EFFECTS OF A MULTI-CARBOHYDRASE AND PHYTASE COMPLEX ON GROWTH PERFORMANCE OF BROILERS FED WHEAT-CORN SOYBEAN MEAL BASED DIETS REDUCED IN METABOLIZABLE ENERGY AND NUTRIENTS

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Multi-carbohydrase and phytase complex (MCPC) supplementation could alleviate the negative effects of dietary reduction levels in metabolizable energy (ME) and nutrients on performance. The aim of this study was to investigate the effects of MCPC supplementation on growth performance of chickens fed wheat-corn soybean meal based diets reduced in ME, digestible amino acids (dAA), available phosphorus (avP) and calcium. A total of 3150 one-day-old Ross 308 chicks were randomly assigned to 7 dietary treatments (15 pens x 30 birds). The birds were fed 3 negative control diets (NC) with sequentially reduction in ME (-3, -4, or -5%) and dAA (-3, -4.5, or -6%) and fixed reduction in avP (-0.18% unit) and calcium (-0.16% unit) with or without MCPC (1,800 xylanase U and 1,000 phytase U/kg diet). A nutritionally adequate positive control (PC) diet was fed for comparison. Body weight (BW) and feed intake (FI) were measured at 35 and 42 days of age, and body weight gain (BWG) and feed conversion ratio (FCR) were calculated. Results showed that nutrient reductions negatively affected the BWG and FCR (*P* < 0.0001) but without effect on FI (*P* > 0.4) in comparison with the PC diet at 35 and 42 days. The addition of MCPC to NC diets totally restored growth performance and FCR to the same levels as the PC diet. This study showed that supplementation of MCPC in diet would allow for significant reductions in nutrients and energy of diet fed to broilers, up to 5% reduction in ME, 6% in dAA and 0.18% in avP and 0.16% in Ca, thus significantly decreasing feed cost.

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