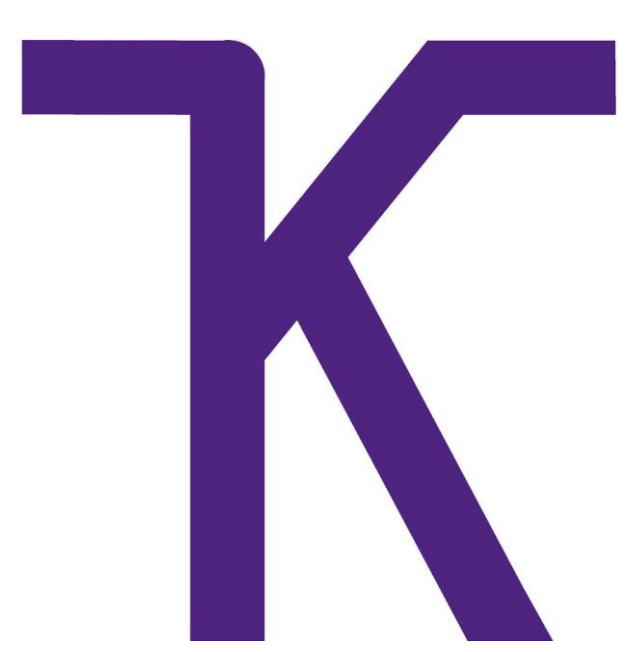




Effects of medium chain fatty acids to replace zinc oxide and carbadox in nursery pig diets

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Introduction

- Increased antibiotic awareness and regulation throughout the swine industry puts pressure on finding reliable alternatives
- Zinc oxide (ZnO) and carbadox are current dietary additives that show results of improved performance in swine diets yet with foreign production beginning to completely eliminate antibiotics and antimicrobials new replacements are of high importance
- A proposed alternative has been the use of medium chain fatty acids (MCFA) to find similar results with 3 forms analyzed in this experiment

Objective

To study the effects that MCFAs, ZnO, and carbadox products have on the performance of nursery swine

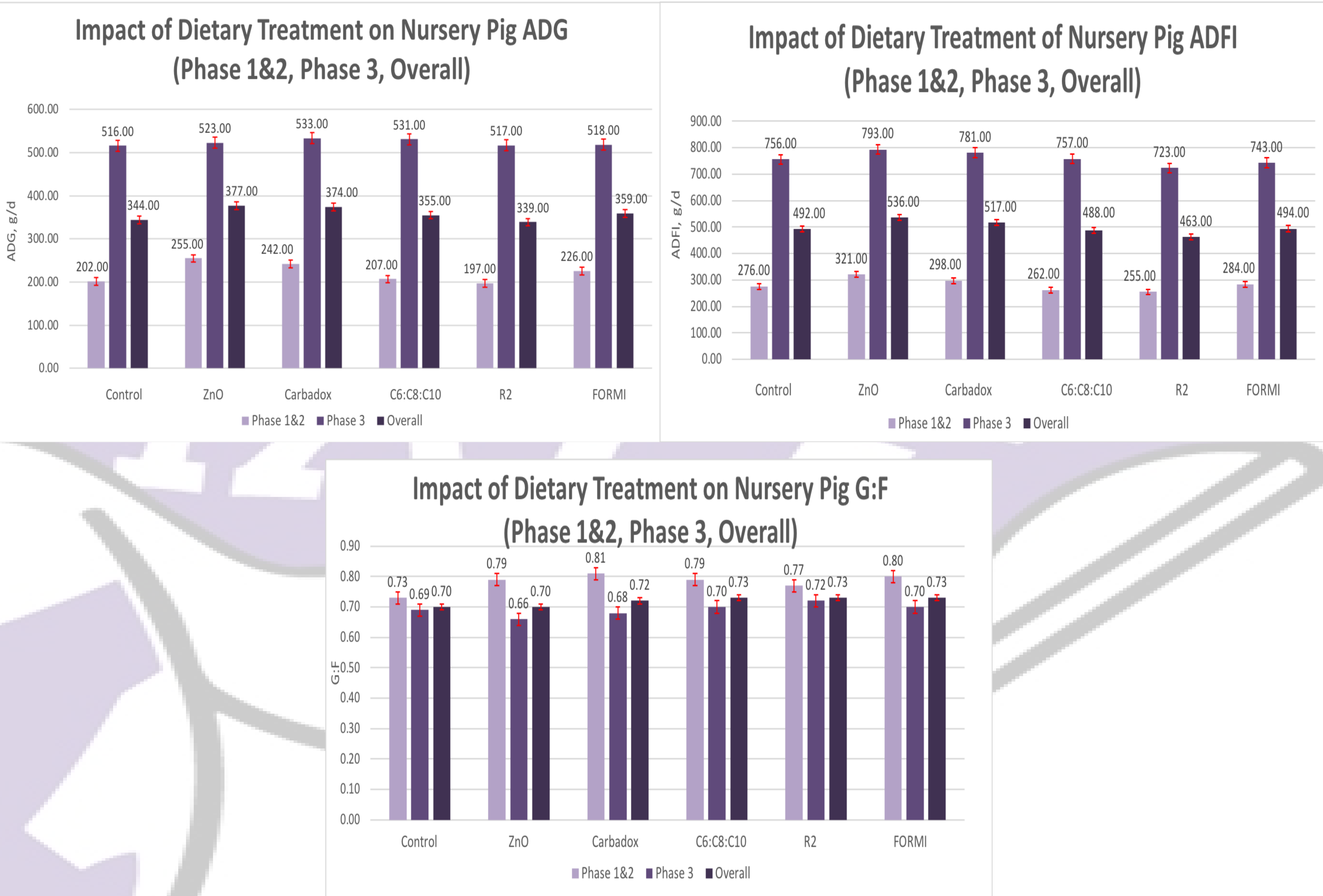
Materials and Methods

- 360 weanling pigs (DNA 200x400; 5.4 ± 0.07 kg; 21 d of age) were put on a 35 day trial with random allotment to treatments in a completely randomized design
- Experimental units being 10 replicates/treatment with 5-6 pigs/pen
- Data collection included recording weekly pig and feeder weights to find the growth parameters of ADG, F:G, and ADFI which were analyzed using PROC GLIMMIX (SAS version 9.4: Cary, NC) with the pen as the experimental unit
- Diets were fed in two phases from d 0 to day 7 and day 7 to day 19 for the treatment. With every pen receiving a common diet for phase 3 from day 19 to day 35
- The 6 dietary treatments were:
 - 1) Control
 - 2) 3,000 ppm ZnO in Phase 1 and 1,500 ppm ZnO in Phase 2
 - 3) 50g/ton carbadox
 - 4) 1% blend of C6:C8:C10
 - 5) 1% Feed Energy R2 (Feed Energy, Iowa City, IA)
 - 6) 1% FORMI GML (ADDCON, Bitterfeld-Wolfen, Germany)

Acknowledgements

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Results



Conclusions

- From d 0 to d 19 period, pigs fed ZnO or carbadox had improved($P<0.05$) ADG relative to pens with the negative control or R2 diets. While FORMI saw similar results in growth to carbadox with the other MCFA treatments being intermediate
- ADFI was higher($P<0.05$) for pens fed ZnO relative to the control, C6:C8:C10, or R2 while others were intermediate
- Little significance in G:F came from treatment differences($P=0.078$)
- Products such as ZnO and carbadox are still viable options that producers can use to maximize growth performance in early stages post weaning
- Some products with MCFAs, such as FORMI GMI, garnered similar growth performance where others provided lower results
- Additional research is still advised to find the MCFA dietary additives to replace ZnO or feed based antimicrobials