

Author: [ADVANCED](#) | Volume Page
Keyword: |



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1349-0486

PRINT ISSN : 1346-7395

The Journal of Poultry Science

Vol. 46 (2009) , No. 3 pp.217-223

[\[PDF \(257K\)\]](#) [\[References\]](#)

Effects of Supplemental Microbial Phytase and Xylanase on the Performance of Broilers Fed Diets Based on Corn and Wheat

[Mingbin Lü^{1\)}](#), [Defa Li^{1\)}](#), [Liming Gong^{1\)}](#), [Yingjun Ru^{2\)}](#) and [Velmurugu Ravindran^{3\)}](#)

1) China Agricultural University, China

2) Danisco Animal Nutrition, Singapore Science Park III, Singapore

3) Institute of Food, Nutrition and Human Health, Massey University, New Zealand

(Received: October 20, 2008)

(Accepted for publication: March 26, 2009)

A floor-pen trial was conducted to evaluate the effect on broiler performance of adding phytase and xylanase, alone or in combination, to diets based on corn and wheat. A cohort cage trial was also conducted to determine the influence of treatments on tibia ash and nutrient utilization. Five diets were formulated and included a positive control (PC) containing adequate levels of available P and calcium; a negative control (NC) with reduced levels of available P and calcium; and three NC diets supplemented with phytase, xylanase or phytase plus xylanase. Weight gain and feed efficiency were depressed ($P < 0.05$) in birds fed the NC diet, but performance was improved to the level of birds fed the PC diet when the NC diet was supplemented with 500FTU/kg phytase. The addition of xylanase alone to the NC diet had no effect ($P > 0.05$) on broiler performance. However, the combination of xylanase and phytase improved the feed efficiency compared with the NC diet. Adding phytase to the NC diet improved ($P < 0.05$) the tibia ash contents. The addition of phytase and xylanase individually had no effect ($P > 0.05$) on energy metabolizability. However, when combined together, the two enzymes were additive in their effects on energy utilization. Individual additions of phytase and xylanase had no effect ($P > 0.05$) on ileal digesta viscosity, but the xylanase-phytase combination lowered ($P < 0.05$) digesta viscosity compared with the NC diet. Enzyme treatments had no effects ($P > 0.05$) on the intestinal morphology and intestinal digesta counts of lactobacillus and anaerobic bacteria. Overall, these results suggest that combining phytase and xylanase in diets based

on corn and wheat will be beneficial in terms of the feed efficiency and energy utilization of broilers.

Keywords: [broiler chickens](#), [corn](#), [phytase](#), [wheat](#), [xylanase](#)

[\[PDF \(257K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Mingbin Lü, Defa Li, Liming Gong, Yingjun Ru and Velmurugu Ravindran “Effects of Supplemental Microbial Phytase and Xylanase on the Performance of Broilers Fed Diets Based on Corn and Wheat” J. Poult. Sci., Vol. 46: 217-223. (2009) .

doi:10.2141/jpsa.46.217

JOI JST.JSTAGE/jpsa/46.217

Copyright (c) 2009 by Japan Poultry Science Association



[Japan Science and Technology Information Aggregator, Electronic](#)

