EFFECTS OF DIETARY SUPPLEMENTATION OF *TRICHODERMA PSEUDOKONINGII* FERMENTED ENZYME POWDER ON SERUM ANTIOXIDANTIVE STATUS IN BROILER CHICKENS

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Abstract

Filamentous fungi have been found to exert antioxidative properties by producing phenolic compounds during fermentation, suggesting they could be a promising source of natural antioxidants to avert negative factors caused by oxidative stress, further preventing economic losses in poultry production. This study was conducted to evaluate *Trichoderma pseudokoningii* enzyme powder (EP) as broiler dietary supplementation with its effect on antioxidative status of broilers. *In vitro* experiment showed that total phenolic and freulic acid content of EP was 4.79±0.35 mg QE /g DW and 4.38±0.32 M/g DW, respectively. A total of 240 day-old Ross 308 male broiler chick were randomly subjected to four treatments supplementing with EP at 0% (control), 0.1%, 0.2%, or 0.4% for 35 days. Serum were collected and analyzed for the antioxidant index during the termination of the trial. Results of serum antioxidant activity showed that 0.2% and 0.4% EP supplementation significantly increased the superoxide dismutase activity at starter phase, while this effect was only observed at 0.4% EP group at finisher phase and the overall period. In addition, catalase activity was elevated in all EP supplemented group compared to the control group at finisher phase and the overall period, while 0.1% EP seems to have no effect at the starter period. Serum melanoaldehyde concentration was not affected by the supplementation of EP. These results suggested EP as a potential feed additive to improve broiler antioxidative status.