

# Use of exogenous xylanase for improvement of nutrient digestibility in broiler chicks

M.M. Moniz, 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

- Due to consumers growing concern of the use of antimicrobials on livestock, the industry is working towards finding alternatives.
- Antimicrobials not only provide protection against bacterial infection but also help with nutrient digestibility.
- Exogenous xylanase is an enzyme that is known to improve nutrient digestibility in high fiber diets.
- However, there is no knowledge if exogenous xylanase can be used as a replacement for antimicrobials such as monensin sodium.

## Objective

- The objective of this experiment was to evaluate if xylanase can replace monensin sodium to improve nutrient digestibility, 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 fed 1 of 6 dietary treatments ad libitum in battery cages containing 6 birds per cage for 21 days.
- All 6 treatments were corn or wheat based formulated with either 0.10 g/kg monensin sodium (Coban 90; Elanco Animal Health, Greenfield, IN) or 16,000 betaxlylanse units/kg beta 1-4, endo-xylanase enzyme (Econase XT; AB Vista, Marlborough, UK).
- Body weight and feed intake were recorded weekly to determine BW gain, total feed intake, and FCR.
- Data were analyzed using the GLIMMIX procedure of SAS with cage as the experimental unit and treatment as the fixed effect.

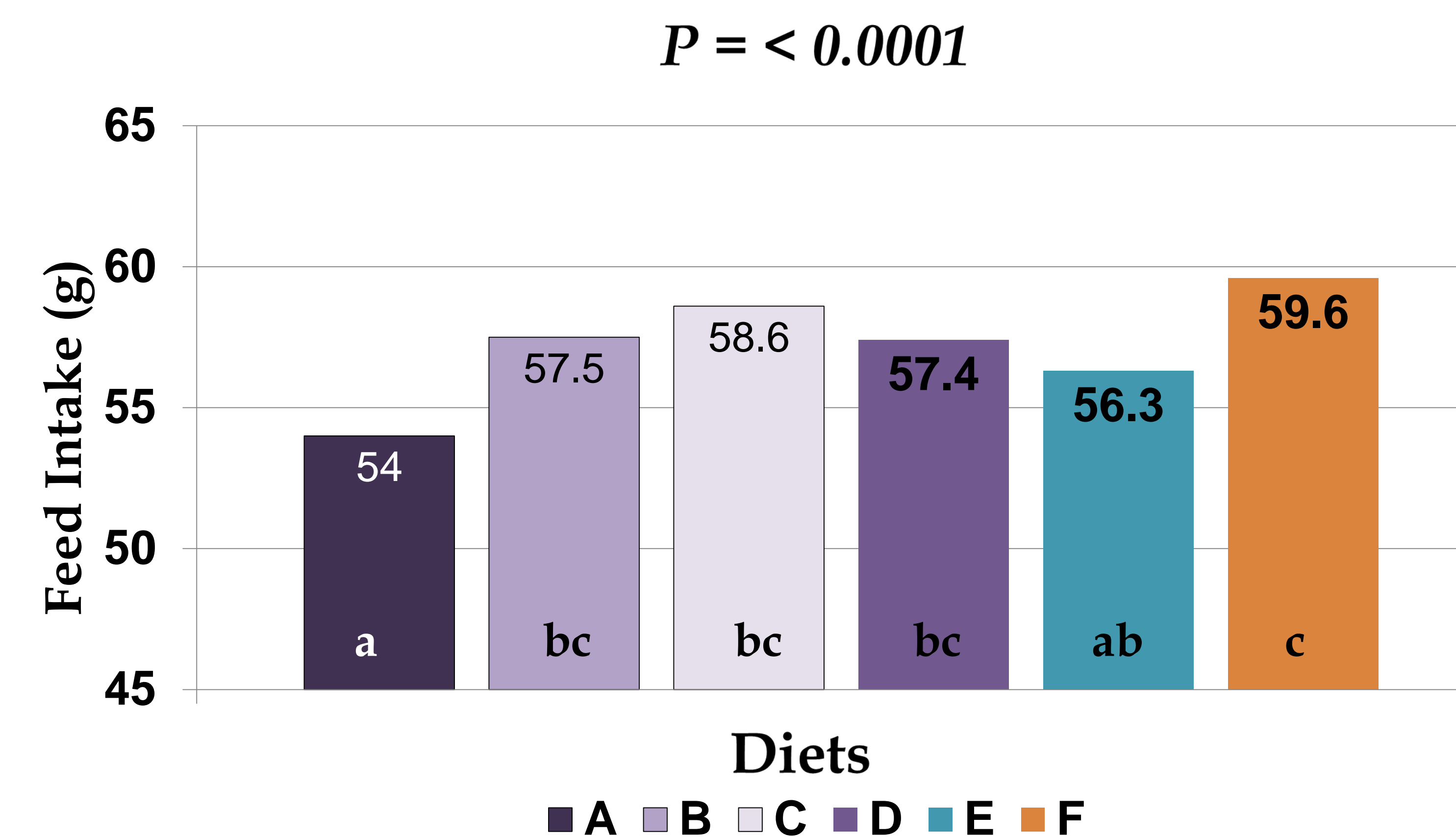
## Conclusions and further research

In conclusion, this research suggests that xylanase improves carbohydrate digestibility in wheat-based diets, restoring FCR to that of corn-based diets. However, further research would need to be conducted to test its impact on bacterial infection prevention. Xylanase is not formulated to be an antimicrobial but can be tested in a floor-pen setting to see if there is an overall significant difference in health compared to birds being fed monensin sodium.

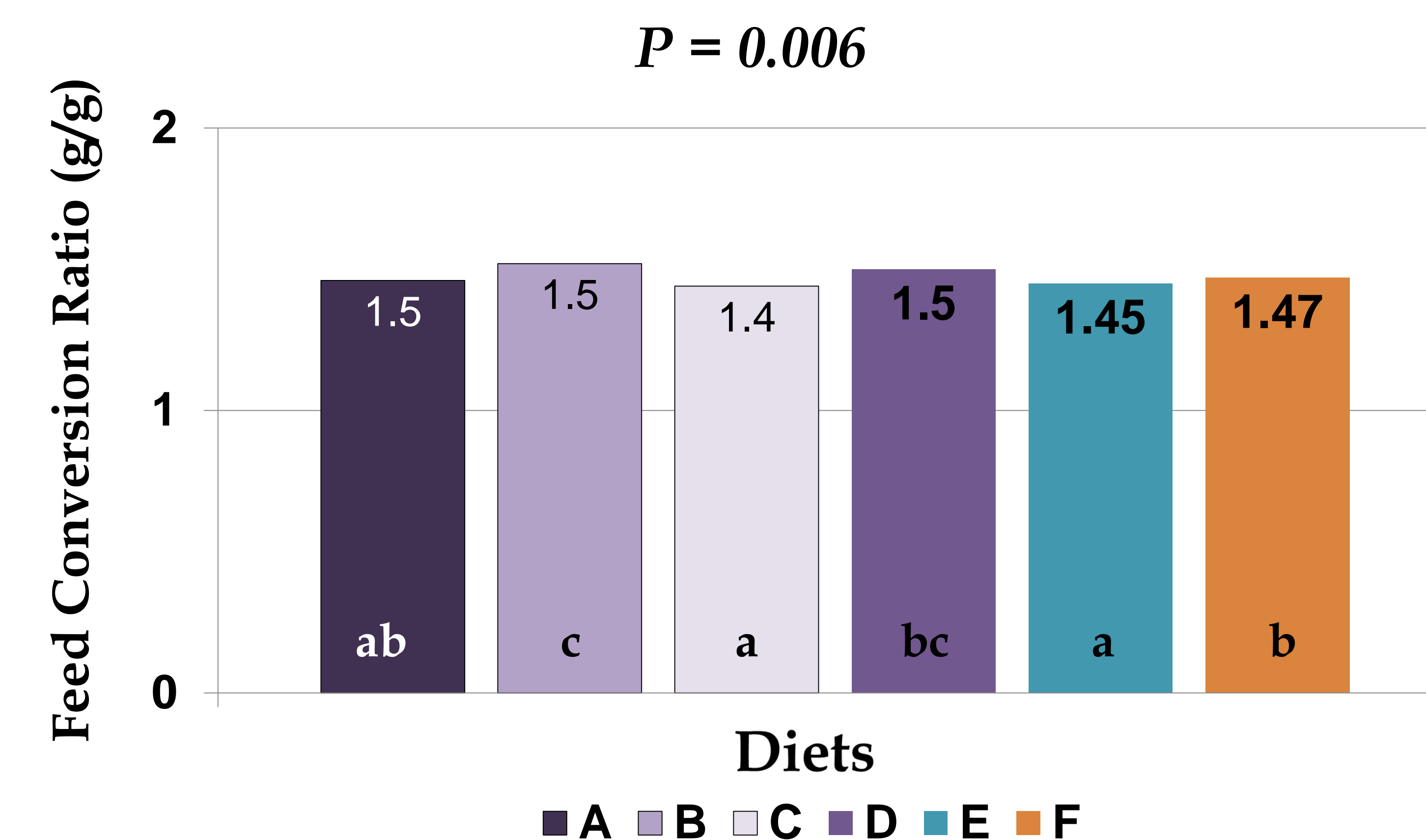
## Experimental Diets

Treatment	Grain type	Monensin Sodium	Xylanase
A	Corn	No	No
B	Wheat	No	No
C	Corn	Yes	No
D	Wheat	Yes	No
E	Corn	No	Yes
F	Wheat	No	Yes

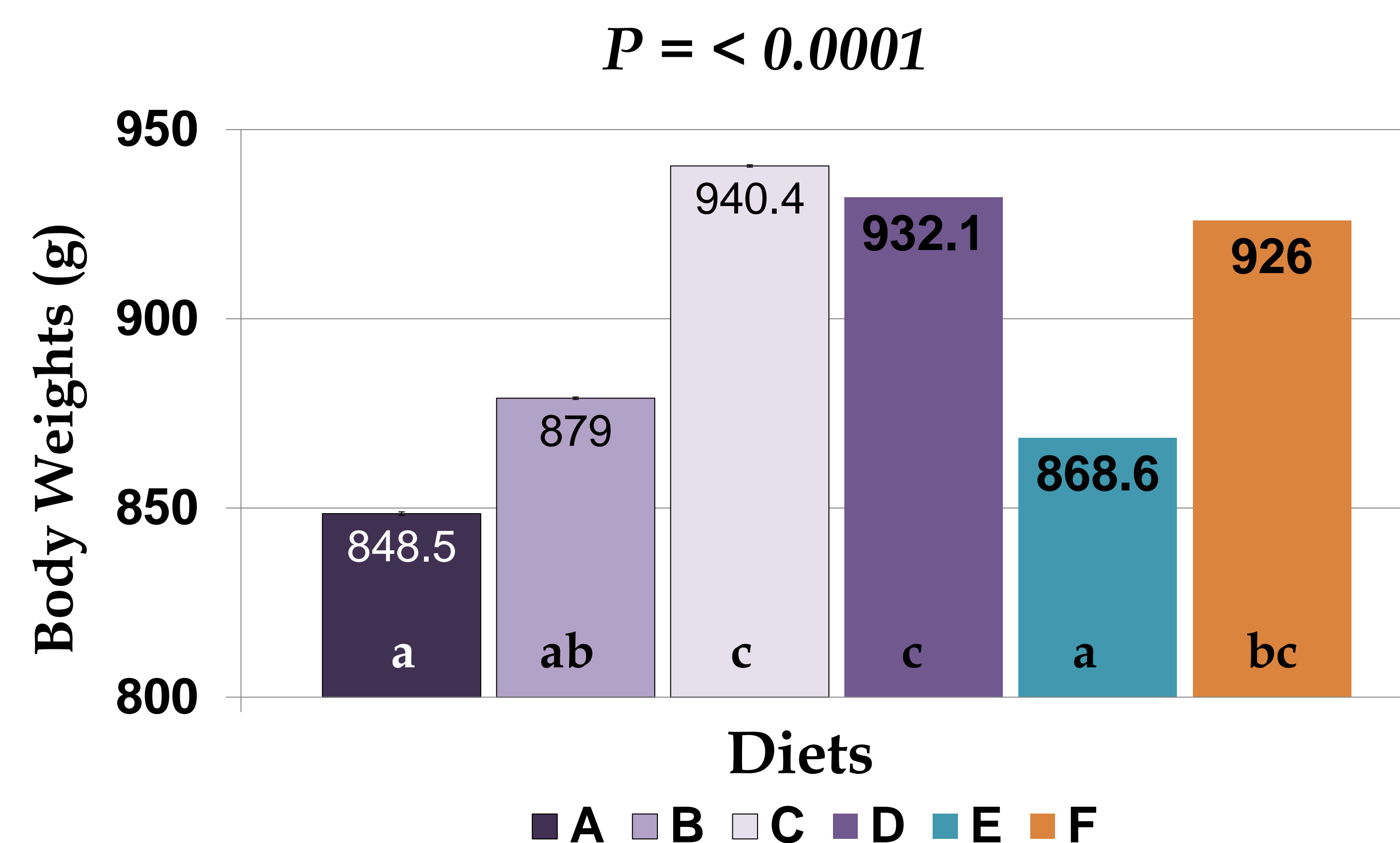
## Effects on Feed Intake



## Effects on Feed Conversion Ratio



## Effects on Day 21 BW



## Support

Appreciation is expressed to Koch Industries for financial support of this experiment.

