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Other worms

Brown Stomach Worm
(Teladorsagia circumcincta)

The adult brown stomach worm (*Teladorsagia circumcincta*), formerly known as *Ostertagia circumcincta*, is a small reddish-brown worm, approximately 0.2 to 0.3 inches (6-9 mm) long that develops and lives in the abomasum, or true stomach, of sheep and goats. The brown stomach worm has the dubious distinction of being one of the top three gastrointestinal nematodes (GIN) in abundance and cause of production losses worldwide. The other two GIN are the barber pole worm (*Haemonchus contortus*) and *Trichostrongylus* species. Although not nearly as prolific as the barber pole worm (*Haemonchus contortus*), producing only 50-100 eggs per day compared to the thousands of eggs per day of the barber pole worm, the brown stomach worm is still one of the leading causes of parasitic gastroenteritis in small ruminants.

You will find the brown stomach worm in temperate climates, commonly characterized by moderate rainfall spread throughout the year, warm summers and cool to cold winters.

LIFE CYCLE

The life cycle of the brown stomach worm is similar to the life cycles of other GIN of sheep and goats (see Timely Topic: The four phases of parasitic infection, Jim Miller, August 2021). Eggs from adult worms living in the abomasum are deposited in feces into the environment, developing into infective third-stage larvae (L3) which are then ingested by grazing sheep or goats, resulting in infection. The larvae of brown stomach worm development more successfully in colder environmental temperatures than the barber pole worm, with an optimum developmental temperature range of 60-84°F (16-29°C) versus 77-99°F (25-37°C) for the barber pole worm.

Eggs in feces can hatch at temperatures even as low as 41°F (5°C). Once developed to L3, a larva can survive on pasture for up to 14 months and may survive overwinter in cold conditions. After being consumed by the grazing

The brown stomach worm has the dubious distinction of being one of the top three gastrointestinal nematodes (GIN) in abundance and cause of production losses worldwide.

Image courtesy of Elizabeth Kass

Figure 1.

Abomasum impacted by the brown stomach worm
Image courtesy of Dr. R. Woodgate

animal, the L3 travel to the abomasum where they enter the mucosa and migrate to the abomasal glands which are responsible for the production of the acid and enzymes needed for protein digestion.

They develop into fourth-stage larvae (L4) in the glands, the most damaging stage of development, and during this process the function of the glands are severely damaged, hindering the ability of the glands to produce the acid and enzymes needed for protein digestion. The changes occurring within the abomasum during this destructive process results in the appearance of numerous nodules within the abomasal mucosa (Figure 1). The L4 then emerge from the glands and migrate back into the lumen of the abomasum and develop to adult worms. They reside in the lumen for the remainder of their life mating and producing eggs to continue the life cycle.

DIAGNOSIS AND TREATMENT

The damage done during the life cycle of the brown stomach worm is closely linked to the clinical signs of infection. The destruction of the abomasal glands and the acid they produce leads to an increase in pH in the abomasum, preventing protein digestion and ultimately an impairment of nutrient absorption in the small intestine. All of this leads to the clinical signs of poor appetite, weight loss, diarrhea, bottle jaw and in severe cases, death.

Commonly, a variety of GIN species infect the gastrointestinal tract of small ruminants, with severity of clinical signs dependent on the quantity and type/s of GIN present. Therefore, best management practices to control internal parasites of small ruminants such as those found in the Best Management Fact Sheet Series on ACSRPC website (wormx.info) should be utilized for diagnosis, treatment and control.

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