COMPARATIVE ANALYSIS OF EGG MASS AND INTERNAL STRUCTURE FROM DIFFERENT REARING SYSTEMS: ORGANIC, FREE-RANGE, BARN, AND CAGE HOUSING

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Abstract

Eggs represent one of the most valuable animal products for human nutrition, and their quality and composition are strongly influenced by the rearing system of laying hens. The present study aimed to evaluate the influence of different rearing systems on egg mass and internal structural components in Lohmann Brown-Classic laying hens. Egg samples were collected from four housing systems: organic, free-range, barn (intensive floor), and cage (intensive battery). Sampling was carried out three times per week, with eggs analyzed on the same day to avoid storage-related effects. A total of 288 consumer eggs were randomly selected throughout the experimental period.

Results indicated that eggs from the organic system recorded the highest average mass (63.49 g), followed by those from free-range hens (62.91 g). In contrast, eggs from intensive systems were lighter, with averages of 61.88 g (barn) and 61.21 g (cage). These findings suggest that increased freedom of movement positively influences egg productive parameters, with housing systems closer to natural conditions favoring improved egg development compared to intensive rearing.

Key words: *egg quality, free-range system, hen eggs, intensive system, rearing systems*