

***EFFECT OF FEED ADDITIVES OF EDAMAME PROTEIN
CONCENTRATE AND THE ADDITION OF LEMURU FISH OIL
(Sardinella lemuru) IN FEED ON THE PHYSICAL QUALITY OF
DUCK EGGS***

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ABSTRACT

This study aimed to determine the effect of adding edamame protein concentrate and lemuru fish oil as feed additives on the physical quality of duck eggs, as well as to identify the optimal dosage for enhancing egg physical quality. The research was conducted using a Completely Randomized Design (CRD) with 75 ducks divided into 5 treatments and 5 replications. The treatments consisting of varying levels of edamame protein concentrate and lemuru fish oil were as follows: P0 = control (no treatment), P1 = 1% lemuru fish oil + 0.5% edamame protein concentrate, P2 = 1.5% lemuru fish oil + 0.5% edamame protein concentrate, P3 = 1% lemuru fish oil + 1% edamame protein concentrate, and P4 = 1.5% lemuru fish oil + 1% edamame protein concentrate. Data were analyzed using Analysis of Variance (ANOVA). The addition of edamame protein concentrate and lemuru fish oil as feed additives significantly increased eggshell thickness and egg white index ($P < 0.05$). However, it had no significant effect on egg weight, eggshell weight, yolk index, yolk color, or Haugh Unit ($P > 0.05$). The optimal dosage was identified in the combination of 0.5% edamame protein concentrate and 1.5% lemuru fish oil (P2) to improve the physical quality of duck eggs. Further research is recommended to increase the inclusion levels of this additive combination to optimize duck egg physical quality for functional egg production.

Keywords: *Laying Ducks, Edamame Protein Concentrate, Lemuru Fish Oil, Physical quality of eggs.*