

P263 Dose response of commercial phytases in broilers fed cornSBM-animal byproducts based diets low in non-phytate phosphorus

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An 18d trial was conducted to evaluate the efficacy of different dosages of commercial phytases in broilers fed corn-SBM-meat and bone meal-poultry byproduct meal-feather meal based mash diets low in non-phytate phosphorus (npp). A total of 2,260 Cobb-500 d-old male chicks were randomly assigned to 13 treatments with 8 or 9 replicates of 20 broilers each. Treatments 1 to 4 consisted of 0.23% (negative control, NC), 0.28%, 0.33% and 0.38% (positive control, PC) npp diets, respectively. Treatments 5 to 13 consisted of NC plus 250, 500 or 1000 FTU/kg diet of phytase A, B or C, respectively. All diets were formulated to contain 0.74% Ca using limestone. Main ingredients plus Ca and P sources were analyzed before formulations. Nutritional levels were 25kcal and 5% AAs lower than Rostagno et al. (2011) for all diets. Performance from 1-18d, tibia ash percentage and P equivalence at 18d were analyzed using 1-way ANOVA and Tukey test at $P \leq 0.05$. Regression analysis were carried out considering treatments 1 to 4 in order to calculate phosphorus equivalence for treatments supplemented with phytases. Body weight gain (BWG) was higher for PC but not different from 0.33% npp, phytase A (250, 500 and 1000FTU) and phytase B at 500 and 1000FTU. Phytase C was not different from NC at any level. Feed intake (FI) was higher for PC, phytase A at 250 and 1000FTU and phytase B at 1000FTU than 0.23 and 0.28% npp. Livability and FCR did not present differences ($P > 0.05$). However, tibia ash (%) was higher for PC and phytase A at 250 and 1000FTU; without significant difference ($P > 0.05$) from 0.33% npp, phytase A at 500FTU and phytase B 1000FTU. Phytase C at 250 and 1000FTU was not different from NC for this parameter. BWG and tibia ash (%) presented linear improvement with graded levels of npp. Feeding phytase A at any level or phytase B at 1000 FTU resulted in higher P equivalence values when considered BWG or tibia ash. In summary, body weight gain and tibia ash percentage data indicates that phytase A and B are more efficient than phytase C; and in general, phytase A had a solid response requiring lower dosages to reach the 1000 FTU's performance levels of Phytase B and C.

Key Words: animal byproduct, broiler, phytase, dose response