Swine

Influence of Heat Stress on Reproductive Performance of Boars

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Decreased conception rates and increased breeding problems occur in swine herds during the summer months. This decrease in reproductive efficiency may be a result of elevated ambient temperature on the boar since gilts exposed to heat stress prior to breeding tend to have normal reproductive performance.

The objective of this study is to evaluate changes in semen quality, testicular physiology, hormone secretion and fertility of boars exposed to high ambient temperatures. A total of 12 yearling boars that previously produced fertile matings and 180 gilts will be used in this study.

The project was initiated in the fall of 1972. In the first replicate, three boars were randomly allotted to each of the two temperature-controlled environmental chambers at the Fort Reno Experiment Station. Boars were given a 15-day adjustment period at 74°F. On day 15, the temperature in one chamber was elevated to 94°±2°F for 8 hours and lowered to 88°±2°F for the remaining 16 hours during each 24 hr. period. The temperature in the other chamber (control) was maintained at 74°F continuously. Boars in both chambers were exposed to 12 hours of light daily.

Semen quality for each boar was evaluated twice weekly for six weeks during heat stress. After the boars had been maintained under these conditions throughout one complete spermatogenic cycle (42 days), the semen from each boar was used to artifically inseminate 15 sexually mature crossbred gilts. Ninety days after the boars were first subjected to the elevated temperatures, all six boars were castrated and testicular and epididymal evaluations were made. Gilts were slaughtered 30 days postbreeding and their reproductive tracts were recovered to evaluate fertility, embryo survival and early embryo development.

The second replicate of this project will be completed during 1973 and the data now available are too limited to make definite conclusions on the influence of heat stress on fertility in boars. In general, rectal temperatures and respiration rates of boars increased due to elevated ambient temperature. Within two weeks the boars partially compensated

to the elevated temperature and rectal temperatures decreased slightly but respiration rates were still elevated. Semen was collected from all boars during the treatment period, but sperm motility was decreased and there was an increase in the percentage of aged acrosomes.

Dairy

The Undesirable Flavor in Milk Resulting From Grazing Cows on Wheat Pasture

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In Oklahoma and other states of the Southwest, wheat is a very important pasture crop for the grazing of livestock. It is used by dairymen to a limited extent and would be used much more extensively if it did not cause a very objectional flavor in milk. The occurrence of wheat flavor in milk is highly inconsistant. Some dairymen seem never to have difficulty with the problem while others experience the problem even when they practice all recommended control measures. The only solution of their problem is complete abandonment of wheat pasture. The inconsistency in the occurrence of the wheat problem has been responsible for serious economic losses to Oklahoma dairymen. During February, 1972, several tanker loads of milk were rejected because of wheat flavor. On one single day, eleven tanker loads were rejected in Oklahoma City. The problem is most severe in February but not to the same degree each year.

There appear to be many variables associated with the wheat problem. Some of the more important ones appear to be individuality of cows, stage and rate of growth of the wheat plants, the influence of freezing on the wheat plant, feeding and management practices on the dairy farm, etc.

The objectives of this study are: 1. To study the effect of such variables as stage and rate of growth of wheat pasture, the time grazing,