

## ABSTRACT

Haematological and serum chemistry reference intervals and prevalence of porcine circovirus type 2 in pigs in Trinidad and Tobago

Kristy Stacy Metivier

There were two broad objectives to the study. Firstly, whole blood and serum were obtained from six categories of pigs for haematological and serum chemistry determinations, with the goal of establishing reference intervals for these parameters in the Trinidad and Tobago swine population. These intervals were expected to reflect differences due to age, gender, and physiological stage, in pigs. The effects of variables on the parameters were investigated using analysis of variance, and reference intervals were defined by the mean values of parameters plus or minus twice their respective standard deviations. The second objective was to determine the seroprevalence of porcine circovirus type 2 (PCV2) in the same swine population using an enzyme-linked immunosorbent assay (ELISA).

Significant gender differences were detected for eosinophil count and creatine kinase ( $P < 0.05$ ). Haemoglobin, haematocrit, mean corpuscular haemoglobin concentration, white blood cell count, lymphocyte count, total solids, potassium, glucose, sodium, chloride, creatinine, total protein, albumin, globulin, bicarbonate, alkaline phosphatase, and aspartate aminotransferase were all

affected by age ( $P < 0.05$ ). Differences between pregnant pigs and lactating sows were found for white blood cell count, neutrophil and lymphocyte counts, magnesium, creatinine, glucose, alkaline phosphatase, and alanine aminotransferase ( $P < 0.05$ ). The numerous differences in mean blood values among age groups and physiological stages, observed in the study, justify the construction of separate reference intervals for the six categories of pigs studied, and provide an alternative set of reference intervals for use when interpreting clinical data at laboratories in Trinidad and Tobago.

Fifty-five percent of the pig population were seropositive for PCV2. Breeders were 1.8 times more likely to be seropositive than nursery pigs (95% CI for odds ratio: 1.3, 2.5) and 3.0 times more likely than growers (95%CI: 2.3, 4.0). Large farms were twice as likely to test positive as small farms (95%CI: 1.6, 2.6). The high prevalence of PCV2 in Trinidad and Tobago emphasizes the need to monitor herds for evidence of clinical cases of porcine circovirus associated disease (PCVAD) and to control those diseases that act as cofactors in the pathogenesis of PCVAD.

Keywords: Kristy Stacy Metivier; haematology; serum chemistry; reference intervals; pigs; porcine circovirus type 2; seroprevalence; Trinidad and Tobago.