

REPRODUCTIVE PERFORMANCE IN A CENTRAL QUEENSLAND PIG HERD

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As part of a programme of reproductive studies in pigs in a subtropical environment, records from 1964 to 1973 of a Large White herd at Biloela Research Station, Central Queensland were examined to determine between, and within year variations in reproductive performance. Sows were managed on a batch farrowing system under semi-intensive conditions in an environment where summer (Nov. - Mar.) mean daily maximum temperatures ranged from 28.8°C to 33.8°C. Complete mating and farrowing records were available from 569 sows which had an average of 2.25 litters per sow per year with  $11.39 \pm 0.14^{\Delta}$  live pigs per litter (LPL), with a range of 2 to 18 LPL,

Mean monthly conception rates (CR) ranged from 76.2% to 93.4% (overall mean,  $84.43 \pm 1.77$ ) but between and within year variations were not significant, nor was CR significantly correlated with mean maximum temperatures at mating.. There were significant ( $P < 0.01$ ) seasonal variations in LPL with a marked decline in LPL from sows mated during April and May to 8.43 and 8.95 respectively. This decline possibly reflects a paternal contribution due to seminal degeneration induced by high ambient temperatures during the preceding summer, since ambient temperatures at mating were not significantly correlated with LPL.

Mean live piglet birth weights (BW) ranged from 0.8 kg to 1.95 kg (overall mean  $1.22 \pm 0.01$ ) and showed significant between ( $P < 0.05$ ) and within year ( $P < 0.01$ ) variations. Piglets born from sows mated during the summer (Nov. - Mar.) had significantly lower BW ( $P < 0.01$ ) than piglets born from matings in the winter months. These differences were not related to seasonal variations in LPL and were not related to the extent of heat load experienced during gestation, as correlations of ambient temperature during the last trimester or pregnancy and mean BW were not significant. However Todd and Daniels (1968) have suggested that in this environment subsequent growth rates may be depressed by high ambient temperatures.

Data analysed from the 22 sires which had each been mated to five or more sows indicated significant sire effects on both LPL ( $P < 0.05$ ) and on BW ( $P < 0.01$ ) however the sire analyses were confounded with time. Although seasonal trends in some reproductive parameters were noted, it was concluded that high summer ambient temperatures were not a major limiting factor to reproductive performance.

TODD, A.C.E. and DANIELS, L.J. (1968). Proc. Aust. Soc. Anim. Prod. 7: 285.

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<sup>Δ</sup> Given as mean  $\pm$  standard error