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Jeffrey S. Stevenson

W E. Schmidt

Duane L. Davis

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Estrous Synchronization and Fertility  
in Allyl Trenbolone-treated Gilts

J.S. Stevenson, W.E. Schmidt and D.L. Davis

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Summary

Onset of estrus in gilts fed allyl-trenbolone for either 14 or 18 days was controlled effectively. The stage of the cycle at the beginning of treatment had little effect on the synchronization response. More than 97% of the treated gilts showed estrus within 3 to 8 days after the last progestagen feeding. Treatment did not affect gestation length, farrowing rate, or litter size.

Introduction

Controlling the time of estrus in gilts would help when trying to fit them into groups to replace culled sows, expand breeding herds, or start new production units. Estrus can be suppressed in all gilts by feeding them a progestagen (allyl-trenbolone); when withdrawn from the feed, the gilts generally will come in heat 3 to 8 days later. Though not currently available to swine producers, this drug should become available in the next few years. To be useful, an estrous synchronizing agent must meet two criteria: 1) it must effectively control the time of estrus, and 2) it must not adversely affect fertility. In previous research allyl-trenbolone has been fed for 18 days. We shortened the feeding period to 14 days and examined what effect stage of the estrous cycle at which treatment is initiated has on the synchronization response. Subsequent fertility also was evaluated.

Procedures

Four groups of 40 gilts each were checked for estrus for 3 weeks prior to synchronization. Stage of the estrous cycle -- gilts were either in or near estrus or were in diestrus (mid cycle) -- was noted for each gilt before assignment: 1) to be fed allyl-trenbolone (15 mg/day) for 14 days, or 2) to be fed allyl-trenbolone (15 mg/day) for 18 days. The progestagen, mixed into 1 lb of feed, was fed in individual feeding stalls. In addition, gilts received 4 lbs of a complete diet to meet their nutritional requirements. All gilts were checked for estrus twice daily beginning 3 days after the last progestagen feeding. Gilts that exhibited estrus were artificially inseminated twice with mixed semen from at least two boars at approximately 12 and 24 hr after estrus was first observed.

### Results and Discussion

Seventy-nine of 81 gilts treated with allyl-trenbolone for 14 days and 77 of 77 gilts so treated for 18 days began estrus between 3 and 8 days later (Table 2). Similarly, stage of the estrous cycle had little effect on the interval to estrus after treatment. Gestation length, farrowing rate, and litter size were not altered by treatment.

Table 2. Estrus and Fertility in Gilts Treated with Allyl Trenbolone for 14 or 18 Days

	<u>Stage of cycle</u>		<u>Treatment duration</u>	
	<u>Estrus</u>	<u>Diestrus</u>	<u>14 days</u>	<u>18 days</u>
No. gilts	74	82	81	77
Days to estrus	5.6	5.2	5.4	5.3
No. gilts bred	72	82	79	77
Average age at breeding (mo.)	9.2	9.3	9.2	9.3
No. bred gilts farrowing	53 (73.6) <sup>a</sup>	69 (84.1)	63 (79.8)	61 (79.2)
Gestation length (days)	116.2	116.7	116.5	116.5
Total pigs born	10.2	10.4	10.0	10.6
Alive at birth	9.7	9.6	9.3	10.0

<sup>a</sup>% of gilts bred.

We concluded that feeding allyl-trenbolone for 14 days is adequate to result in a synchronized fertile estrus. Because stage of the estrous cycle at the onset of treatment did not appreciably alter results, the 14-day treatment period could be applied in commercial herds of gilts in all stages of their estrous cycles.