

عنوان مقاله:

Effect of combination of high-dose phytase, citric acid and carbohydrases on performance of broiler chickens fed wheat-canola meal-based diets with very low content of non-phytate phosphorus

محل انتشار:

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خلاصه مقاله:

An experiment was conducted, from 22 to 42-d-post-hatch, to evaluate the effect of different combinations of carbohydrases (CHS), citric acid (CA) and high-dose phytase in wheat-canola meal-based diets with very low content of non-phytate phosphorus (NPP) on growth performance, plasma calcium (Ca) and P and tibia ash (TA) content of broiler chickens. One hundred and ninety two 21-d-old male chicks were allocated into 24 pens and fed one of six dietary treatments. The dietary treatments were T1) a negative control (NC, 1.68 g/kg NPP), T2) NC + CHS (500 mg/kg) + 2,000 phytase FTU/kg, T3) NC + CHS + CA (20 mg/kg) + 2,000 phytase FTU/kg, T4) NC + CHS + 4,000 phytase FTU/kg, T5) NC + CHS + CA + 4,000 phytase FTU/kg or T6) a positive control (PC, 4.2 g/kg NPP). The birds fed on PC had higher average daily gain (ADG, $P < 0.01$), average daily feed intake (ADFI, $P = 0.05$), plasma P ($P < 0.001$) and TA content ($P < 0.001$), and lower feed conversion ratio (FCR, $P < 0.05$) and plasma Ca ($P < 0.001$) than those fed on NC. Although the dietary inclusion of additives in NC + CHS + 2000, NC + CHS + CA + 2000, NC + CHS + 4000 and NC + CHS + CA + 4000 significantly improved the growth performance, plasma P and TA content of chicks compared with that of the NC group, all of them could not give rise the results statistically to the similar amount to those of the PC group. NC + CHS + CA + 2000, NC + CHS + 4000 and NC + CHS + CA + 4000 showed similar effects on ADG and plasma P compared to those of the PC group. The data of FCR revealed that NC + CHS + CA + 2000 and NC + CHS + CA + 4000 had a comparable result compared to that of the PC group. NC + CHS + 2000, NC + CHS + CA + 2000, NC + CHS + 4000, NC + CHS + CA + 4000 and PC groups revealed similar effects on ADFI and plasma Ca. The data of TA content showed that NC + CHS + 4000 and NC + CHS + CA + 4000 had similar result compared to that of the PC group. The results showed when diets containing very low content of NPP are supplemented with CA, a combination of phytase (2,000 FTU/kg) and CHS could result in growth comparable to the diet containing adequate NPP.

کلمات کلیدی:

broiler performance, carbohydrases, citric acid, high-dose phytase

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