Effect of partial replacement of dietary maize with cassava peel meal on egg quality characteristics of chicken during storage

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Abstract

Effect of dietary cassava peel meal (CPM) inclusion in partial replacement for maize on egg quality characteristics during storage was investigated in this study. In a completely randomized design, ISA brown pullets (n=3,000) aged 20-week were assigned to three dietary treatments. Diets A, B, C contained CPM at 0, 10 and 17.5%, respectively. At week 32, eggs were pooled per treatment (n=180) and assessed for quality attributes in 0, 4, 8, 12, 16 and 20 days of storage (DOS). Results revealed that dietary CPM significantly (p<0.05) lowered albumen height (4.69-0.20mm), albumen weight (37.23-11.55g), yolk height (11.81-4.20mm) and the Haugh unit (63.86-38.32) with increased DOS while yolk weight (25.08-47.45g) and yolk diameter (26.24-48.52mm) increased. The shell thickness, egg length, egg weight, egg width and shape index were not significantly (p>0.05) affected by the treatments. Effect of interactions of CPM inclusion and DOS on albumen height was significantly (p<0.05) different, but for treatments A (81.56mm) and B (80.85mm) (p>0.05) at zero DOS. Yolk colour was highest (9.13) for eggs from C but similar (p>0.05) to those from A (8.78). In conclusion, egg qualities reduction occurred in DOS irrespective of dietary CPM or maize. However, the reduction rate of egg quality in DOS was significantly influenced by the dietary inclusion of CPM.

Keywords: Cassava peel mix, Duration of storage, Haugh unit, Yolk index, Egg quality attributes.