

The Effect of Adding 20ml Snail Probiotics (*Achatina fulica*) to Low-Protein Rations on the Exterior and Interior Quality of Purebred Chicken Eggs During Storage

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ABSTRACT

*This study aimed to evaluate the effect of adding snail (*Achatina fulica*) probiotics at 20 ml/kg feed to a low-protein diet on the interior quality (albumen pH and Haugh Unit) and exterior quality (egg shape index) of layer chicken eggs stored for various storage periods (0, 7, and 14 days). This experimental research utilized a Completely Randomized Design (CRD) with a factorial arrangement involving storage duration and feed formulation. Data were analyzed using Analysis of Variance (ANOVA) followed by the Least Significant Difference (LSD) test at a 5% significance level. The results revealed that storage duration had a statistically significant effect ($P < 0.05$) on albumen pH and Haugh Unit (HU). As storage duration increased to 14 days, the average albumen pH increased from 7.21 to 7.79, while the HU value decreased from 78.59 (Grade I) to 41.88 (Grade III). The supplementation of snail probiotics, rich in Lactic Acid Bacteria (LAB) and essential amino acids, effectively supported nitrogen retention efficiency, thereby retarding the degradation rate of the ovomucin-lysozyme complex and suppressing pH elevation caused by CO₂ release. Conversely, the egg shape index was not significantly affected ($P > 0.05$) by either treatment or storage time, maintaining an average range of 77.36% to 79.13% (oval/normal shape category), confirming that exterior egg traits are predominantly governed by genetic factors and reproductive tract anatomy. It is concluded that incorporating 20 ml of snail probiotic into a low-protein diet successfully maintains interior egg quality within edible standards up to 14 days of storage without compromising exterior physical characteristics.*

*Keywords: *Achatina fulica*, Egg Shape Index, Haugh Unit, Layer Chicken Egg, Low-Protein Diet, Snail Probiotics.*