

**Effects of “*Boomi*” (*Litsea glutinosa*) Wax and “*Dawul Kurundu*” (*Neolitsea cassia*) Wax on Internal and Sensory Attributes of Chicken Eggs Stored Under Room Temperature**

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by

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## ABSTRACT

Surface coatings of eggs are used to extend the shelf life and minimize economic loss. Edible mineral oil is used as a coating material but several problems associated with it and plant waxes are tested as alternatives. “Boomi” (*Litsea glutinosa*) and “dawul kurundu” (*Neolitsea cassia*) is found throughout Sri Lanka. Bark of “Boomi” and “dawul kurundu” are widely used in ayurvedic medicine due to their antibacterial properties. But, information on these waxes on egg quality attributes does not exist. Objective of this research was to check the effect of “boomi” and “dawul kurundu” waxes as an external coating material on shelf life, internal quality and sensory attributes of chicken eggs stored under room temperature. Total of 372 freshly laid brown, medium sized, clean eggs were purchased from a layer farm in Demodara. Eggs were individually weighed and coated with “boomi” wax (1.0:6.5), “dawul kurundu” wax (01:10) and mineral oil while non coated eggs were used as negative control. Weight loss, change in air sac volume, Haugh unit, yolk color, albumen and yolk pH, yolk index, FTIR analysis, *Salmonella* test and sensory attributes were determined at weekly basis. Albumen and yolk pH increased with storage. But it is significantly lower in mineral coated eggs ( $p < 0.05$ ). Whereas Haugh unit and yolk index decreased during storage in wax coated and non-coated eggs ( $p < 0.05$ ). Grades of non-coated, “boomi” wax coated and “dawul kurundu” wax coated eggs were changed from AA to B within 04 weeks whereas in mineral oil coated eggs remain in AA. Weight loss of wax coated eggs were significantly higher compared to mineral oil coated eggs ( $p < 0.05$ ). *Salmonella* sp. were detected in several weeks during storage conditions showing permeability of the microorganisms. FTIR analysis reveals that the no chemical changes occur due to the wax. Increase of air sac was higher in noncoated eggs ( $5.39 \pm 0.3$ mm) after 42 days compared to “boomi” wax ( $4.59 \pm 0.2$ mm), “dawul kurundu” wax ( $3.27 \text{ mm} \pm 0.3$ ) and mineral oil ( $1.19 \pm 0.3$ mm) coated eggs. Thus, study showed that “boomi” and “dawul kurundu” waxes are not a suitable coating material for poultry eggs to store under room conditions.

**Keywords:** Boomi tree wax; Chicken egg; Internal; Quality; Mineral oil