

Worm-Trapping Fungus (*Duddingtonia flagrans*)

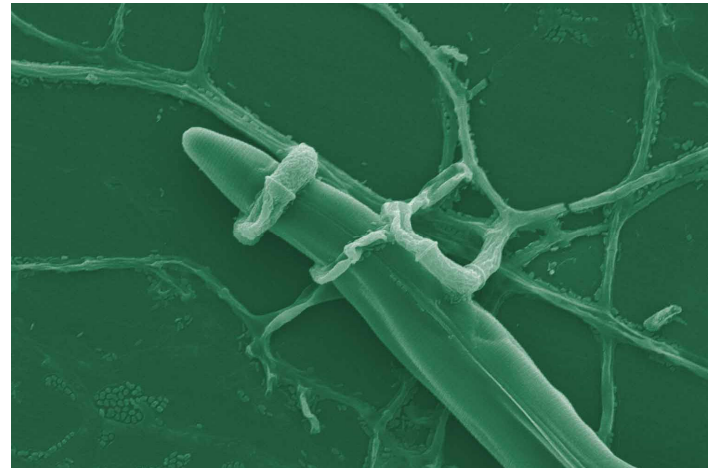
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American Consortium for Small Ruminant Parasite Control

Nematode-trapping fungi have demonstrated potential as a biological control agent against the immature (larval) stages of gastrointestinal nematodes (worms) in livestock feces under both experimental and natural conditions. These fungi are normal soil inhabitants throughout the world where they feed on a variety of non-parasitic soil worms. Of the various fungi tested, *Duddingtonia flagrans* spores have been shown to survive passage through the gastrointestinal tract of ruminants. After defecation, the spores germinate and grow in the feces to form sticky, sophisticated traps/loops (see image) which are able to trap the developing larval stages of the parasitic worms in the fecal environment. This form of control has been successfully applied under field conditions and is an environmentally safe biological approach for forage-based (not confinement) feeding systems.

The primary delivery system is thoroughly mixing the fungal spore material into supplement feedstuffs for daily feeding. This requires a management system that can accommodate daily feeding where each animal has the opportunity to consume an adequate amount of the feed/spore mixture. To achieve adequate control of larvae in the feces, during the transmission season (June-September for most areas), spores have to be fed for a period of no shorter than 60 days, usually starting at the beginning of the grazing season (especially young after weaning). Feeding spores to dams during late pregnancy and lactation will also help to reduce pasture contamination, especially



Nematode-trapping fungus

Image by: duddingtonia.com

for growing young that will graze the same pasture. A secondary delivery system is thoroughly mixing the fungal spore material into loose mineral supplement. The mineral needs to be kept covered and dry. This method does not require daily feeding, but mineral supplement needs to be replenished at whatever interval necessary to provide a constant source of spores for the duration of the treatment period. The spores cannot be incorporated into pellets as the heat of the pelleting process will kill the spores.

The Australian company that is marketing the product called BioWorma® is International Animal Health Products (IAHP). BioWorma® is approved for use in the US and is registered in almost every state. IAHP is developing a distribution system for the US and the first shipment of product will arrive mid-February 2019. The primary US distributor is located in



Image by: S Schoenian

Kansas and avenues of distribution from there are yet to be determined. The product should initially be available to some markets as soon as March, but many other markets probably into the spring/summer. Cost will be distributor driven and relatively expensive, but consider the long-term benefit of reduced pasture contamination. This product is the only control method that targets worms on pasture, where a majority (estimated at about 90+% of the total worm population) reside.

It is important to understand and emphasize that this product is just one component of an integrated control program. Do not rely on this alone.

For more information on integrated control and updates on BioWorma availability go to American Consortium for Small Ruminant Parasite Control (www.wormx.info) and International Animal Health Products (www.iahp.com.au).



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