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Other worms

Cooperia spp.

Cooperia spp. are parasitic intestinal roundworms that infect cattle, sheep, goats, and other wild and domestic ruminants. *Cooperia curticei* infects the small intestines of sheep and goats. *Cooperia surnabada* infects the small intestines of cattle, sheep and goats. *Cooperia* spp. are less pathogenic than other gastrointestinal roundworms. They are not an important parasite of sheep and goats in the US. Disease is rare.

LIFE CYCLE

Cooperia spp. have a similar life cycle as other strongyle-type worms. Eggs deposited by female worms are passed in the feces and hatch under favorable environmental conditions, releasing 1st stage larvae, which molt to 2nd and then 3rd stage larvae (L3). The temperature range for larval development is 41°F and 91°F. Small ruminants get infected when they consume the L3 while grazing. The L3 move into the mucosa of the small intestine where they undergo 3rd and 4th molts to L4 and L5 larvae. Within 2 to 3 weeks, the L5 develop into sexually mature male and female worms. The fertilized females begin produc-

ing eggs and the cycle repeats. Female *Cooperia* spp. are prolific egg layers. Unlike other gastrointestinal roundworms, there is no documented evidence for hypobiosis (arrested development) of *Cooperia*.

IMPACT IN THE ANIMAL

Cooperia spp. live in the small intestines and as with other parasites, they affect primarily young animals. *Cooperia* have relatively low pathogenicity, but may contribute to parasitic gastroenteritis in grazing small ruminants. In rare incidences, high worm burdens could reduce productivity of host animals and result in lack of appetite and reduced weight gain. *Cooperia* spp. may contribute to the severity of disease in mixed parasite infections and worsen the effects of the brown stomach worm (*Teladorsagia circumcincta*) and black scour worm (*Trichostrongylus colubriformis*). However, to quote one prominent veterinarian, “I cannot recall a single case of disease in small ruminants in the US associated with *Cooperia* spp. in my 34 years of being a parasitologist.”



While *Cooperia* spp. are one of the most prevalent parasites in US cattle, they are not a problem in small ruminants.

DIAGNOSIS

Symptoms of *Cooperia* spp. infection are not different from intestinal roundworm species. Since *Cooperia* spp. eggs are of similar size and shape of other strongyle-type eggs, eggs need to be cultured in the laboratory to the 3rd larval stage to accurately identify the genera. *Cooperia* spp. 3rd stage larvae have 16 gut cells and are readily identifiable by two refractile granules at the top of the head and by the length of the tail sheath. At postmortem examination, the numbers of small intestinal worms are usually small and the worms do not cause any specific lesions in the intestinal lining. Adult *Cooperia* spp. worms can reach lengths up to 10 mm (0.4 in). They are often coiled.



TREATMENT

Treatment specifically for *Cooperia* spp. is unnecessary. The broad spectrum dewormers that are effective against other worms are also effective against *Cooperia* spp. Resistance to the dewormers does not appear to be a problem with *Cooperia* spp. Treatment for mixed worm infections should be based on targeted selective treatment criteria, such as FAMACHA© and the Five Point Check©. Weight gain and fecal egg count are other criteria that can be used to make selective deworming decisions, especially in areas where the barber pole worm (*Haemonchus contortus*) is not the primary parasite. The whole flock/herd should not be routinely dewormed, as this accelerates the development of resistant worms.

PREVENTION

Cooperia spp. burdens can be reduced with the same “Best Management Practices” that are used to control other worms. These include pasture and grazing management, animal (genetic) selection, nutritional management, targeted selective treatment, and proper use of dewormers. Copper oxide wire particles have no effect on *Cooperia* spp., whereas Bio-Worma® (feed additive) will trap and kill *Cooperia* spp. and other worm larvae in the manure; thereby, helping to reduce pasture reinfection.



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