after altrenogest for breeding-age gilts.

Procedures

Four trials were conducted in February, March, November, and December 1983. Crossbred gilts (about 7.5 mo old) were housed in individual gestation stalls (21 in x 66 in) and fed 4 lb of a milo-soybean meal diet once daily. This diet included altrenogest (15 mg/gilt/day) for 18 days to synchronize estrus. Beginning day 17 of altrenogest feeding in each trial, one-half of the gilts were exposed to a mature boar for 2 hr/day. One-half of the boar-exposed gilts remained in their stalls during boar exposure, while other boar-exposed gilts were moved to pens (6 ft x 14 ft) in groups of four to six gilts with a boar in the pen. Two groups of non-boar-exposed gilts were included in each trial. One group was moved to a pen (6 ft x 14 ft) in groups of four to six for 2 hr/day and the other group remained in their stalls throughout the treatment period. All penned gilts were returned to their stalls after the 2-hr period. In summary, gilts were assigned randomly to one of four treatment groups: 1) boar exposure for 2 hr/day while remaining in gestation stalls; 2) boar exposure after movement to group pens for 2 hr/day; 3) no

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<sup>1</sup>We gratefully acknowledge the donation of altrenogest (Regu-mate®) by Dr. Stephen K. Webel and Roussel-UCLAF, Paris, France.

boar exposure while remaining in gestation stalls; or 4) no boar exposure after movement to group pens for 2 hr/day. These treatments continued until 3 days after the last altrenogest treatment, when twice daily heat checks began.

### Results and Discussion

Treatments had no effects on the percentage of gilts exhibiting estrus by 10 days after altrenogest (table 1). However, boar exposure shortened the interval ( $P<.001$ ) to estrus after altrenogest (table 2). Trial was also a significant source of variation for interval to estrus ( $P<.0005$ ). However, neither boar exposure nor group exposure to other gilts improved the synchrony of estrus.

These results indicate that 2 hr of boar exposure per day shortens the interval to estrus after altrenogest. However, group-penning for 2 hr/day with other gilts was without effect and neither treatment improved estrous synchrony.



Table 1. Estrous Response after Altrenogest as Affected by Boar Exposure and Group Penning with Other Gilts.

| Boar exposure              | Treatment            |          |          |          |
|----------------------------|----------------------|----------|----------|----------|
|                            | None                 | None     | 2 hr/day | 2 hr/day |
| Gilt exposure              | None                 | 2 hr/day | None     | 2 hr/day |
| No. assigned               | 51                   | 49       | 48       | 49       |
| No. in estrus <sup>a</sup> | 37 (73) <sup>b</sup> | 39 (80)  | 35 (73)  | 36 (73)  |

<sup>a</sup>By 10 days after last altrenogest.

<sup>b</sup>Percent of assigned.

Table 2. Effects of Boar and Group Exposure and of Trial on the Interval to Estrus after Altrenogest.

| Treatment     | Trial <sup>a</sup> |     |     |     | All trials       | % in heat<br>on days 6 to 8 <sup>b</sup> |
|---------------|--------------------|-----|-----|-----|------------------|------------------------------------------|
|               | 1                  | 2   | 3   | 4   |                  |                                          |
| Boar exposure |                    |     |     |     |                  |                                          |
| None          | 7.0                | 7.1 | 8.5 | 7.5 | 7.4 <sup>c</sup> | 83                                       |
| 2 hr/day      | 6.2                | 6.8 | 6.8 | 7.5 | 6.8              | 76                                       |
| Gilt exposure |                    |     |     |     |                  |                                          |
| None          | 6.6                | 7.3 | 7.5 | 7.2 | 7.1              | 81                                       |
| 2 hr/day      | 6.6                | 6.6 | 7.8 | 7.9 | 7.2              | 77                                       |

<sup>a</sup>Values are interval from last altrenogest treatment to estrus in days. Trial effect ( $P < .0005$ ).

<sup>b</sup>Includes gilts first in estrus from the morning of the sixth day to the morning of eighth day after altrenogest.

<sup>c</sup>Different from gilts exposed to boars ( $P < .001$ ).