

# EVALUATION OF THE EFFICACY OF HIGH LEVELS OF MICROBIAL PHYTASE IN BROILERS

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## ABSTRACT

Three experiments were conducted to evaluate the efficacy of high levels of microbial phytase in broiler diets. In experiment one (EXP 1), phytase was included in the diets at 0, 250, 500, 10,000, and 20,000 PU/kg diet. In experiments two and three (EXP 2 and 3), phytase was included in the diets at 0, 500, 2,500, 12,500, and 62,500 PU/kg diet. In all three experiments, dietary Ca and P were reduced to fit industry recommendations. In EXP 1, phytase supplementation improved ( $P < 0.05$ ) feed intake (FI), body weight gain (BWG), feed:gain (F:G), bone ash (BA), P digestibility (PD), and reduced ( $P < 0.05$ ) total litter P (TLP) by 53%. In EXP 2, phytase supplementation decreased ( $P < 0.05$ ) FI, had no effect ( $P > 0.05$ ) on BWG, and improved ( $P < 0.05$ ) F:G, BA, and PD. In EXP 3, phytase supplementation decreased ( $P < 0.05$ ) FI, improved ( $P < 0.05$ ) BWG, F:G, BA, PD, and reduced ( $P < 0.05$ ) TLP by 33%. In young broilers (hatch to 21 days), high levels of dietary phytase improved BWG above the NRC and positive control diets (EXP 1 and 3). However, as broilers reached market weight there were no differences ( $P > 0.05$ ) in BWG. Results of this research indicate that microbial phytase was efficacious in broiler diets. However, there were no added benefits to feeding high levels of dietary phytase (in excess of current recommendations) to broilers raised to market weight.