

# The effect of different levels of tryptophan on performance, some blood parameters, antioxidant capacity and intestinal morphology of broiler chicken

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## Abstract

Dietary consumption of low crude protein (CP) diets in poultry can decrease the feed costs and environmental pollution. In addition to reducing feed costs, improved broiler welfare and environmental sustainability are the other benefits of feeding chickens with reduced CP. This experiment was performed to evaluate the effect of different levels of tryptophan in low protein diets on performance of broiler chickens. This study was conducted using 200 one-day old male broilers of Ross 308 strain from 8 to 21 days old with 4 treatments, 5 repetitions and 10 birds per replication. Experimental treatments which were adjusted based on Brazilian tables included: 1- Control treatment, 2- Recommended level of tryptophan in the diet with 2% low protein, 3- 10% higher than the recommended level of tryptophan in the diet with 2% low protein and 4- 20% more than the recommended level of tryptophan in the diet with 2% low protein. The results showed that the treatment with 10% tryptophan increased the weight (721.8 g) of chickens. But reducing dietary protein reduced feed intake. Also, 10% tryptophan had a significant effect on glucose, triglycerides, total protein and globulin. But cholesterol and albumin were not affected by treatments. Diet with 10% tryptophan increased superoxide dismutase (171.6) and glutathione peroxidase (179.4). High dietary protein (control treatment) increased blood urea and uric acid and also increased litter nitrogen. None of the treatments had significant effect on intestinal morphology. Totally, the results of the recent experiment improve performance and antioxidant capacity.

**Key words:** Blood parameters, Tryptophan, Broiler chickens, Low protein diets, Performance

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