

Response to dietary supplementation of glutamine in broiler chickens subjected to transportation stress

ABSTRACT

The main purpose of this study was to determine effects of glutamine supplementation on performance and blood parameters including Hsp70 and acute phase protein when chicken were subjected to transportation stress. A total of four hundred day-old-male Cobb-500 chicks were obtained directly from a local hatchery. The chicks were allotted to two groups as: immediate placement (1 hour after hatching) with access to feed and water and placement after 24h transportation without access to feed and water. The experiment consisted of a factorial arrangement of 2 different diets and 2 different time of placement. Chicks from each placement group were fed either basal diet or basal diet + 1% glutamine from 1 to 21 days of age. The results indicated that dietary glutamine improved the body weight gain and feed conversion ratio significantly when chicks were subjected to delayed or immediate placement. In conclusion, supplementing chicken with glutamine in diet can reduce negative effects of delayed access to feed and water during transportation. Moreover, APP concentration and HSP70 level were positively affected when chicks supplemented with glutamine in the diet.

Keyword: Acute phase protein; Broiler; Glutamine; Oxidative stress biomarker; Transportation stress