

## EFFECT OF VARYING PROTEIN LEVELS AND PRESERVATION METHODS ON EGG PRODUCTION PERFORMANCE AND INTERNAL EGG QUALITIES OF JAPANESE QUAILS IN A SEMI-ARID ENVIRONMENT

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### ABSTRACT

The study was conducted to determine the effect of varying protein levels and preservation method on internal egg qualities of Japanese quails. A total of 180 birds were randomly allotted into three dietary treatments in a completely randomized design (CRD) replicated six times. A factorial arrangement of 3x4x4 which involves 3 protein levels, 4 storage method and 4 time intervals was designed to determine the effect of storage methods on internal egg quality characteristics. The birds were fed diets containing 15, 20 and 25% crude protein respectively. The trial lasted for 10 weeks during which egg production, egg weight and egg quality characteristics were monitored. Results indicated that egg weight, hen day egg production and hen house egg production were significantly higher ( $P < 0.05$ ) for quails fed diet containing 25% CP. Internal egg quality characteristics were significant ( $P < 0.05$ ) between treatment means except for albumin weight, yolk weight, yolk height, yolk width, yolk colour and yolk index. The effects of storage method was found to be significant ( $P < 0.05$ ) for all traits except for albumen weight, yolk weight, yolk index and yolk colour. Storage time was found to be significant ( $P < 0.05$ ) for all the traits observed. However, lower egg quality was recorded with increased storage time ( $P < 0.05$ ). Refrigeration and immersion in oil and stored at room temperature provide significant ( $P < 0.05$ ) value for Haugh unit, indicating a minimal loss in quality. It was concluded that increasing dietary protein level of 25% will increase the production performance and internal egg quality of Japanese quails. Refrigeration and immersion in oil were best rated for preserving internal egg qualities of the Japanese quails.

**Keywords:** Protein level; preservation method, egg quality, Quails and Semi-arid environment.