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Quality characteristics and shelf life of chicken eggs coated with different edible oils and stored at room temperature

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Chicken eggs have been considered as an energy source of protein. The quality of egg decreases with increasing storage time. Therefore, this research aimed to investigate the effect of different edible oil coating on egg shells and study the qualities and shelf life of chicken eggs. Freshly laid eggs were coated with sunflower oil, coconut oil, palm oil and gingelly oil and stored at 30℃ for 5 weeks. Albumin pH, Haugh unit, Yolk Index and sensory qualities were determined at weekly intervals during storage. Initially, Albumin pH, Haugh unit and Yolk Index of the non-coated eggs were 8.74±0.01, 71.93±3.10 and 0.34±0.01 respectively and these parameters were unable to measure at the end of 5 weeks because non-coated egg yolks were spoiled. Eggs coated with sunflower oil, coconut oil, palm oil and gingelly oil had the Albumin pH of 8.80±0.08, 8.75±0.03, 8.76±0.01 and 8.74±0.02 respectively on the initial day and at the end of the 5th week storage the albumin pH was increased. The freshly laid egg albumin pH is 7.6 to 8.5 and this increased up to 9.7 during storage. Also, the Yolk Index were 0.33±0.003, 0.36±0.03, 0.34±0.01 and 0.32±0.008 respectively on the initial day and these values were decreased during storage. There was no significant ($p > 0.05$) difference observed for Haugh Unit in oil-coated eggs during storage. Microbial changes were within the acceptable limit during 5 weeks of storage. The sensory evaluation showed that the palm oil-coated eggs had the best quality at end of the storage. Therefore, Palm oil could be used for coating of chicken eggs to extend the shelf life without affecting the quality for 5 weeks of storage at 30°C.

Keywords: Chicken eggs, Edible oil coating, Quality parameters, Shelf life, Storage

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