

THE EFFECT OF DIFFERENT LEVELS OF PHYTASE ENZYME AND ORGANIC ACID ON PERFORMANCE AND CARCASS CHARACTERISTICS OF BROILERS FED LOW PHOSPHOROUS DIETS

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INTRODUCTION

Since monogastrics especially poultry has no efficient endogenous phytase, proximately 60 to 70 percent of phosphorous existed in feed has been not available in ration based on oilseed and cereals. Therefore, poultry ration has been supplemented with phytase enzyme. In addition, optimal phytase enzyme activity depends on intestinal pH ranging between 2-2.5 or 5. To cause the optimal pH, Organic acids have been applied. So, the present study was carried out to investigate the effect of different levels of phytase enzyme and organic acid on performance and carcass characteristics of broilers fed low phosphorous diets.

MATERIALS AND METHODS

A total of 336 Ross 308 broiler chicks were randomly assigned into the 7 experimental treatments with 4 replicates of 12 birds each. Experimental treatments consisted of 2 levels of phytase (0, 500 IU/kg) and three levels of organic acid (0, 600 and 1000 g/ton) in P-deficient diets as a 3×3 factorial arrangement. Feed intake and body weight was evaluated at 14, 28 and 42 d of age. To evaluate the relative inner organ weights, 2 birds of each cage were slaughtered at 28 and 42 d of age and calculated as live body weight percentage.

RESULTS AND DISCUSSION

Results of trial showed that incremental levels of organic acid led to a significant ($P<0.05$) increase in feed intake and weight gain and an improvement in feed conversion ratio (FCR) at 14 d of age, but it had no significant effect in other periods of trial. In addition, feed intake, weight gain and FCR were uninfluenced by phytase enzyme supplementation and their combinations. Furthermore, the relative inner organ weights such as liver, heart, carcass, abdominal fat, pancreas and intestine were not affected by either alone or in combination. An increase in performance of broilers fed on organic acids might be attributed to an improvement in nutrient digestability (Nourmohammadi et al., 2010).

Key words: phytase, organic acid, performance, carcass characteristics, broilers

REFERENCES

- Nourmohammadi R, Hosseini SM, Farhangfar H. 2010. Influence of citric acid and microbial phytase on growth performance and carcass characteristics of broiler chickens. *American Journal of Animal Veterinary Science*, 5: 282-288.



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