

gilts was consistently higher than in cool gilts, suggesting that high environmental temperature alters endocrine function in gilts. This alteration in endocrine function could be related to the reduced reproductive efficiency observed when gilts are exposed to elevated ambient temperatures during early pregnancy.

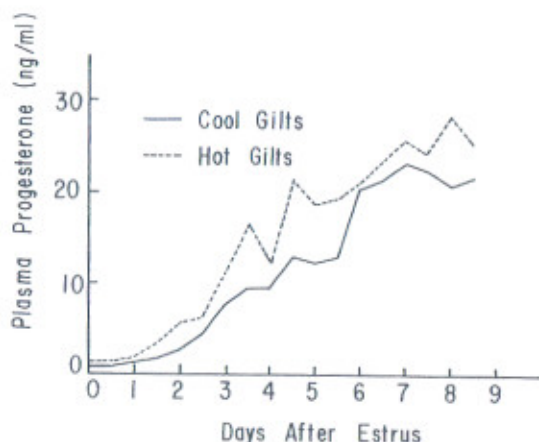


Figure 2. Plasma progesterone in gilts exposed to cool (74° F) or hot (95° F) environments after breeding.

Induction of Constant Estrus in Ovariectomized Sows

L. Brock, R.P. Wettemann and B. Taiwo

Story in Brief

Seven ovariectomized sows were treated with 12, 20 or 40 mg. of estradiol benzoate or 36 mg. of diethylstilbesterol to induce constant estrus. Within three days after treatment all sows were in standing estrus, and sows remained in estrus for 13 to 21 days after treatment.

Introduction

A problem frequently encountered in utilizing artificial insemination in swine is training boars so semen can be collected by the gloved-hand technique. Some boars will not mount a collection dummy, thus it would be convenient to have sows in constant estrus for the boar to mount during semen collection. Studies indicate that injection of prepubertal or ovariectomized gilts with estrogen will induce estrus. The objective of this study was to determine if commercially available implants, containing estrogen, could be utilized to induce estrus in ovariectomized sows.

Materials and Methods

Seven sows were ovariectomized one to three months prior to the start of treatment. Two sows were injected intramuscularly with 12 mg. of estradiol benzoate dissolved in corn oil. Commercially available growth stimulants were implanted into the ears of the other sows. Two sows were implanted with 36 mg. of diethylstilbesterol (DES), two sows were implanted with 20 mg. of estradiol benzoate and 200 mg. of testosterone propionate (Synovex H) and the other sow was given 40 mg. of estradiol benzoate and 400 mg. of progesterone (Synovex S). Sows were teased daily with a boar to determine the onset and duration of estrus.

Table 1. Estrous Activity of Ovariectomized Sows Treated with Estrogen

Treatment	Sow wt.	Estrus	
		Onset after Treatment	Duration
Estradiol benzoate (12 mg.) in corn oil	(lbs.)	(da.)	(da.)
	275	3	21
	325	3	15
Diethylstilbesterol (36 mg.) implant	315	3	15
	390	2	20
Estradiol benzoate (20 mg.) and testosterone propionate (200 mg.) implant	365	2	13
	440	3	15
Estradiol benzoate (40 mg.) and progesterone (400 mg.) implant	240	3	20

Results and Discussion

Estrus was induced in all sows within three days after treatment (table 1). Estradiol benzoate and DES appear to have similar effects on the induction of estrus in ovariectomized sows. The addition of progesterone or testosterone propionate to the implant did not inhibit the ability of estradiol to cause estrus. Although estrogen should still be present and released from the implants at three weeks after treatment, the sows no longer exhibited standing estrus.

When progesterone is present in large quantities, it inhibits the ability of estrogen to cause standing estrus in sows. Therefore, treatment of sows with estrogen during the estrous cycle will not cause the induction of estrus, but if anestrus gilts are injected with estradiol benzoate, estrus occurs.

Testicular Characteristics of Duroc, Hampshire and Cross-Bred Boars at 7.5 Months of Age

J. Holzler, R. P. Wettemann, R. K. Johnson and S. Welty

Story in Brief

Fifty-four boars of Duroc (D), Hampshire (H) and DxH breeding were castrated at 7.5 months of age to determine if breed influences testicular development. Testes, capita-corpora epididymides and caudae epididymides were weighed and homogenized and sperm numbers were determined by microscopic count. Breed of boar did not influence significantly testes or epididymidal weights or sperm numbers. Although these young boars had about 90 percent as many testicular sperm as mature boars they had only about half as many epididymidal sperm as mature boars.