

Inflammation in the Intestine

Managing Inflammation

Zinc Plays an Important Role in Mitigating Inflammation and Oxidative Stress at the Intestinal Level

In broilers, intestinal dysbiosis with inflammation and suboptimal morphology, such as shortened villi, is common, and associated with decreased performance. Dysbiosis is an imbalance of microbial populations which is detrimental to morphology and function of the intestine. Zinc is commonly added to broiler diets and supports intestinal health. The aim of this study was to test whether Availa®Zn zinc amino acid complex is superior to zinc sulfate for preserving intestinal morphology in birds challenged by dysbiosis.

Conditions

- 680 one-day-old male broilers (Ross 308)
- Dysbacteriosis induced:
wheat-rye-based diet, no addition of NSP-enzyme, high level of protein
- 60 ppm added zinc from zinc sulfate or Availa-Zn fed from d 1 to 36
- Duodenal tissue samples and blood collected

Results

Broilers that were fed Availa-Zn had:

- Increased villus length and greater villus length to crypt depth ratio ($P < 0.05$)
- Decreased plasma glutathione peroxidase activity ($P < 0.05$)

Figure 1. Effect of Availa®Zn^a on Histology of Duodenal Samples at d 28

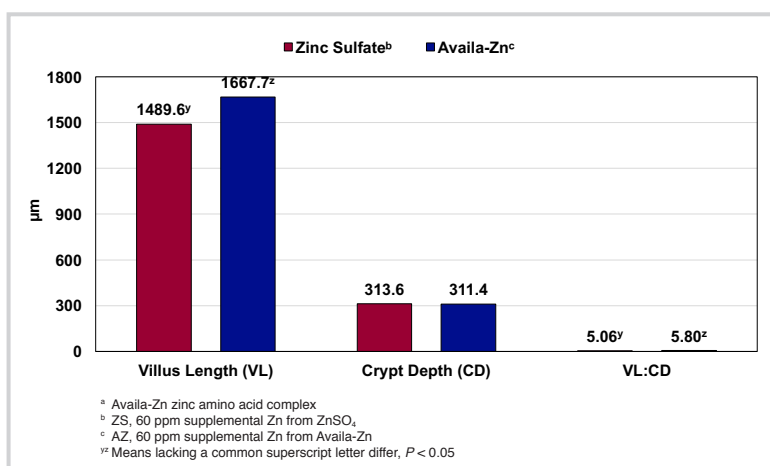
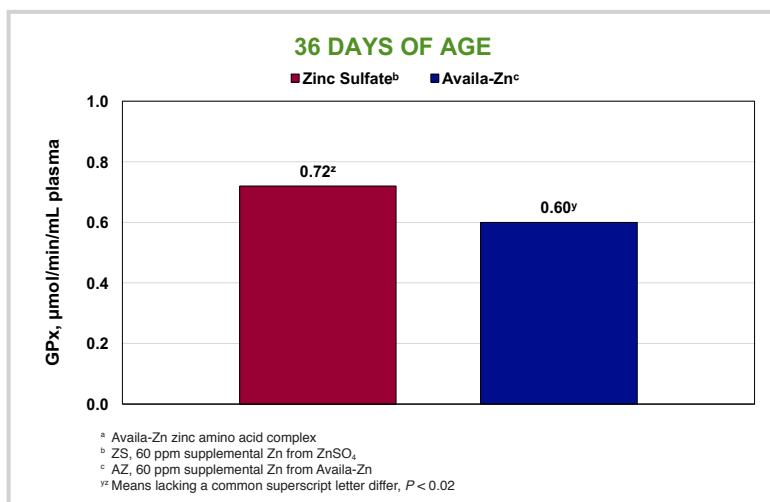


Figure 2. Effect of Availa-Zn^a on Glutathione Peroxidase Activity in Plasma



References: 2017 European Symposium on Poultry Nutrition, May 8-11, 2017, Tarragona, Spain

CONCLUSIONS

Broilers fed zinc from Availa-Zn were better able to cope with inflammation and oxidative stress compared to birds fed zinc sulfate at equal levels.