



Effects of Monensin Sodium and Xylanase on Broiler Growth Performance

B.M. Owings, C.J. Delfelder, R.S. Beyer, C.R. Stark, C.E. Evans, A.D. Yoder, and C. K. Jones



Department of Animal Sciences and Industry, Kansas State University, Manhattan

Introduction

- Recent trends in society there has been an increase in consumer prease on lowering the amount of antimicrobial used in poultry feed
- One of the largest problem's is that antimicrobials have been used for so long to improve digestibility
- The main goal is to replace antimicrobials with other alternative enzymes such as exogenous xylanase
- The over all question is if xylanase can replase monensin sodium or not

Objective

The objective of this experiment was to imporve nutrient digestibility by replacing monensin sodium with xylanase, and if this impact differs based on the fiber level of the diet.

Experimental Procedures

- A total of 216 Cobb 1-d-old chicks were feed 1 of 6 dietary treatments
- 6 birds/cage and 6 cages/treatment
- The birds were fed ad libitum in battery cages for 21 days
- Treatments: 1) Corn-based with no monensin sodium or xylanase; 2) Wheat-based without monensin sodium or xylanase; 3) Corn-based with monensin sodium but no xylanase; 4) Wheat-based with monensin sodium but no xylanase; 5) Corn-based with xylanase but no monensin sodium; and 6) Wheat-based with xylanase but no monensin sodium
- BW and feed intake were recorded weekly
- The data was then analyzed by using SAS

Conclusions and Future Work

- The research done in this project suggests that xylanase improves carbydrate digestibility in wheat-bases diets and restoring FCR to that of corn-based diets
- It would be ideal to preform more tests on weither the setting would effect of the antimicrobial

Experimental Results

Table 1. Effect of grain type, monensin sodium, or xylanase inclusion level on broiler growth performance.¹

Grain Type	Monensi	Xylnas	n	1-d BW, g	21-d BW, g	Feed intake, g	FCR, g/g
	n	e					
Corn	No	No	6	43.8	848.5 ^a	54.0 ^a	1.46 ^{ab}
Wheat	No	No	6	44.0	879.0 ^{ab}	57.5 ^{bc}	1.52 ^c
Corn	Yes	No	6	43.9	940.4 ^c	58.6 ^{bc}	1.44 ^a
Wheat	Yes	No	6	44.2	932.1 ^c	57.4 ^{bc}	1.50 ^{bc}
Corn	No	Yes	6	44.0	868.6 ^a	56.3 ^{ab}	1.45 ^a
Wheat	No	Yes	6	44.2	926.0 ^{bc}	59.6 ^c	1.47 ^b
SEM				0.64	14.91	1.15	0.014
P-value				0.90	<	< 0.0001	0.006

^{abc}Values in columns not sharing the same superscript letter are significantly different ($P \leq 0.05$).

¹Treatments consisted of mash diets manufactured from either corn or wheat with or without 0.10 g/kg monensin sodium (Coban 90; Elanco Animal Health, Greenfield, IN) or with or without 16,000 BXU/kg beta 1-4, endo-xylanase enzyme (Econase XT; AB Vista, Marlborough, UK) supplementation. Treatments were fed to 216 Cobb chicks (6 birds/cage).

Figure 1: (Top left) Shows the broiler chicks in the battery cage with there food tray (shown) and the water tray on the other side of the cage.

Figure 2: (Bottom left) Shows a majority of the battery cages, where you can see the heater portion, along with the food tray.



Support

- Koch Industries Inc.

