Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Effect of Length and Storage Methods on the Chemical Composition of Exotic Chicken and Japanese Quail Eggs

Iyabode Dudusola

Obafemi Awolowo University, Ile - Ife, Nigeria, Department of Animal Sciences, Nigeria

Abstract

The quality characteristics and proximate composition of the eggs of chicken and quail were compared. A total of 200 chicken eggs were collected from 28 weeks old Harco layers and 200 Japanese quail (Coturnix coturnix japonica) eggs from 21 weeks old quail birds. Eggs were randomly selected and divided into 5 groups of 10 eggs per group for both chicken and quail eggs respectively and stored for 21 days. The eggs were treated with storage methods (room temperature, refrigeration, oiling, black polythene bags) with room temperature taking as control and observed at different periods 0, 3, 7, 14, 21 days.

Weight loss was measured and proximate analysis was carried out. Data was analysed using analysis of variance (ANOVA) with treatments (storage methods) and durations as the 2 main effects.

Egg weight loss for chicken and quail progressively increases for all the storage durations. For all treatments, the values related to egg weight decreased as weight loss increases from day 0 to 21. There was significant differences ($p < 0.05$) in the moisture content and crude protein of chicken eggs; and no significant ($p > 0.05$)differences were observed for quail eggs at the different storage duration. There was no significant difference ($p > 0.05$) in the ash content of chicken eggs at the different storage duration while the ash content of quail eggs stored for day 3 and day 7 were significantly ($p < 0.05$) lower than those of other days.

The proximate composition for all storage methods were not significantly different ($p > 0.05$) from each other throughout the duration of storage. The result showed that the weight loss, moisture content, ash, ether extract and crude protein of chicken and quail eggs for all the storage methods were not significantly different.

Comparison of the length and method of storage of both chicken and quail eggs shows that they can both be stored for 3 days without deterioration using any of the four storage methods. In both eggs, refrigeration was the best storage method even though polythene bag could be an alternative for chicken eggs while oiling could be an alternative for quail eggs when stored for longer periods.

Keywords: Egg quality., egg weight loss, proximate composition

Contact Address: Iyabode Dudusola, Obafemi Awolowo University, Ile - Ife, Nigeria, Department of Animal Sciences, Old Ede Road, 20005 Ile - Ife, Nigeria, e-mail: dipodudu2000@yahoo.com