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饲粮色氨酸水平对黄羽肉种鸡生产性能、抗氧化功能及血清生化指标的影响

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Die…an Level Affects Performance, Antioxidant Function and Serum Bio…ces of Yellow-Feathered Broiler Breeders

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摘要
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摘要 本试验旨在研究饲粮色氨酸水平对黄羽肉种鸡生产性能、抗氧化功能及血清生化指标的影响,以期探明肉种鸡饲粮的适宜色氨酸水平。试验采用单因素4水平试验设计,将360只28周龄黄羽肉种鸡随机分成4组,每组3个重复,每个重复30只。对照组饲喂基础饲粮,基础饲粮色氨酸水平为0.16%,3个试验组分别在基础饲粮中添加0.02%、0.04%和0.06%的色氨酸。预试期2周,正试期8周。结果表明:1)与对照组相比,各试验组均显著提高了肉种鸡种蛋的受精率、孵化率和出雏率(P<0.05),其中以0.18%色氨酸水平组最佳。2)与对照组相比,0.18%色氨酸水平组使初生苗鸡重提高了3.99%(P<0.05),使血清谷胱甘肽过氧化物酶活性、总蛋白和白蛋白含量分别提高了12.58%、13.40%和4.02%(P<0.05)。3)各试验组较对照组有提高血清总抗氧化能力、超氧化物歧化酶活性及还原性谷胱甘肽含量,降低血清丙二醛和尿酸含量的趋势,但差异均不显著(P>0.05)。4)肉种鸡产蛋率、平均蛋重和料蛋比各组间均无显著差异(P>0.05),但平均日采食量各试验组较对照组均显著提高(P<0.05)。综上所述,黄羽肉种鸡饲粮色氨酸适宜水平为0.18%。

关键词: 黄羽肉种鸡 色氨酸 生产性能 抗氧化功能 血清生化指标

Abstract: The experiment was conducted to study the effects of dietary tryptophan levels on performance, antioxidant function and serum biochemical indices of yellow-feathered broiler breeders, and aimed to discuss a suitable supplemental level of tryptophan for the broiler breeders. Using a single factor and 4 levels arrangement of treatments design, a total of 360 yellow-feathered broiler breeders (28-week-old) were randomly allocated into 4 groups with 3 replicates in each group and 30 broiler breeders in each replicate. Broilers in control group were fed a basal diet which containing 0.16% tryptophan, and the others in experimental groups were fed the basal diet supplemented with 0.02%, 0.04% and 0.06% tryptophan, respectively. Pre-treatment period was 2 weeks and the experiment lasted for 8 weeks. The results showed as follows: 1) compared with the control group, each experimental group significantly increased the fertility rate, hatchability and birth rate (P<0.05), and the 0.18% tryptophan group was the highest among them. 2) Compared with the control group, the average body weight in the 0.18% tryptophan group increased 3.99% (P<0.05), the activity of glutathione peroxidase and the contents of total protein and albumin increased 12.58%, 13.40% and 4.02% (P<0.05), respectively. 3) The experimental groups had a trend of increasing the superoxide dismutase activity, total anti-oxidant capability and the content of reduced glutathione hormone, there also had a trend of reducing malondialdehyde and uric acid concentration in serum, however, there was no significant difference among those groups (P>0.05). 4) There was no significant difference among the groups in laying rate, average egg weight and feed/egg weight (P>0.05), but the average daily feed intake in experimental groups was significantly elevated compared with the control group (P<0.05). In conclusion, the optimal tryptophan level in corn-soybean meal diet of yellow-feathered broiler breeders is 0.18%.

Keywords: yellow-feathered broiler breeders, tryptophan, performance, antioxidant function, serum biochemical indices

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