

Effects of Hik Tree (*Lannea coromandelica*) Wax on Internal and Sensory Attributes of Chicken Eggs Stored Under Room Temperature

P.M.U. Pushpakumara¹, H.M.J.C. Pitawala² and E.D.N.S. Abeyrathne¹

¹*Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka*

²*Department of Science and Technology, Uva Wellassa University, Badulla, Sri Lanka*

To increase the shelf life and to preserve the nutrient content under room temperature mineral oil used as an external coating material for eggs. But it is very expensive and dry slowly than other coating materials. Hik tree (*Lannea coromandelica*) is a tropical tree grown in dry zone in Sri Lanka and its wax has film forming properties. However, information on Hik tree wax coating on egg quality attributes does not exist. Therefore, this study was done to check the effect of Hik tree wax as an external coating material on shelf life, internal quality and sensory attributes of chicken eggs during storage under room temperature. Total of 306 white, medium sized, clean eggs were purchased from a commercial layer farm in Mahiyanganaya. Eggs were individually weighed and arranged under completely randomized design to 03 different coating treatments as Hik wax (HW), mineral oil (MO), and non-coated (NC) and stored under room temperature ($27\pm 2^{\circ}\text{C}$) for 6 weeks. Weight losses, Haugh unit (HU), albumen and yolk pH, air sack volume and microbial analysis for *Salmonella* sp. were determined weekly with 03 replicates. Sensory attributes of eggs were measured using 30 untrained panelists. FTIR analysis was conducted to analyze the structural changes in egg albumen. Results revealed that weight losses were minimum in MO coated eggs than in other treatments ($p<0.05$). HU decreased from 88.00 to 57.34 significantly in NC eggs compared with HW or MO ($p<0.05$). Albumen and yolk pH values increased during the storage in all treatments ($p>0.05$) and air sack volume increased from 0.41 cm to 0.71 cm during storage ($p>0.05$). However, grade of coated eggs reduced from AA to B within 04 weeks. All coated eggs were negative for *Salmonella* test during the study period. Color of the egg yolk did not change due to coating material ($p>0.05$). FTIR data confirmed that no chemical changes occurred due to wax coating. In conclusion, the present study confirmed that Hik tree wax can be used as an external coating material replacing MO.

Keywords: Hik tree wax, Mineral oil, Internal quality, *Salmonella*, Sensory properties