



Haemonchus contortus Fact Sheet

A Fact Sheet for the Canadian Sheep and Goat Industries

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Small ruminants, such as sheep and goats, are extremely susceptible to the adverse effects of intestinal parasites¹. *Haemonchus contortus* is a major challenge throughout the world, particularly in regions with warm and wet conditions^{2,3}. Young and lactating sheep and goats are the most susceptible to *Haemonchus* infection⁴.

Haemonchus is incredibly costly to the Canadian sheep and goat industry due to significant performance losses, morbidity and mortality, drug costs, and labor associated with treatment and management⁵. *Haemonchus* cannot be eradicated, but can be limited, through control, to decrease economic losses for producers⁴.

The Code of Practice for the Care and Handling of Sheep requires that⁶:

- Producers must understand the basic biology of parasites that affect sheep.
- Stockpeople must monitor flock for signs of internal/external parasitism.
- Parasite control and treatment strategies must be developed and implemented on-farm; work with the flock veterinarian to develop a control strategy tailored to the farm location and management.
- Parasite control and treatment strategies for tapeworms in dogs must be developed and implemented on farm.

What is *Haemonchus contortus*?

Haemonchus contortus, better known as the barber pole worm or wire worm, is an intestinal worm that uses sheep and goats as a host^{3,7}. Adult worms live in the abomasum (also known as the true stomach) of an animal and feeds on their

blood by puncturing the stomach wall (**Figure 1**)^{1,3}. This causes haemonchosis, an infection characterized by severe anemia from blood loss¹. Collectively, worms can consume up to 1/10th of an animal's blood volume in 24 hours⁸.

Signs of *Haemonchosis*

Signs of a *Haemonchus contortus* infestation include: anemia, dehydration, "bottle jaw" (accumulation of fluid in the lower jaw due to anemia), poor appetite, weight loss, and significantly reduced growth^{3,5,7,10}. Due to anemia, the conjunctival mucous membranes around the eyes appear pale pink to white color^{7,11}.



Figure 1. Heavy *Haemonchus contortus* infection in abomasum of a sheep

Source: Merck Manual Veterinary Manual

Lifecycle and Infectivity

The life cycle of *Haemonchus contortus* takes 17-21 days to complete⁹. It begins when larvae in the infective stage are ingested by sheep and goats during grazing³. Once ingested, the larvae travel to the animal's abomasum where they continue to develop³. Lastly, they molt in the adult form. Adult

female worms produce thousands of eggs per day (5,000-10,000) which are secreted in the animal's feces onto pasture³. Eggs will hatch into larvae under favorable conditions (e.g. warm and moist) and develop within fecal pellets through the immature stages in as short as 5 days^{3,7}. Infective larvae travel onto pasture where they are ingested by sheep and goats during grazing, restarting the life cycle.

In Canada, infectivity is highest in late summer (mid-July to August) and early fall because *Haemonchus* prefers warm and humid conditions (>25°C)¹². The two biggest sources of pasture contamination with *Haemonchus* eggs are 1) lambs and kids (late July/August) followed by 2) ewes and does in late gestation and lactation (usually spring)¹³.

Larvae go into an inactive state inside the animal during winter to survive the Canadian climate^{7,12}. In this state, the worms do not lay eggs or cause damage to their hosts. In late April – early May as the worms resume activity, ewes or does develop severe infestations at the same time as late pregnancy or lactation when the animal's immune system is stressed^{7,12}. Ewes/does will contaminate the spring pasture with eggs and immediately expose vulnerable lambs or kids.

Contributing Factors

There are various factors that contribute to *Haemonchus contortus* infestation including: environments with high temperatures and humidity, an animal's genetic make-up, and resistance to dewormers due to excessive usage³.

Control Methods

To determine what control management protocol is best for your operation, consult with your veterinarian.

Goals to controlling *Haemonchus contortus* include preventing heavy exposure in

susceptible hosts, reducing overall levels of pasture contamination, minimizing the effects of parasite burdens, and encouraging the development of immunity in animals¹⁴. Prompt recognition of factors that favor parasitic infection is essential (e.g. weather, grazing behavior)¹⁴. It is also important to distinguish the difference between sheep and goats that are "resistant" and those that are "resilient". Resistance refers to the ability of the host to actively reduce the number of incoming larvae or worms¹³. Resilience refers to the host's ability to maintain productivity while tolerating a challenging parasite infection¹³.

Integrative Parasite Management

Management practices must attempt to interrupt the worm's life cycle whether it be through dewormers, animal management, or pasture management⁸. Coordination of dewormers with other methods of control provide safe pastures and give economic advantage to producers by reducing labour requirements, pasture contamination, and dewormer resistance^{2,11}.

Chemical

Chemical management of parasites involves proper use of synthetic dewormers, targeted selected treatment, and testing for dewormer resistance. Timing to deworm varies between regions and for different species of parasites¹⁴. Synthetic dewormers are designed to reduce worm burdens and are often used to combat *Haemonchosis* because they are cheap, simple, and cost effective⁴. However, resistance has become a serious problem. Increased resistance can also occur because of frequent dosing, under-dosing, inappropriate administration, or wrong dewormer choices¹⁰. Therefore, it is recommended that producers test for dewormer resistance every 1-2 years using a fecal egg count reduction test (FECRT)^{12,14}. The best time to do this is early to mid-summer when *Haemonchus* is most active. Targeted selected treatment (TST) involves only treating animals that either require treatment. It

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