

# Impact of Layer Breeder Flock Age and Strain on Mechanical and Ultrastructural Properties of Eggshell in Chicken

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### **Abstract :**

This investigation was carried out to study mechanical eggshell traits (weight, specific gravity, eggshell thickness and eggshell breaking strength) and ultrastructural properties from layer breeder hens at different ages (25, 47 and 61 weeks). The present results showed that the brown eggshell had significantly higher specific gravity, shell thickness and breaking strength compared to white eggshell. Concerning breeder flock age, it could be noticed that the age of hen significantly affected mechanical eggshell traits, where specific gravity, shell thickness and breaking strength decreased significantly as the breeder age was advanced. With respect to eggshell ultrastructural properties, the brown eggshell had significantly higher effective thickness (palisade %) compared to white ones. Opposite trend was observed for relative cap thickness. With regard to layer breeder flock age effect, the results indicated that the effective thickness (palisade %) was significantly decreased as the layer breeder flock age increased. Conversely, the relative cap thickness was increased with age increased. With respect to confluence trait, the present results observed that both brown and white eggs owned shells with similar values of confluence. Significant difference observed between strains regarding fusion (early or late) trait. Type B's, type A's and alignment traits in eggshell produced from older breeders was significantly higher than that of younger breeders.

### **Key Word :**

Eggshell traits, breeder hen age, older hens

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