

## EFFICACY OF *ESCHERICHIA COLI*-DERIVED PHYTASE ON PERFORMANCE, BONE MINERALIZATION AND NUTRIENT DIGESTIBILITY IN MEAT-TYPE TURKEYS

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**Summary.** A total of 600 male BUT Big 6 turkeys were randomly allocated to 60 pens, 10 birds in each. Each of six treatment groups consisted of 10 pens (replicates), 100 birds in each treatment, at a stocking density of 2.5 birds per m<sup>2</sup>. The turkeys were reared until 112 days (16 weeks) of age, and they were fed diets based on corn, soybean meal and wheat. Group I (positive control - PC) received a diet with a standard phosphorus (P) and calcium (Ca) content at all feeding stages, and group II (negative control - NC) was fed a diet with a lower P and Ca content. Groups III – VI received the same diet as group II, but with graded levels of *Escherichia coli* phytase, i.e. 125, 250, 500 and 1000 FTU/kg, respectively. The performance parameters of turkeys (body weight, weight gain, feed intake and feed conversion), tibia mineralization parameters (ash, Ca, P, specific gravity, breaking strength) and the apparent ileal digestibility of dry matter (DM), P and Ca were determined in the study. A slaughter analysis (carcass yield, proportions of muscles and abdominal fat) was also carried out. It can be concluded that the supplementation of *E. coli* phytase at a level of 500–1000 FTU/kg diet provided the best effects, with performance results very close to those noted in the PC group. All phytase-supplemented groups were characterized by better tibia bone mineralization as reflected by a higher ash content, and a higher (significantly higher in group VI) phosphorus content of tibia ash compared with the NC group (II). Graded levels of *E. coli* phytase had variable effects on ileal DM digestibility. A curvilinear dose-response was observed for P digestibility, with significant effects of phytase at a minimum dose of 250 FTU/kg. Ca digestibility was also improved by phytase, and the noted increase was significant in all groups. There were no statistical differences in carcass quality parameters between the dietary treatments.

**Keywords:** turkeys, phytase, performance, slaughter yield, P retention, tibia mineralization.