

Public Abstract

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Title:EFFECTS OF PHYTASE ON ILEAL PHOSPHOROUS AND CALCIUM DIGESTIBILITY OF CORN AND SBM INDIVIDUALLY OR IN COMBINATION IN MALE BROILERS

Limited information exists on true phosphorus digestibility in corn and soybean meal (SBM) in broiler chicks, and how it is affected by microbial phytase (an enzyme). The objectives of the current study were to estimate true P digestibility (TPD) of corn, SBM and a combination of corn and soybean meal (C-SBM) using the regression method approach, and to determine the influence of phytase on the TPD values and to determine the additive TPD of corn and SBM. Broiler chicks (800 Ross 308 male) were raised on a commercial C-SBM-based starter diet from d 1 until d 15 and then switched to experimental diets until 23 d in accordance to World Poultry Science Association (WPSA) recommendations. Birds were then fed the experimental diets for a minimum of 7 d before the contents of the latter half of the ileum were collected. Dietary treatments consisted of 3 graded levels of corn, SBM or C-SBM with and without 500 U/kg of phytase supplementation, making a total of 18 dietary treatments. Feed intake (FI) increased in chicks fed various levels of corn and C-SBM with phytase. There was no difference among birds fed SBM supplemented with phytase, but there was an ingredient level effect. Tibia ash was affected by phytase supplementation from an increase (48.62 to 51.70% in corn and C-SBM 49.60 to 52.28%) was seen with increased ingredients levels and phytase supplementation. There was also an increase from 47.30 to 51.94% in Tibia ash % with increasing levels of SBM with and without phytase. The AIPD decreased as the ingredient level increased in corn and SBM, and increased when phytase was supplemented. The TIPD estimate of SBM (52.0%) is more reasonable than the extremely low values obtain for corn (-7.2%) and C-SBM (5.6%). Corn and C-SBM contained inorganic P, whereas SBM diets contained no inorganic P. Phytase improved TIPD in corn (+38 points, to 60.4% and C-SBM (+14 points, to 19.5%), however it didn't in SBM (+7 points, to 59.9%).