

The Effects of Medium Chain Fatty Acids as Alternatives to Zinc Oxide or Carbadox in Nursery Pig Performance



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Introduction

- Commercial swine production is feeling pressured to switch from a feed-base antibiotic to Medium Chain Fatty Acids diets due to the feedback from the consumers.
- Removal of antibiotics from the diet leave producers concerned about nursery pig health.
- Stressors such as, separation from mother, handling, rearranging, and change in feed can leave pigs susceptible to diseases.
- Finding alternative supplements that are equal or greater in growth performance and maintaining pigs health would help ease producers while satisfying the consumers.

Objective

- Comparing the effects of medium chain fatty acids to ZnO or carbadox in weanling pigs growth performance

Experimental Procedures

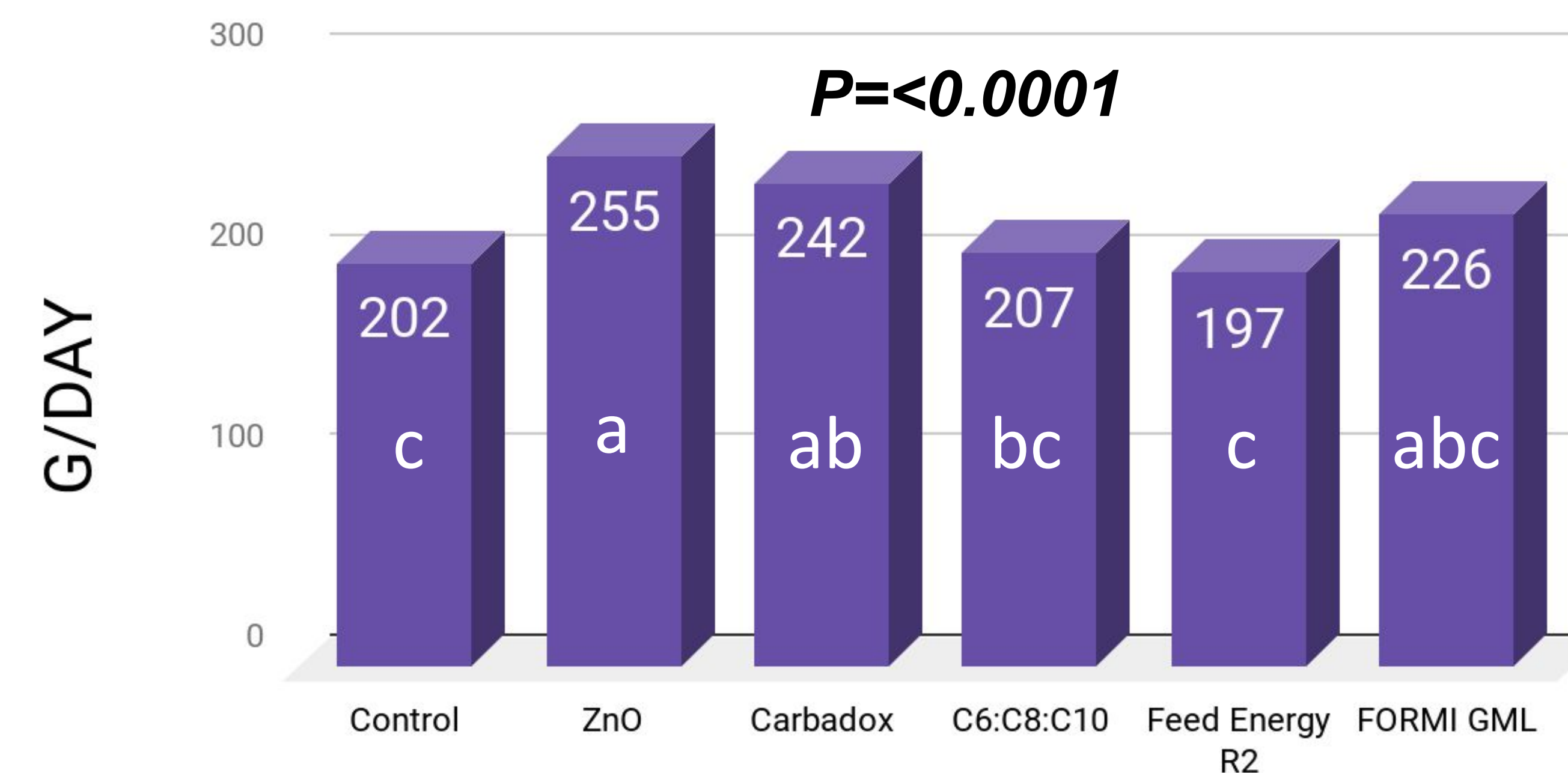
- Age:** 360 weanling pigs (DNA 200×400; 5.4±0.07 kg)
- Data:** ADG, BW, ADFI, and G:F
- Period:** 35-d growth experiment
- Collected weekly:** Weigh pigs, feeder weights, blood, and score fecal
- Experimental design:** Complete randomized experiment with 10 replicates pens 6 pigs per pen
- Experimental Unit:** Pens
- Treatments:** Control, 3,000 ppm ZnO in Phase 1 and 1,500 ppm ZnO in Phase 2; 50 g/ton carbadox, 1% blend of C6:C8:C10, 1% Feed Energy R2 (Feed Energy Corp, Des Moines, IA), 1% FORMI GML (ADDCON, Bitterfeld-Wolfen, Germany).
- Statistics:** GLIMMIX procedure of SAS with an alpha of 0.05

Acknowledgement

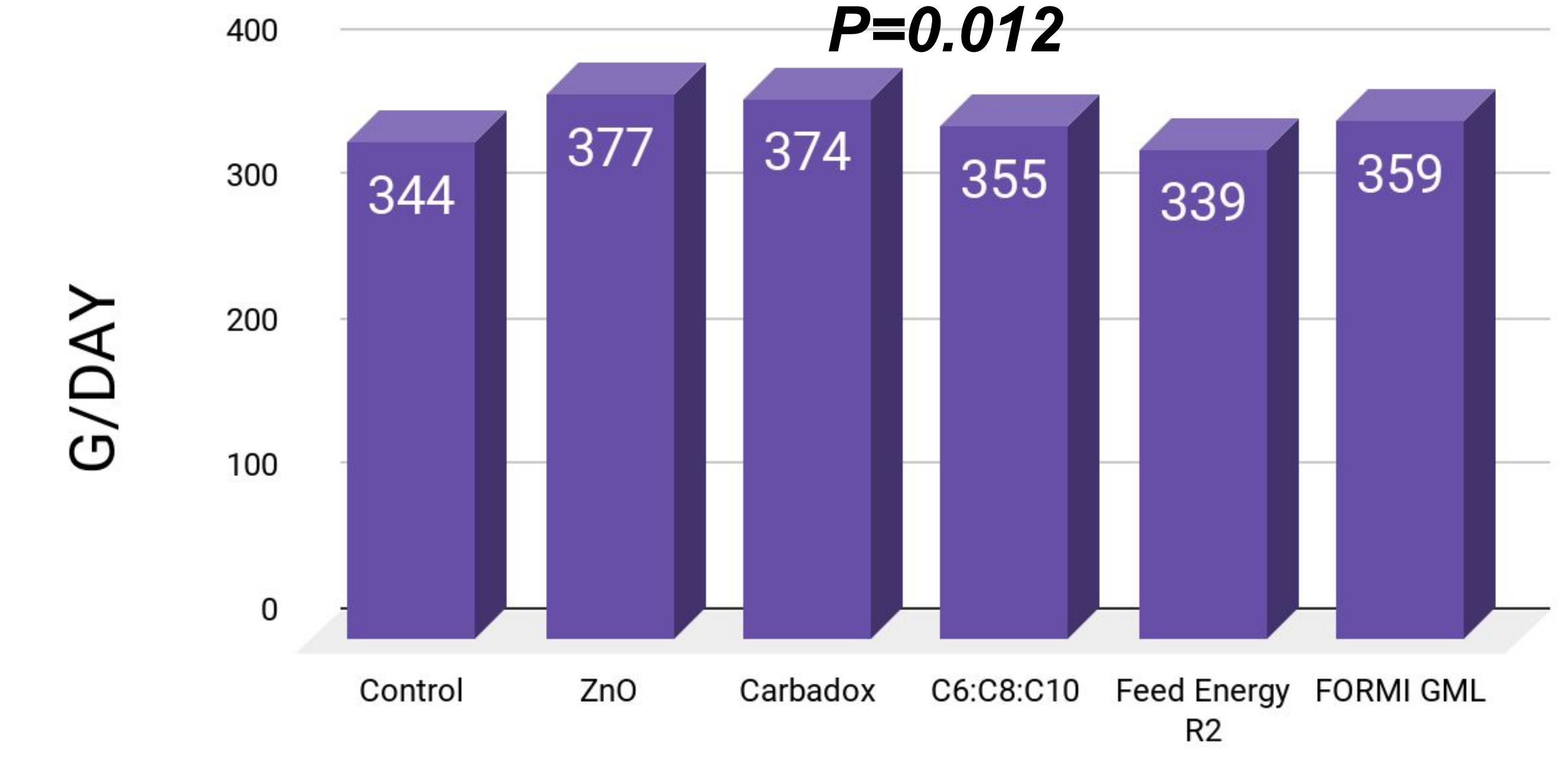
- Dr. Mark and Kim Young Undergraduate Research Fund
- ADDCON

Results

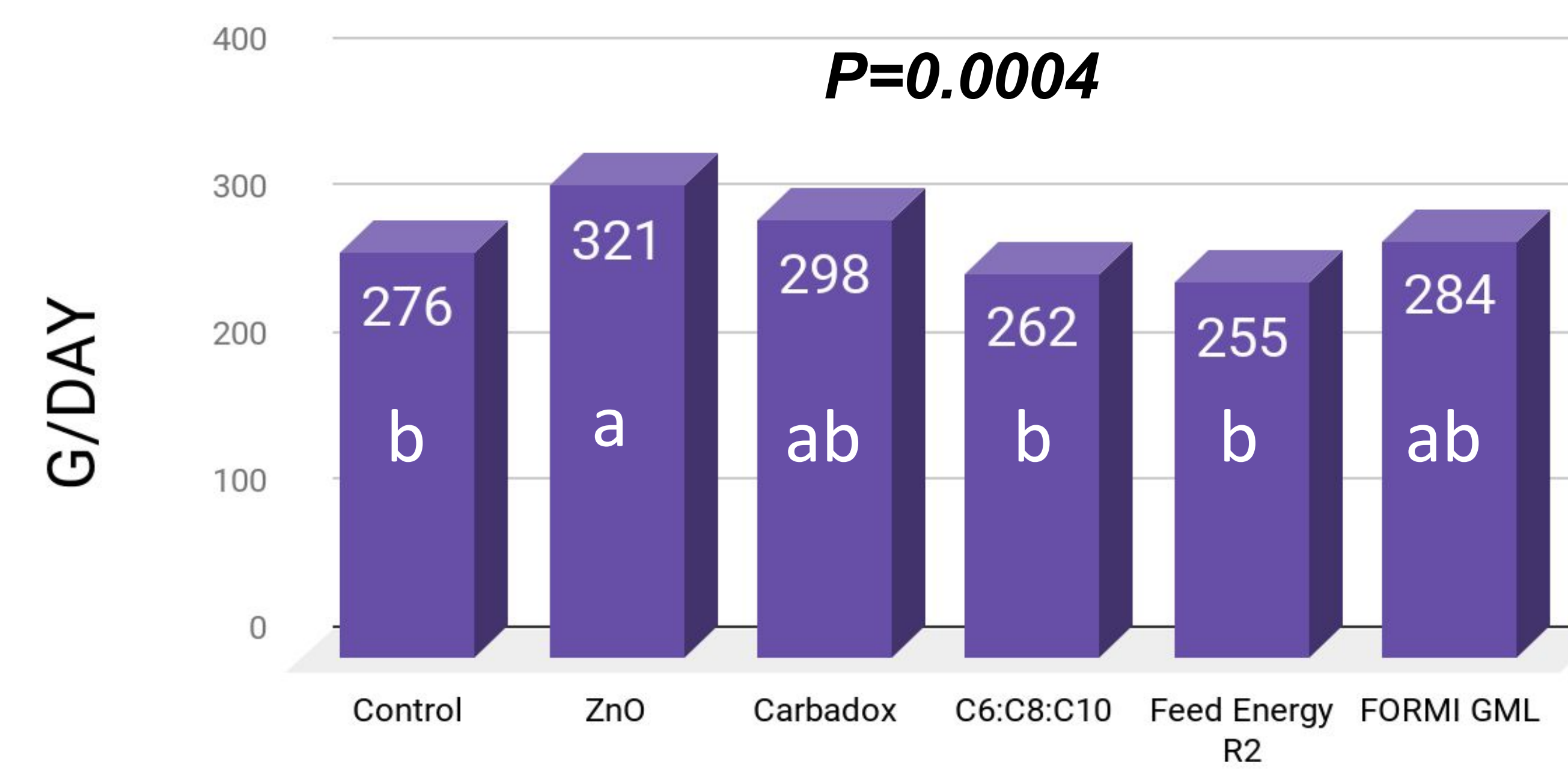
Overall Treatment ADG (d 0 to 19)



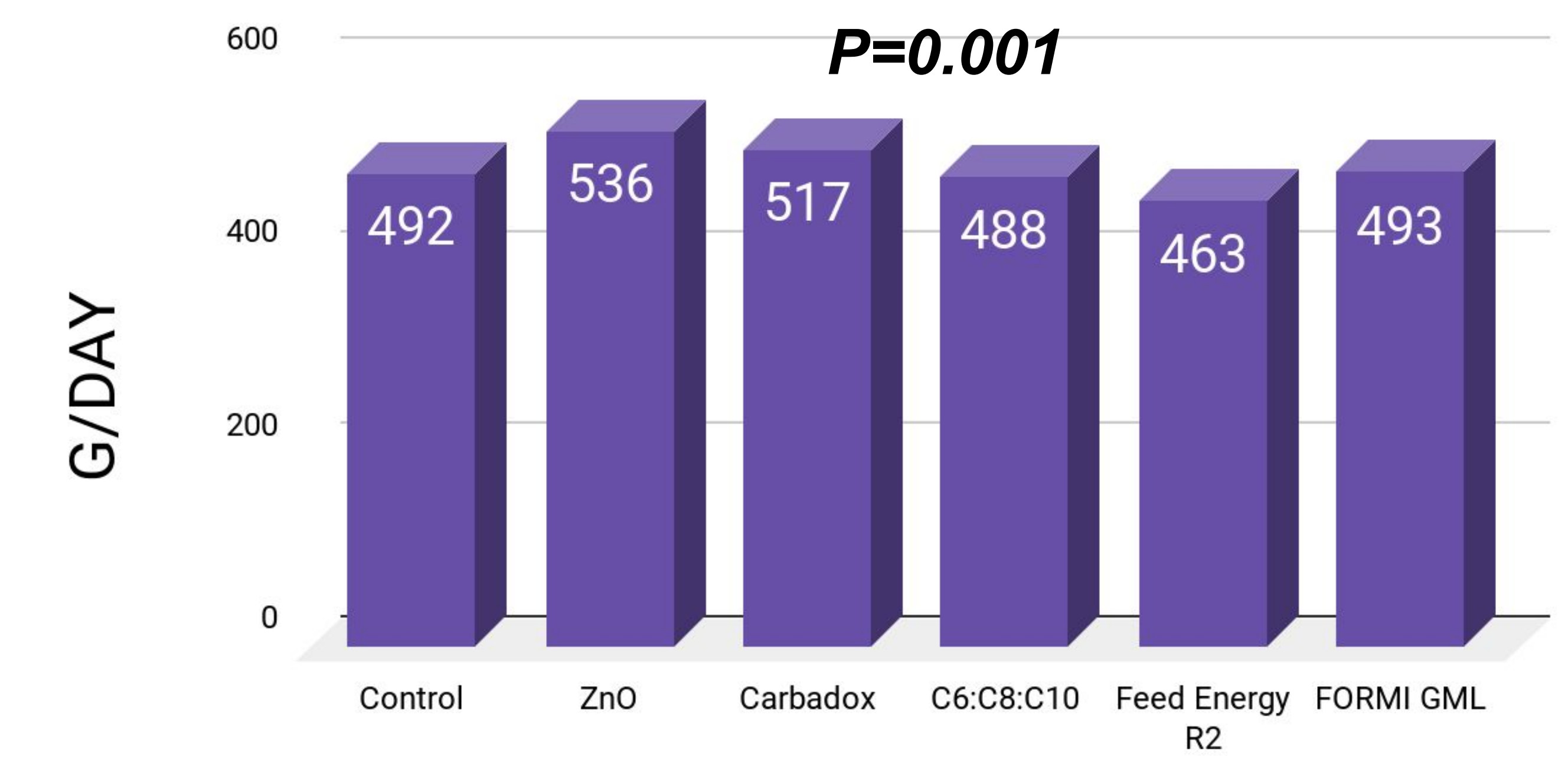
Overall Treatment ADG (d 0 to 35)



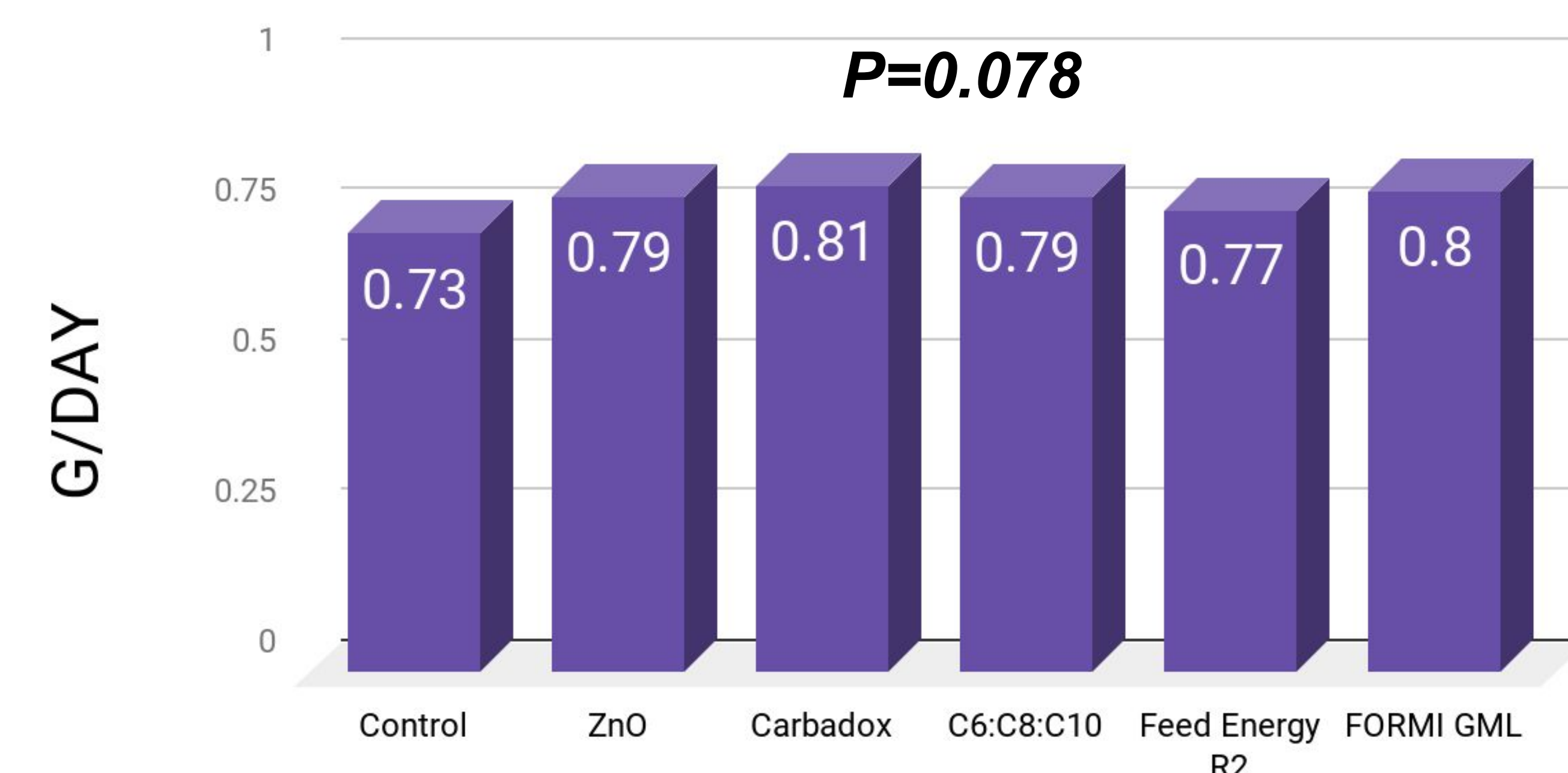
Overall Treatment ADFI (d 0 to 19)



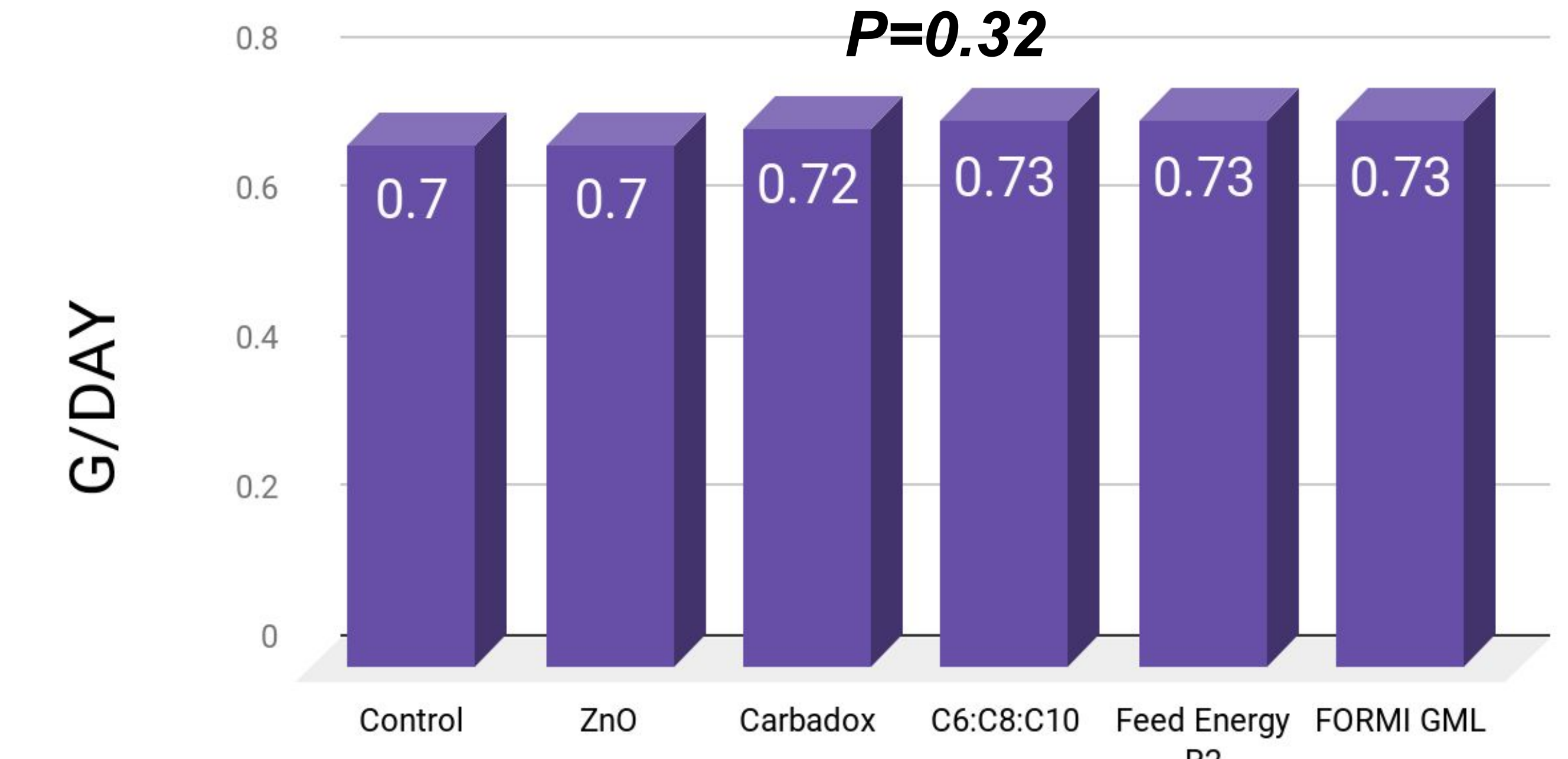
Overall Treatment ADFI (d 0 to 35)



Overall Treatment G:F (d 0 to 19)



Overall Treatment G:F (d 0 to 35)



Conclusions

- Feeding ZnO and Carbadox had a higher growth performance
- FORMI GML had a similar growth performance as ZnO and Carbadox
- C6:C8:C10 and Feed Energy R2 display least performance growth of all the treatments
- Further research is needed to confirm that certain MCFA could replace feed-based antibiotics