

The Effect of Dietary Calcium and Phosphorus Level on Serum Mineral Contents of the Bantul Local Duck within a Day

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ABSTRACT : The study was conducted to determine the effect of various dietary calcium and phosphorus levels on the blood mineral contents of Bantul Local Duck. Two hundred and seventy female ducks, 26 weeks age, were used in the study with a 3x3 factorial pattern, which is a combination of three levels (high, middle, and low) of Ca (3.75; 3.25 and 2.75%) and three levels (high, middle, and low) of P (0.45, 0.35 and 0.25%). Treatment occupied three replication pens, each of which consisted of 10 ducks. At the end of 12 weeks egg production period, one laying duck every pen was observed for serum mineral content. Blood collected for 3 times within a day for each duck, there were: morning (07.00-08.00 a.m.), afternoon (3.00-4.00 p.m.) and evening (10.00-11.00 p.m.) through shank blood arteries. Data recorded were Ca⁺⁺ and P₀₄ contents. The data were analyzed by analysis of variance (ANOVA) using the SPSS computer program. The results showed that there were significant effects (P<0.05) of dietary Ca and P, and time observation on Ca⁺⁺ and P₀₄ contents. The middle dietary Ca content (3.25%) resulted the highest both of Ca⁺⁺ (6.946±1.201 mmol/l) and P₀₄ (8.904±2.331 mg/dl) serum content. The middle dietary P content (0.35%) resulted the highest serum Ca⁺⁺ content (6.894±0.912 mmol/l), but the lowest dietary P content resulted in the highest serum P₀₄ content (8.611±2.294 mg/dl). The serum Ca⁺⁺ content significantly decline from the morning (7.038 ±1.024 mmol/l) until evening (6.010±0,964 mmol/l), and the highest serum P₀₄ content was in the afternoon (9.970±2.621 mg/dl)

Keywords: calcium and phosphorus levels, local duck, serum mineral.