

# Physiological Responses and Performance of Pitalah Ducks Reared on Different Altitude and Dietary Protein Level

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## Abstract

This study aims to evaluate the physiological responses and a performance of Pitalah ducks kept in different altitude and dietary protein level. It consisted of two phases. Phase I study aimed to determine the haematology and T3 hormone (triiodotironine) and triglycerides of Pitalah duck preserved in its native habitat. Phase II study aimed to determine the Physiological responses and a performance Pitalah ducks kept in different altitude and dietary protein level . A total of 30 blood samples taken from 30 female Pitalah ducks being used in the production phase I study, further observed haemoglobin levels (Hb), erythrocytes, and hematocrit. Observations of T3 hormone and triglycerides used blood serum. In the Phase II study, 120 of female Pitalah ducks 14 weeks old reared on high altitude (H) and 120 at low altitude (L). The research was carried out by using Split-plot arranged in Randomized Block Design with the H and L as Main-plot and dietary protein level (14, 16, and 18%) as Sub-plot. Variables were observed Hb, erythrocytes, hematocrit, T3 hormone, triglycerides, feed consumption, egg production (duck day production = DDP), egg mass, feed conversion, egg weight and eggshell thickness. Observations were made after 10% of duck production.

The results of a phase I study showed that the ducks reared on natural habitat with a semi-intensive system have Hb content, erythrocytes, hematocrit, T3, and triglycerides, respectively,  $18.6 \pm 1.6$  (g/100 ml),  $2.79 \pm 0.22$  (million / mm),  $42.33 \pm 3.09$  (%),  $1.67 \pm 0.53$  (nmol/l),  $142.56 \pm 35.03$  (mg / dl). In the phase II study result that the maintenance of ducks in the L have hemoglobin, erythrocyte, hematocrit, and T3 hormone markedly lower than H, but has a highest triglycerides than H. Ducks fed protein to 18% has a highly significant erythrocytes compared to the protein 14 and 16%, with rates significantly higher hematocrit, but there was no significant difference in Hb. There was no interaction between the altitude and the level of protein. Performance of Pitalah duck production on high altitude (H) is better than the low altitude (L). The increasing of protein up to 18% tend to increase the performance of production.

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