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Area of work: Nutrition and production of non-ruminants.

Digestible methionine + cystine requirements for laying Japanese quails from 60 to 145 days of age supplemented with organic minerals

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Methionine and cystine are amino acids considered limiting in poultry diets, with methionine being the first limiting amino acid necessary when feed ingredients are not sufficient to meet the needs of bird development. Cysteine is a non-essential amino acid synthesized in the animal's body from methionine. The objective was to determine the nutritional requirements of methionine + cystine for Japanese quails (*Coturnix coturnix japonica*) in the egg laying phase aged 60 to 145 days, under CEUA-UFRPE license nº.5372030323. 175 Japanese quails (Cortunix cortunix japonica) were used. Of the Fujikura line in the laying phase, aged 59 days and weighing ± 190 grams distributed in a completely randomized design, with five treatments and five replications, totaling 25 experimental units. The treatments consisted of five inclusion levels of digestible methionine + cystine 0.742; 0.842; 0.942; 1.042 and 1.142% in diets.
The performance variables measured were the average egg production per bird/day for each treatment, feed consumption, egg weight, total egg mass per treatment and feed conversions per mass and per dozen. Duration of 84 days, and was subdivided into three egg collection cycles, each lasting 28 days. There was a quadratic effect of methionine + cystine levels on the percentage of egg laying in the three evaluation cycles, reaching optimal levels of 0.91% in the first cycle, 0.91% in the second cycle and 0.94% in the third cycle. There was also a quadratic effect for feed conversion per mass and per dozen eggs, reaching optimal levels of 1.00 and 0.96% for mass conversion and 0.94% for feed conversion per dozen eggs produced.
The level of digestible methionine + cystine determined as a requirement for Japanese quails in the laying phase in the period from 60 to 145 days of age was 0.96%, which corresponds to consumption of 252 mg/bird/day of digestible methionine + cystine and methionine + cystine/lysine ratio of 0.835%.
Keywords: amino acids, egg production, layers, laying.