Original Articles

Effect of age and gender on haematological and serum chemistry parameters of pigs in Trinidad and Tobago

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Abstract

A total of 361 blood samples were collected from nursery pigs, grower/finishers and adult breeding pigs on 36 farms in Trinidad and Tobago and evaluated for selected haematological parameters and serum chemistry. The erythron and all leukon variables, except eosinophils, were unaffected by gender. Females had higher eosinophil counts than males (P ≤ 0.05). Males were found to have higher creatine kinase values than females (770.65 ± 55.03 vs. 594.39 ± 33.14 U/L, P = 0.006). No differences existed between males and females for the other serum chemistry parameters studied. Age had a significant effect on the erythron parameters evaluated; the haemoglobin, haematocrit, and mean corpuscular haemoglobin concentration showed increasing trends with age (P ≤ 0.05). Adult breeding animals had significantly lower white blood cell counts and lymphocyte counts than the other age groups (P ≤ 0.05), however, age did not affect basophil counts or fibrinogen concentrations (P > 0.05). Similarly, there was no significant age effect for calcium, bilirubin, alanine aminotransferase, or gamma-glutamyl transferase (P > 0.05). Potassium and glucose decreased with age whereas sodium increased with age, and chloride was lower in grower/finishers than in either the adult or the nursery groups (P ≤ 0.05). Creatinine, total protein, and albumin increased with age; globulin and bicarbonate increased significantly from the nursery stage to the grower/finisher stage but decreased to adult values (P ≤ 0.05). Alkaline phosphatase was significantly lower in adults than in the other two groups, whereas aspartate aminotransferase was higher in nursery pigs than in adults (P ≤ 0.05).

Key words: Serum chemistry; Haematology; Pigs; Gender; Age group; Trinidad and Tobago

Introduction

There has been a fifty-five percent increase in pork production in Trinidad and Tobago over the five-year period ending 2002¹. About 90% of the pork produced comes from three large (1000 - 1500 sows) vertically integrated farrow-to-finish operations, and the balance of the pork comes from another 200 registered smaller farms ranging in herd sizes from 2 pigs to 250 sows. The importance of pig production in the country can be gauged from the number of pigs per member of the human population. The Food and Agriculture Organization (FAO) of the United Nations Statistical Databases reported this statistic as 0.05 pigs per capita².

At present, a great deal of interest is focused on trade liberalization, particularly the Free Trade Agreement of the Americas (FTAA). The swine industry in Trinidad and Tobago has accepted the challenge to improve its competitiveness in order to survive in the new FTAA environment. As a consequence, the swine industry has partnered...