Effect of phytase with or without multienzyme supplementation on performance and nutrient digestibility of young broiler chicks fed mash or crumble diets

Youssef A. Attia,1,2 Walid S. El-Tahawy2
Abd El-Hamid E. Abd El-Hamid,2 Saber S. Hassan2 Antonino Nizza3
Mahmoud I. El-Kelaway2

1Arid Land Agriculture Department, King Abudlaziz University, Jeddah, Saudi Arabia
2Department of Animal and Poultry Production, Damanhour University, Egypt
3Dipartimento di ScienzeZootecniche eIspezionedegliAlimenti, Università di Napoli Federico II, Italy

Abstract

A total of 210 unsexed 1-day old Arbor Acres broiler chicks were wing banded and randomly distributed among 30 cages of 7 birds per cage keeping equal initial BW during days 1-20 of age. A factorial design (2×3) was used in which there were two feed forms (mash vs crumble diet) and three enzyme treatments (unsupplemented, phytase, phytase plus multienzyme).
Each treatment was replicated 5 times with 7 chicks per replicate. Body weight (BW), body weight gain (BWG) and feed conversion ratio (FCR) of fed chicks were significantly improved when the crumble diet was administered.
However, feed intake of chicks fed on the crumble feeds was significantly lower than those fed the mash diet. Digestibility of ether extract and crude fiber was significantly greater in groups fed the crumble diet than those fed the mash diet. Enzyme supplementation significantly and similarly increased growth and reduction index, and improved FCR. Also greater digestibility of crude protein and crude ash was observed but growth during days 8-14 of age and crude fibre digestibility were significantly greater in chicks receiving the multienzyme plus phytase supplement than those receiving phytase alone. Crumble feed supplemented with multienzyme resulted in the highest performance and nutrient digestibility of broilers during days 1-20 of age.

**Key words:** Broilers, Form of feeds, Enzymes, Phytase, Digestibility.

**Published in:** *Italian Journal of Animal Science* 2012; 11:e56

*doi:10.4081/ijas.2012.e56*

**References**
AI-Harthi, M.A., 2006. Impact of supplemental
feed enzymes, condiments mixture or their combination on broiler performance, nutrients digestibility and plasma constituents. Int. J. Poultry Sci. 5:764-771.


Tufarelli, V., Dario, M., Laudadio, V., 2011. Feed intake in guinea fowl, layer hen and pheasant as influenced by particle size of pelleted diets. Int. J. Poultry Sci. 10:238-
