Cysticercus ovis Condemnations in Sheep – An Emerging Problem in Canada
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Cysticercus ovis (C. ovis) is the intermediate larval stage of the canid tapeworm, Taenia ovis. The adult tapeworm lives in the intestines of domestic dogs and wild canids (ie. coyotes, foxes, wolves). Infections have been documented rarely in cats. Tapeworm segments, which contain thousands of eggs, are passed in the feces and contaminate the environment of sheep and goats. Eggs can survive in the environment (feed and pasture) for three to twelve months. Eggs are ingested by sheep/goats while grazing on pasture or while consuming contaminated stored feeds. Eggs hatch in the intestine and then the larvae penetrate the intestinal wall and are carried via the bloodstream to target tissues. Small (~5mm x 9mm), fluid-filled cysts develop. The most common sites to find cysts are the masseter muscles, heart, diaphragm and skeletal muscles. It is believed to take seven to ten weeks for a cyst to fully develop and become infective. If a dog eats raw sheep or goat tissues that contain cysts, the larval tapeworm will develop into an adult in the dog’s intestine and the cycle will continue.

Cysticerci do not usually stimulate an inflammatory response in the intermediate host’s tissues and are often detected at slaughter inspection. The disease is also known as “sheep measles”. Cysts start out as clear, fluid-filled structures and over time degenerate. Dead cysts are seen as hard, caseous or calcified nodules in the muscle. C. ovis is neither a reportable nor a zoonotic disease in sheep or goats (unlike Cysticercus bovis in cattle). However it is condemnable. Carcasses that are only lightly infected can be trimmed and passed for human consumption. The FAO meat inspection manual for developing countries suggests the following guidelines for carcass condemnation:

"In heavy infestations the carcass is condemned. It is commonly considered that an animal is heavily infested if lesions are discovered in two of the usual inspection sites including the masseter muscle, tongue, oesophagus, heart, diaphragm or exposed musculature and in two sites during incision into the shoulder and the rounds. Carcasses with C. ovis infestations may not be acceptable for export.”

The economic losses associated with this infection can be substantial to buyers and producers. Ontario has experienced sporadic outbreaks of C. ovis in feeder lambs over the past 15 years, but in 2008 the severity of the problem increased. There is also great concern that if the infection becomes established in wild canids, the disease may be difficult to control.
Once a lamb is infected there is no treatment that will remove the cysts. The most important control measure is deworming the dog (working, guard or pet) with a suitable cestocidal drug 3 to 4 times a year. Dogs should be dewormed once a month if cysts have been found in sheep carcasses. Anthelmintic treatments include: epsiprantel (ie. Cestex®Tablets, 5.5 mg/kg), praziquantel (ie. Droncit® or Drontal® formulations, number of tablets or injectable volume based on body weight), or nitroscanate (ie. Lopatol® Tablets, number of tablets based on body weight).

Additional preventative measures include not feeding raw sheep meat back to dogs. Sheep meat can be frozen at -10°C for 7 days or cooked thoroughly at 72°C to destroy tapeworms in cysts. Producers should also ensure that all deadstock is disposed of properly on-farm to prevent scavenging.


