



Feeding garlic powder at low doses does not negatively affect feedlot cattle health

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Background

Garlic has been shown to have both beneficial and adverse impacts in different species. With growing free choice supplementation among beef producers, its potential effects on cattle health are sparsely documented.

Objective

This study investigated the health impacts of two popular types of garlic products, Garlic Powder (GP) and Garlic-oil-based premix (GOil) on feedlot steers under free-choice mineral supplementation.



Materials and methods

- 104 steers were randomly assigned to 4 pens with 26 animals per pen
- All groups received same feedlot diet (89.5% barley grain, 7.5% wheat straw and 3% feedlot supplement containing Rumesin and Tylan)
- Each group received garlic supplements by % to mineral (groups were 2.5% GP, 5% GP, 0.3% GOil or 0% garlic product)
- Individual feed and mineral consumption was measured via GrowSafe® automatic feeders while bodyweights were collected every two weeks
- Hair samples were collected to allow measurement of cortisol levels as an indicator of long-term stress
- At the end of the trial, blood samples were collected for hematological analysis while fecal samples were used to determine total parasite load using Modified Wisconsin Floatation Technique
- At harvest, liver abscess scores were assessed via Elanco scoring system
- Statistic analyses were done using SAS software via linear models

Results

- There was no difference in average dry matter intake among groups
- Average daily mineral consumption were 192g, 257g, 228g and 288g for 0%, 2.5% GP, 5% GP and 0.3% Goil groups, respectively (data not shown)
- There was significant treatment effect (P=0.02) on liver abscess outcomes in the different groups
- There was no effect (P = 0.21) on total fecal egg count of *Trichostrongyle* and *Eimeria* spp.
- Garlic supplements had no effects (P > 0.05) on key hematological parameters

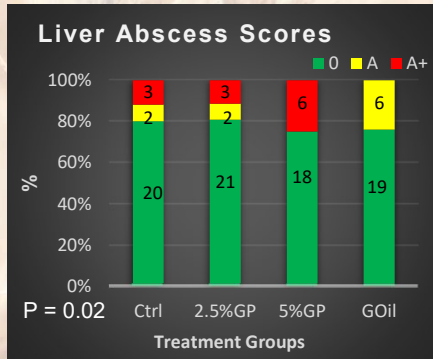


Figure 1. Percentage of 0/A/A+ Liver abscess scores. '0': no liver abscess; 'A': small to medium abscesses; 'A+': severe or large abscesses.

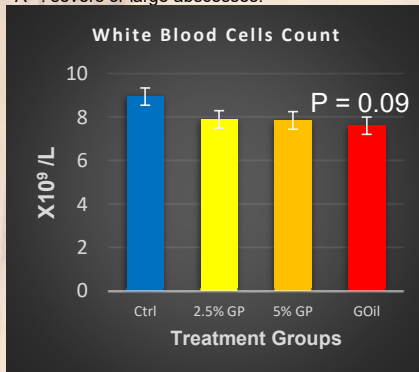


Figure 4. Average (± SE) White blood cells count across treatment groups

Conclusions:

1. Infusing garlic powder at recommended levels showed no adverse effect on blood parameters
2. The feeding strategy had no effect on long-term stress and fecal parasite load within the feedlot setting
3. The differential outcomes associated with liver abscess scores require further investigation

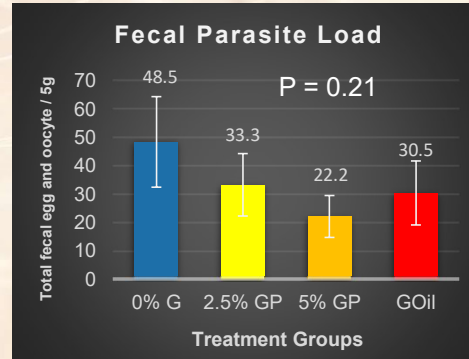


Figure 2. Average (± SE) fecal parasite loads from 5g of fecal sample.

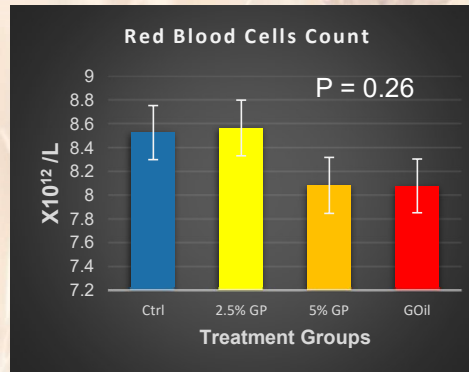


Figure 5. Average (± SE) red blood cells counts among treatment groups

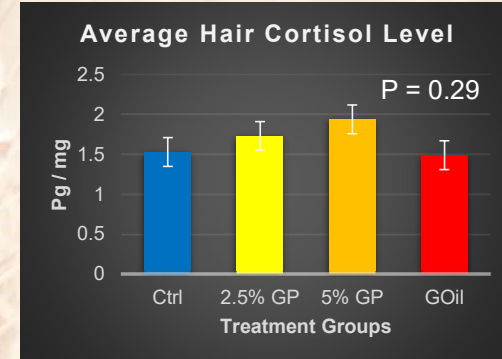


Figure 3. Average (± SE) hair cortisol levels

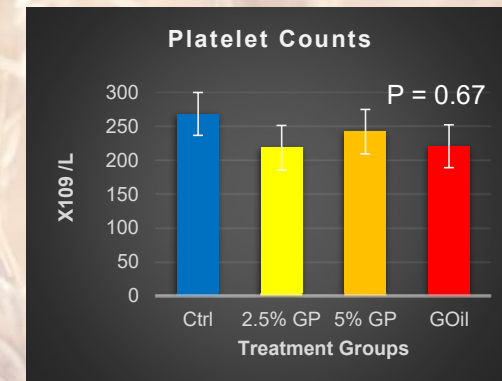


Figure 6. Average platelet count (± SE) per group

Acknowledgments

