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Julio 08 al 10 de 2024



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*“Bienestar Animal desde la
seguridad alimentaria y la
innovación tecnológica”*



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SISTEMAS DE PRODUCCIÓN Y AGROINDUSTRIA

Eggshell quality of eggs produced by brown hens raised in cage-free system

Qualidade da casca de ovos de pedreiras marrons provenientes de sistema livre de gaiolas

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Introduction: Egg production is essential to human consumption due to its low cost and nutritional aspects since they are rich in proteins, carbohydrates, lipids, vitamins, minerals, and fatty acids.

Justification: Several parameters can influence egg quality, such as bird age, housing system (conventional cage, cage-free, and, free range), and storage (period and temperature). **Objective:** This study aimed to evaluate the influence of the storage environment, bird age, and storage period on the physical characteristics of the shell of eggs from commercial laying hens housed in a cage-free system. **Methods:** The experiment involved 243 eggs of Hy-Line Brown® hens, which were distributed in a completely randomized design with a triple 3x2x3 factorial arrangement represented by three ages (36, 53, and 69 weeks), two storage temperatures (ambient and refrigerated), and three storage periods (10, 20, and 30 days), totaling 18 treatments. Eggshell weight (g), eggshell strength (kgf), and specific gravity (g/cm³) were measured and the eggshell percentage was calculated in relation to egg weight. Data were analyzed using R-project®. **Results and Discussion:** differences were observed on the eggs from advanced-age hens (69 weeks), which presented higher eggshell weight as compared to the other ages on day 10th, regardless of the storage environment. On the same day, eggs from 36 and 53 weeks presented their lower eggshell weight. Because of their size, the eggs from advanced-aged hens (69 weeks), presented lower eggshell strength as compared to the other ages. The specific gravity presented a sharper decline in eggs in ambient temperature. Eggs from advanced age laying hens (69 weeks) presented the lowest specific gravity, regardless of the storage environment. **Conclusion:** the advancing age of the laying hens reduced the eggshell quality due to less proportional calcium deposit in eggshells, regardless of the storage environment and period. Finally, storage environment, period, and bird age influence the quality of eggs stored for 30 days.

Keywords: Ambient temperature, eggshell quality, laying hens, refrigeration, storage

Palabras clave: Temperatura ambiente, calidad de la cáscara de huevo, gallinas ponedoras, refrigeración, almacenamiento

Productive characteristics of the “miniature” hen (*Gallus gallus domesticus*)

Características productivas de la gallina “miniatura” (*Gallus gallus domesticus*)

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Introduction: “Miniature” hens and roosters, also known as Kikiriki, Arlequines, Habanero, Azteca, Currito, Filipino, are birds of the *Phasianidae* family considered as companion or ornamental birds. They are known as “miniature” hens due to their size, which resembles a pullet in the growth phase with the morphological characteristics of an adult hen. It has been considered that “miniature” hens have an approximate measurement of 25% of the size of a *Gallus gallus domesticus* “normal” since they can weigh between 300 to 450 g and measure between 20 to 30 cm in height with an average lifespan of 5 to 6 years. **Objective:** To announce, some morphological and productive aspects of the miniature hen. **Methods:** Seven miniature hens of approximately 6 months of age were housed individually in individual scratching posts of 90 x 90 cm and were fed with commercial hens feed of 17% protein and 2800 kcal/kg and freshwater *ad libitum*. The study variables were oviposition frequency (d), egg weight (g), yolk color, DMS fan was used, shell thickness (mm) and albumen height (mm). The data were captured and analyzed with Microsoft Excel using a descriptive statistics of frequency table, mean, standard deviation. **Results and Discussion:** 45.45% of the hens had an oviposition frequency between 1 to 2 days, 34.09% between 2 to 3 days, 15.91% between 3 to 4 days. The maximum average egg weight found was 27.36±4.42 g (CV= 19.38); the minimum was 21.81±1.52 g and the heaviest was 36.10±1.22 g and in neither case was a double yolk observed. The yolk color was 8.50±2.71, the shell thickness was 0.32 ±0.05 and the albumen height was 3.89±1.22. **Conclusion:** The “miniature” *Gallus gallus domesticus* has productive characteristics like a “normal” hen and in addition to being an exhibition or companion hen, it can be considered acceptable as a production hen.

Keywords: Egg production, miniature hen, morphology

Palabras clave: Producción de huevo, gallina miniatura, morfología