**OPTIMAL ISOLEUCINE INTAKE AND EFFICIENCY OF UTILIZATION FOR EGG-LAYING JAPANESE QUAILS**

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Estimating amino acid requirements for poultry accurately constitutes an important step forward mitigating environmental nitrogen excretion. Following these context, determining efficiency of amino acid utilization for maintenance and egg protein accretion is essential to develop models, which better predict optimum amino acid intake of laying birds. A 7-week trial was conducted to determine optimal isoleucine intake (Ileopt) and its efficiency of utilization (EU) for Japanese quails. Five hundred and sixty 28-week-old Japanese quail were divided into 7 treatment groups, with 7 replicates with 5 quails. The 7 Ile levels tested ranged from 1.70 to 8.15 g/kg and diets were obtained using the dilution technique. The Ileopt for egg production, egg weight and egg output were estimated regressing the variables against Ile intake using broken-line (BL) model. Addionally, Ile deposition in egg output (IleD) and Ile intake were fitted to BL model, both in metabolic weight (BW0.67) basis, to estimate EU as follows: IleD = IleDmax + U × (R - AAI), where: IleDmax is the maximum IleD in egg output, U is the slope of the function and R is the Ile intake for maximum response (IleDmax). The EU was obtained as follows: k = (IleDmax / R) × 100. The estimated daily Ile intake for maximum egg production (86%), egg weight (10.9g) and egg output (9.34g/bird/d) were 103, 134 and 117mg/bird, respectively. The Ile intake for IleDmax, and IleDmax were estimated in 379mg/bird/day and 197mg/g egg output, respectively, and the EU for egg output deposition were 52%.

**Keyword:** efficiency of amino acid utilization