EFFECTS OF DIETARY SUPPLEMENTATION OF *TRICHODERMA PSEUDOKONINGII* FERMENTED ENZYME POWDER ON GROWTH PERFORMANCE, INTESTINAL MORPHOLOGY AND MICROFLORA IN BROILER CHICKENS

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Abstract

Microbial source nonstarch polysaccharides (NSP) degrading enzymes play an important role in the animal feed industry. They have been supplemented exogenously to animals to prevent adverse effects due to NSP-rich feedstuffs, such as a wheat based diet. This study was conducted to evaluate *Trichoderma pseudokoningii* enzyme powder (EP) as broiler dietary supplementation with its effect on the growth performance, gastrointestinal health, intestinal morphology of broilers. *In vitro* experiment showed that xylanase and cellulase activities of EP was 487.96±14.14 IU/g and 18.55±0.54 IU/g, respectively. A total of 240 day-old Ross 308 male broiler chick were randomly subjected to four treatments, namely diets supplemented with dry EP at 0% (control), 0.1%, 0.2%, or 0.4% for 35d. Results showed that EP supplemented group had improved body weight, weight gain and FCR compared to the control group at starter phase (1-21d). EP also significantly increased concentration of cecal lactic acid content at the finisher phase (21-35d). The lactic acid bacteria count in the ileum was higher in the EP supplemented group at both starter phase and finisher phase, while cecum coliform count of all EP supplemented chicken was lower at 1-35d. Moreover, villi:crypt ratio of jejunum and ileum in all EP treated groups were both significantly higher compared to the control group. These results suggested EP as a potential feed additive to improve broiler performance while providing optimal intestinal environment.