

Cost of diets and productive performance of Japanese quails fed acidulated soy soapstock and lecithin

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This study aimed to evaluate the feed costs and productive performance of Japanese quails fed diets containing acidulated soy soapstock and lecithin. One hundred and ninety-two 54-day-old birds (initial average body weight 164.36 ± 4.97 g) were used. Birds were randomly assigned to eight treatments in a 2x2x2 factorial arrangement, with two types of oil (acidulated soy soapstock – ASS and degummed soybean oil – DSO), two levels of oil supplementation (4 and 8%), and the presence (1%) or absence of lecithin soy (LEC). The treatments were: T1 – (basal diet – BD) with 4% of ASS; T2 – BD with 4% ASS and 1% LEC; T3 – BD with 8% ASS; T4 – BD with 8% ASS and 1% LEC; T5 – BD with 4% DSO (control diet); T6 – BD with 4% DSO and 1% LEC; T7 – BD with 8% DSO; T8 – BD with 8% DSO and 1% LEC. There were 12 replications per treatment and the experimental unit was a pen with two birds each. All the diets were isonutritive, containing 2.800 kcal/kg AME (apparent metabolizable energy) and 20% crude protein, according to the requirements of quails. The calculation of dietary costs was based on the prices of the ingredients obtained in April 2016 in Pelotas/Brazil, with the following values (R\$/kg): corn 1.02; soybean meal 1.60; inert 0.20; vitamin and mineral premix 6.48; limestone 0.27; dicalcium phosphate 1.30; BHT 31.78; DL-methionine 49.00; L-lysine 23.15; ASS 1.50; DSO 2.08; and LEC 1.85. A three-way interaction of factors on egg production and feed conversion by mass was found. The birds fed diets that associated lecithin with 8% ASS (T4) had the highest rate of produced eggs (91.5%), that was significantly different from T2 (82.4%) and T8 (85.1%). The birds fed T4 showed the best conversion ($2.63\text{g}\cdot\text{g}^{-1}$) differing significantly from T2 ($3.25\text{g}\cdot\text{g}^{-1}$) and T8 ($3.10\text{g}\cdot\text{g}^{-1}$). The final costs of the diets had the following values (R\$/100kg): T1- 170.01; T2- 170.50; T3-169.57; T4- 169.56; T5- 174.72; T6- 175.04; T7- 178.59; and T8- 179.14. Economic analysis has shown that the T4 diet had the lowest cost (R\$ 169.56) among all the other diets. This diet had the lowest cost to provide high egg production without negatively affecting feed conversion by egg mass. In conclusion, according to the estimated cost of diets and the productive performance of Japanese quails, the utilization of 8% of ASS associated with 1% of lecithin in the diets is the best recommendation.

Keywords: egg, energy, nutrition, productive performance, price, quail.

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