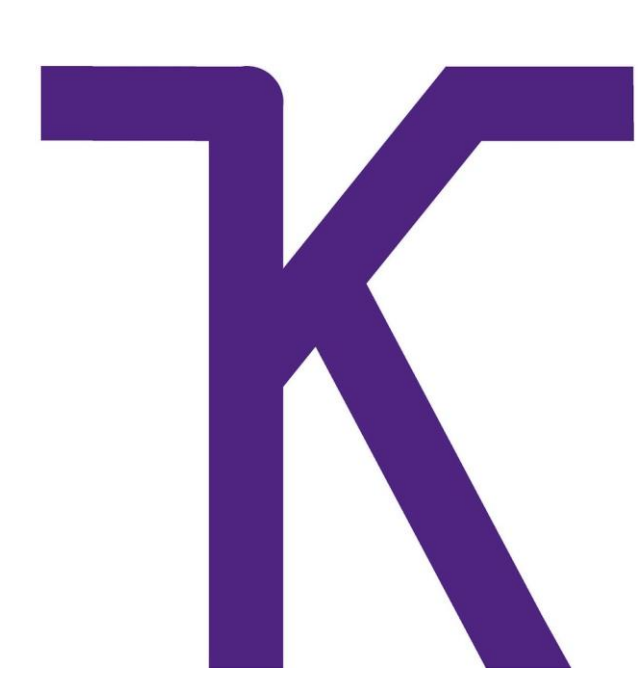




# Effects of Medium Chain Fatty Acids and their Ability to Replace ZnO in Weanling Pig Diets

L.K. Rikand, A.B. Lerner, and C.K. Jones



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

## Introduction

- Carbadox is a popular antibiotic used in swine feed to control swine dysentery. Typically, it improves growth and feed efficiency. However, it has a lower level of antibacterial resistance compared to other drugs.
- Zinc Oxide (ZnO) is used therapeutically to prevent post-weaning diarrhea associated with *E. coli*. Typically, it improves growth and feed efficiency, and mortality.
- Medium chain fatty acids (MCFA) are antiviral and bind with the cell membrane of a bacteria/virus to cause destabilization. They typically improve growth and feed efficiency, and mortality. However, they are known to be expensive and little research has been done on the product.

## Objective

To test the effects of growth performance using medium chain fatty acids compared to ZnO or carbadox in diets for weanling pigs.

## Materials and Methods

- **Animals:** A total of 360 weanling pigs
- **Experimental Procedure:** Pigs were weaned at 21 days of age and randomly allotted in a completely randomized design with 6 pigs/pen and 10 replicate pens/treatment.
- **Treatments:** **1)** control; **2)** 3,000 ppm ZnO in Phase 1 and 1,500 ppm ZnO in Phase 2; **3)** 50 g/ton carbadox; **4)** 1% blend of C6:C8:C10; **5)** 1% Feed Energy R2 (Feed Energy Corps, Des Moines, IA); **6)** 1% FORMI GML (ADDCON, Bitterfeld-Wolfen, Germany).
- **Data Collection:** Pigs and feeders were weighed on days 0, 7, 14, 21, 28, and 35 to determine average daily gain (ADG), average daily feed intake (ADFI), and G:F (gain to feed ratio). Blood and fecal samples were also taken on days 0, 7, 21, and 35.
- Treatment diets were fed in two phases from day 0 to day 19 of the experiment. A common Phase 3 diet was fed from day 20 to 35.



## Conclusions

- Pigs fed ZnO or carbadox had greater ADG than the R2 or control diets. Pigs fed C6:C8:C10 or FORMI had similar ADG results as the carbadox treatment. During treatment phases, there was limited impact on ADFI and G:F.
- ZnO and carbadox continue to be good options when looking at growth performance in weanling pigs when compared to MCFA. Options such as FORMI resulted in similar growth performance but more research is needed on MCFAs in order to replace ZnO or similar antibiotics in pork production.

## Acknowledgements

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## Results

