

Garlic and Intestinal Worms



LITERATURE SUMMARY: Potential value of garlic flavoring against intestinal worms in livestock.

Introduction:

Intestinal worms, particularly in livestock raised with access to pasture and soil, are a chronic problem. Infestation can result in lost animal performance and reduced immune competence. An extensive search of the primary literature reveals that, when dosed properly, garlic oil can offer some relief to livestock and producers.

Mode of Action:

Allyl sulfides, responsible for the characteristically pungent aroma of garlic (and the breath of those who consume too much garlic), are highly reactive compounds capable of inhibiting virtually all stages of the nematode life cycle. Krstin et al. (2018), using *Trypanosoma brucei brucei*, confirmed that nematode inhibition is likely caused by allyl sulfides interacting with parasite enzymes. Which is also believed to be how garlic can repel ectoparasites like flies, ticks, and lice.

Treatment Strategies:

Intermittent Administration:

Traditionally, anthelmintics are expected to eliminate intestinal worms with a single treatment, that is readministered periodically as needed to eliminate recurrent infestations. This approach has been shown to work with 60 to 80% efficacy when sufficiently high doses of garlic oil are used, in the range of between 4 to 10 g of garlic oil per animal. Mamta et al (2022) reported fecal egg count reductions of 60% at 16wk post-calving with a single dose at 7 days of age. This rose to 80% over the same period with treatment at 7- and 60-days post-calving (Figure 1).

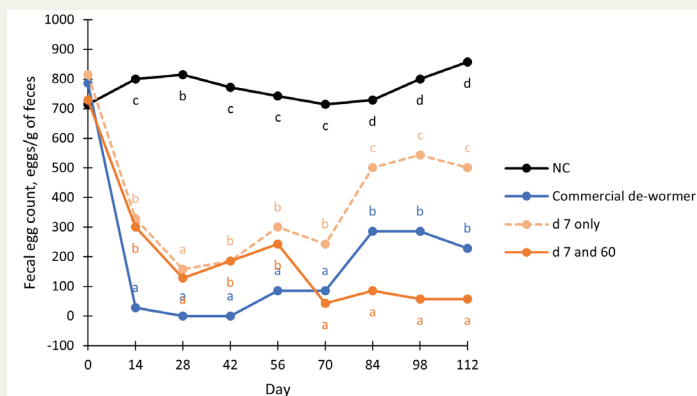


Figure 1. Fecal egg counts of cows fed a mixture of garlic and neem extracts (Adapted from Mamta et al., 2022). Means bearing different superscripts within day differ ($P < 0.05$).

Continuous Administration:

Unlike anthelmintic medications, garlic oil is a feed additive, and as such is routinely administered daily as a natural flavor in compound feed, free-choice minerals, and mineral tubs. Hasan et al. (2015) reported 50 to 80% reduction in fecal egg counts when feeding 5 to 10 g of fresh garlic/d (Figure 2). This was combined with an improvement in hematology (PCV, erythrocyte count, hemoglobin, and leukocyte count), and weight gain. Masamha et al. (2010) fed lower amounts of raw garlic juice to sheep and reported correspondingly lower impacts (15 to 40% reduction in fecal egg counts) as a result.

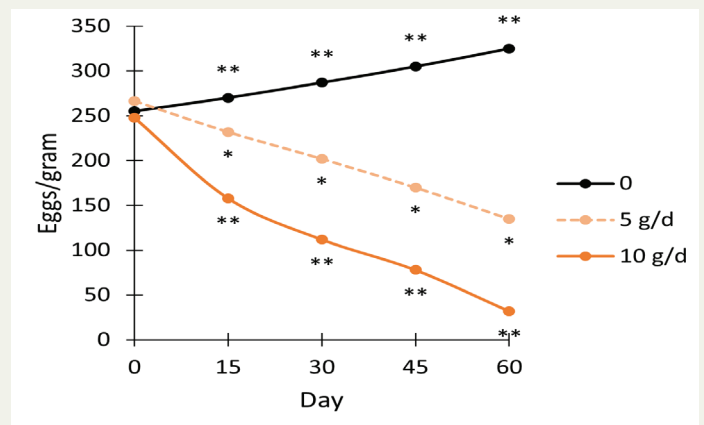


Figure 2. Fecal egg counts of goats fed fresh garlic twice daily (Adapted from Hasan et al., 2015). Means differ from day 0 at $P < 0.05$ (*) and 0.01 (**), respectively.

Summary:

In conclusion, published reports indicate some level of protection from intestinal nematodes can be achieved through administration of garlic to livestock. If you would like to explore the potential of Feedbuds® Garlic flavor in your operation, please contact your local QualiTech representative.

References:

1. Krstin et al., 2018. DOI: 10.3390/medicines5020037
2. Mamta et al., 2022. Ind. J. Anim. Sci 92:706-710
3. Hasan et al., 2015. DOI: 10.5455/javar.2015.b102
4. Masamha et al., 2010. Intern. J. Appl. Res. Vet. Med. 8:161-169