# Effects of Monensin Sodium and Xylanase on Growth Performance of Broiler Chicks

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## Introduction

- Increasing pressure to limit or eliminate antimicrobial usage in poultry feed
- Antimicrobials have been used to improve nutrient digestibility to achieve better FCR ratio
- One alternative is exogenous Xylanase
- Xylanase helps break down the cell wall of plants
- Xylanase will help improve digestibility in high fiber diets

## Objective

This experiment was conducted to evaluate if xylanase can replace monensin sodium to improve nutrient digestibility, and if the amount of fiber impacts the amount of improvement in digestion.

## Diets

1) Corn-based with no monensin sodium or xylanase
2) Wheat-based with no monesin sodium xylanase
3) Corn-based with monensin sodium and no xylanase
4) Wheat- based with monesin sodium and no xylanase
5) Corn-based with xylanase and no monesin sodium
6) Wheat-based with xylanase and no monesin sodium

## Conclusions

- Xylanase helps improve the digestibility of carbohydrates in wheat-based diets
- Restoring the digestibility in the wheat-based diet to the same as the corn-based diet
- There was a limited effect of the antimicrobial in this environment
- Due to minimal exposure to fecal matter

## Support

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## Procedures

- 216 Cobb 1 day old chicks were fed 1 of 6 dietary treatments for 21 days
- There was 6 birds per cage and 6 different treatments
- Chicks were housed in battery cages
- Diets were corn or wheat based containing either 0.10 g/kg monensin sodium (Coban 90; Elanco Animal Health, Greenfield, IN) or 16,000 betaxylanse units/kg beta 1-4, endo-xylanase enzyme (Econase XT; AB Vista, Marlborough, UK)
- Birds and feed were weighted weekly to calculate the FCR and ADG for 21 days
- Mortalities were accounted for
- Data was analyzed with GLIMMIX procedure of SAS with the cage as the experimental unit and treatment as the fixed effect

## Results

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

| Grain Type | Monensin Sodium | Xylanase | n | 1-d BW, g | 21-d BW, g | Feed intake, g | FCR, g/g |
|---|---|---|---|---|---|---|---|
| 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 | < 0.0001 | 0.006 |

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

[1]Treatments 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).