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Efficacy of Elevated Levels of a *Citrobacter braakii* Phytase in Turkey Poult Diets

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The efficacy of elevated levels of RONOZYME® HiPhos was assessed for turkey poults fed a low-P corn/SBM-based diet with an estimated 0.25% phytate. 180 day-old female turkeys (BUT 9) were divided into 60 replicate groups of 3 poults to equalize weights. Dietary treatments included a negative control (NC) with 0.27% non-phytate P. Treatments 2, 3 and 4, resp., were composed of the NC with 1,000, 2,000, or 4,000 FYT/kg feed of a *Citrobacter braakii* bacterial 6-phytase (RONOZYME® HiPhos) expressed in *Aspergillus oryzae.* Treatment 5 was a positive control (PC) without phytase but with 0.10% additional non-phytate P as dicalcium phosphate. Ca was formulated to be 1.2% across diets. Chemical analyses confirmed several nutritional targets, including total P, Ca and phytase. Each treatment was replicated 12 times in a completely randomized block design. The 21-day live performance, bone mineralization, and blood concentration were ascertained , and 25-day apparent retention of Ca and P gauged phytase efficacy.

As dietary phytase increased, tibia ash and body weight increased (P<0.05) linearly, while F/G, Ca and P retention increased (P<0.05) curvilinearly. Blood P and Ca mirrored retention measurements. Poults fed 2,000 and 4,000 FYT phytase/kg feed experienced significantly higher tibia ash and Ca and P retentions than PC. The 4,000 FYT phytase/kg improved (P<0.05) body weight, F/G and tibia ash relative to PC. Elevated dietary phytase levels – sometimes called super doses – of RONOZYME® HiPhos boosted live performance and measurements of mineral nutrition in turkey poults.

Treatment	Phytase, FYT/kg feed	Body weight, g	F/G	Tibia ash, %	Ca retention, %	P retention, %
T1 (NC)	0	368c	1.709a	37.2d	56.4bc	58.2c
T2	NC + 1,000	464b	1.485bc	44.6c	59.1ab	72.8b
T3	NC + 2,000	458b	1.492bc	47.7b	62.8a	76.2ab
T4	NC + 4,000	515a	1.419c	49.8ab	64.2a	78.7a
T5 (PC)	0	438b	1.541b	43.8c	55.4c	60.7c

[abc]Different superscripts within a column differ (P<0.05)

KEYWORDS
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