

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

DECREASE OF DIGESTIBLE METHIONINE PLUS CYSTINE WITH CHOLINE AND BETAINE SUPPLEMENTATION ON PERFORMANCE OF JAPANESE QUAIL

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Methionine, choline and betaine are metabolically interrelated, due to the participation of choline and betaine as methyl group donors. The objective of this study was to analyze the performance of Japanese quail fed diets formulated with partial digestible methionine + cystine replacement by choline and betaine. The experiment lasted 112 days and were used 450 birds with 180 days of age, in a completely randomized design with five treatments, ten replicates and nine birds per experimental unit. The experimental diets were formulated based on corn-soybean and contained 19% of crude protein and 2.850 Kcal/Kg of metabolizable energy. The experiment was based using five different types of feeds, being a basal feed (BF) with 0.588% M + C dig (T1), BF + CL choline (T2), BF + Betaine HCl (T3), BR + CL choline + Betaine HCl (T4), and BF + DL Met (T5) maintaining the equimolar base to reach 0.888% of M+C dig in feed. The parameters analyzed were production rate (%), egg weight (g egg/bird/day), egg mass (g/egg/day), feed intake (g/bird/day), feed conversion (g feed/g egg and kg/dozen) by the Student Newman Keuls (SNK) test. No significant effects of digestible methionine + cystine replacement, and choline and betaine supplementation levels were observed for the production rate, egg mass and feed conversion, and the mean values respectively were $78.53 \pm 6.97\%$, 9.48 ± 0.87 g/egg/day, 25.50 ± 1.12 g/bird/day, 2.70 ± 0.23 g feed/g egg and 0.39 ± 0.03 kg/dozen. The egg weight was influenced ($P=1,72$) by the digestible methionine + cystine replacement, and choline and betaine supplementation levels with higher egg weight (12.29 g) when the quail fed with BR + CL choline + Betaine HCl and less egg weight (11.77 g) when fed with 0.588% M + C dig. However, supplementation with choline and betaine has probable influenced the protein synthesis and mobilization of fats, increasing the weight of the egg. For the results obtained, it can be concluded that in terms of performance, digestible methionine + cystine can be partially replaced by the choline and betaine on the equimolar base.

Keywords: egg weight, equimolar base, essential amino acid, laying

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