

Comparison of Two different Commercially Available Vitamin-Mineral Premixes in Broiler Diets on Growth Performance and Meat Quality of Broiler Chicken

W.M.S.S. Weerasinghe^{1*}, K.G.U.I.P Gunawardana¹, S.P.M. Priyadarshana¹, S. Anand Kumar¹, P.G.J.C De Silva², N.M.N. Nambapana¹, D.K.D.D. Jayasena¹

¹Department of Animal Science, Uva Wellassa University, Badulla, 90000, Sri Lanka

²Ceylon Grain Elevators, Colombo, 01500, Sri Lanka

This study was conducted to determine the effectiveness of two different vitamin-mineral premixes on performance, meat quality and meat composition of broiler chicken. A total of ninety ($n = 90$) day-old male broiler chicks were randomly assigned into three dietary treatments. Each treatment comprised three replicates and ten broiler chicks were included in each replicate. Broilers were allocated to one of the three diets and fed for 42 days in a completely randomized design. The dietary treatments included two different premixes as T₁ (Basal diet + Vitamin-Mineral premix 1) and T₂ (Basal diet + Vitamin-Mineral premix 2) and the control group (T₀) fed with the basal diet only. The highest ($p < 0.05$) daily body weight gain ($56 \text{ gbird}^{-1}\text{day}^{-1}$) and the lowest ($p < 0.05$) feed conversion ratio (1.68) of broiler birds were recorded from the birds fed T₁ diet. The highest (34%) and the lowest cook loss (33%) ($P < 0.05$) were recorded from T₂ and T₁ treatments, respectively. The highest ($p < 0.05$) manganese concentration (0.065 mg/L) and the crude protein percentage (26%) of chicken breast meat were recorded from the birds fed T₁ diet and the lowest manganese concentration (0.0213 mg/L) was recorded from the birds fed control diet. The highest (9%) and the lowest (4%) ash percentages ($P < 0.05$) were recorded from T₂ and T₁ treatments, respectively. The pH, color, water holding capacity and texture of broiler breast meat were not affected ($p > 0.05$) by dietary treatments. In conclusion, the supplemental dietary vitamin-mineral premix 1 has made beneficial effects on performance and meat composition of broiler chicken than the dietary vitamin-mineral premix 2.

Keywords: Broiler chicken, feed conversion ratio, meat composition, weight gain