

(The Effect of Immersion Duration in Tobacco Stem Extract on the Physical, Chemical, and Microbiological Characteristics of Chicken Eggs)

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ABSTRACT

*Chicken eggs are one of the most popular sources of animal protein and are widely consumed by the Indonesian population. This study aims to determine the effect of soaking duration in tobacco stem extract on the physical, chemical, and microbiological characteristics of chicken eggs. The background of this research is based on the fact that eggs are highly perishable due to their high water and nutrient content, making them an ideal medium for microbial growth. Tobacco stem extract (*Nicotiana tabacum*) was chosen as a natural preservative because it contains bioactive compounds such as alkaloids, flavonoids, and tannins, which possess antimicrobial and antioxidant activities. The study used a Completely Randomized Design (CRD) with one factor, namely soaking duration (0 hours/control, 6 hours, 12 hours, and 24 hours), and three replications. The observed parameters included weight loss, air cell size, organoleptic properties, weight and volume of egg white and yolk, foaming capacity and stability, egg white index (EWI) and egg yolk index (EYI), moisture content, peroxide value, Haugh Unit, and total plate count (TPC) using *Salmonella Typhi* bacteria. The results showed that treatment A3 (24-hour soaking) was optimally able to maintain egg quality during storage up to the 21st day of observation, with the 21-day test results still meeting the requirements of SNI 3926:2023 for chicken eggs.*

Keywords: *chicken eggs, tobacco stem extract, antimicrobial, antioxidant.*