

## PDF - SEMEN QUALITY AND HAEMATOLOGICAL CHARACTERISTICS OF EXOTIC AND CROSSBRED BOARS EXPOSED TO DIFFERENT DURATIONS OF THERMAL STRESS IN THE HUMID TROPICS - researchcub.info ABSTRACT

This study was conducted to investigate the effect of 45 and 60 minutes of exposure of crossbred (LW x Local) and exotic (LW) boars to tropical solar radiation on their body temperature pattern, libido, semen quality and haematological profile. 12 LW x Local and 12 LW boars of 10 months old were used for the experiment. The experiment was carried out in the Piggery Unit of the Department of Animal Science Farm, University of Nigeria, Nsukka for a period of eight weeks (4 weeks for the exposure and, another 4 weeks for the boars to recover). The results showed that, in the exposure period, the rectal temperature of the boars exposed to solar radiation significantly ( $P < 0.05$ ) increased from  $36.80 \pm 0.360^{\circ}\text{C}$  to  $41.88 \pm 0.470^{\circ}\text{C}$  in LW x Local and  $37.23 \pm 0.360^{\circ}\text{C}$  to  $42.04 \pm 0.240^{\circ}\text{C}$  in LW boars and these changes varied significantly ( $P < 0.05$ ) between the durations of the exposure.

The hyperthermic state of the exposed boars adversely affected the libido, semen quality and haematological characteristics. Specifically, the values for sperm progressive motility, sperm concentrations, sperm abnormalities, reaction time, and ejaculation time were significantly ( $P < 0.05$ ) affected between genotypes and between durations of exposure to thermal treatments. The interactions effects of genotype and duration of exposure (G x D) were highly significant ( $P < 0.01$ ) in all these parameters.

Total volume of ejaculate was significantly ( $P < 0.01$ ) higher in LW boars than LW x Local, while volume of gel-fraction, strained ejaculate and semen pH were not significantly ( $P > 0.05$ ) different between genotypes and between durations of exposure. G x D interaction also had no significant effect on these parameters. Total ejaculate volume was not significantly ( $P < 0.05$ ) affected by durations of exposure and G x D interaction. Erythrocyte count, PCV, Hb concentration, MCV, MCH and MCHC were significantly different ( $P < 0.05$ ) between genotype and between durations of exposure to thermal stress. G x D interaction significantly ( $P < 0.05$ ) influenced these parameters. In the recovery phase, the two genotypes were reared under average ambient temperature of  $26.100^{\circ}\text{C}$ . They returned to their normal body temperature of  $37.00 \pm 0.190^{\circ}\text{C}$  and  $36.97 \pm 0.200^{\circ}\text{C}$  for LW x Local and LW boars respectively within period of one hour after withdrawal of heat stress. The LW x Local boars recovered much more rapidly (30-40 minutes) than LW (45-60 minutes). The LW x Local boars recovered much faster than the LW in most of the semen quality and haematological traits under both durations of exposure. The crossbred pigs returned to their post exposure values from the 2nd week for

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