

Effects of Zn-L-selenomethionine on carcass composition, meat characteristics, fatty acid composition, glutathione peroxidase activity, and ribonucleotide content in broiler chickens

ABSTRACT

The effects of organic Zn-L-selenomethionine (Zn-L-SeMet) at 0.3 ppm on carcass composition, meat characteristics, fatty acid composition, glutathione peroxidase activity, and ribonucleotide content were compared against the commercial inorganic sodium selenite (Na-Se) and the combination of the two, in commercial broilers. A total of 540 one day-old chicks were assigned at random to 3 dietary treatments : i) commercial inorganic selenium as control or T1, ii) a 1:1 ratio of inorganic and organic selenium as T2, and iii) organic selenium as T3. Carcass composition, meat characteristics, cholesterol content, fatty acid composition, and ribonucleotide content were generally unaffected by treatments. However, discrepancy were significantly observed in glutathione peroxidase activity (GSH-Px) and water holding capacity, with organic selenium showing higher glutathione peroxidase activity ($p < 0.01$) and lower shrinkage loss ($p < 0.05$), respectively. These findings could be explained by the contribution of organic selenium in bioavailability of GSH-Px. However, having conducted in a commercial close house system with sufficient amount of nutritional supplementation, the present study demonstrated little or no effects of organic Zn-L-SeMet on meat characteristics, fatty acid composition, and ribonucleotide content (flavor characteristic) in broiler chickens.

Keyword: Selenium source; Body composition; Meat quality traits; Cholesterol content; Flavor