Alberta Sheep








The Impact of Dog Tapeworms on Your Sheep

Guard dogs are a common sight on sheep farms. Producers need their dogs to guard and work their flock. But without proper precautions, dogs can be a source of parasitic disease that can rob your sheep enterprise of profit.

Dogs can be a host to a large variety of intestinal parasites, and tapeworms in particular can harm your sheep. The adult stage of the tapeworm resides in the small intestine of dogs, coyotes and other wild canids. As the tapeworm matures, it sheds segments of its body, which are passed in the feces of the dog, and shed onto pastures or feeding areas of sheep. When dried, these segments look like a grain of rice, and are a source of thousands of eggs, which can survive in the environment for up to a year.

When sheep consume these segments, the eggs hatch in the sheep's gut and the tiny larvae burrow through the wall of the intestine to travel to its "target" tissue. Once there, the larvae develop into a small bladder-like structure called a cyst. Each cyst contains an embryonic head of a new tapeworm called a scolex. If a dog or coyote eats the tissues that contain these cysts, this embryonic scolex will turn into an adult tapeworm in the dog's intestine and the cycle will continue.

There are two main species of tapeworm which affect sheep, and they have different target organs.

The species most prevalent in Western Canada is *Cysticercus ovis*, which is the intermediate stage of the dog tapeworm *Taenia ovis*. This tapeworm species causes sheep measles, and has been seen in increasing numbers in Western Canada's slaughter lambs. *C. ovis* eggs ingested by grazing sheep, hatch in the sheep's intestinal tract, and the larvae will burrow through the intestinal wall and localize in muscular tissues to develop into cysts approximately 9mm x 5mm in size. It takes 7 to 10 weeks for the cysts to fully develop after the eggs are ingested by the sheep. The most common locations to find the cysts at slaughter inspection are the cheek muscles, diaphragm, heart and skeletal muscles. The cysts will begin to degenerate and are often seen at slaughter as calcified or caseous ("cheesy") nodules in the muscle tissues. Carcasses that are only lightly infected can be trimmed and passed for human consumption. Animals that are heavily infected with cysts are condemned at the slaughterhouse.

There is another Cysticercus species seen less commonly in Western Canada, but with a similar lifecycle. *Cysticercus tenuicollis* cysts are found attached to the abdominal wall and the surface of the liver of the sheep. At slaughter, the liver may show long, wiggly migration tracts, moderately large cysts or small round scars. Regardless, the liver is condemned as unfit for human consumption. The adult stage of the tapeworm *Taenia hydatigena* lives in the dog's intestine, and can be controlled with adequate dewormers.

Once a lamb is infected,
the carcass may be condemned!

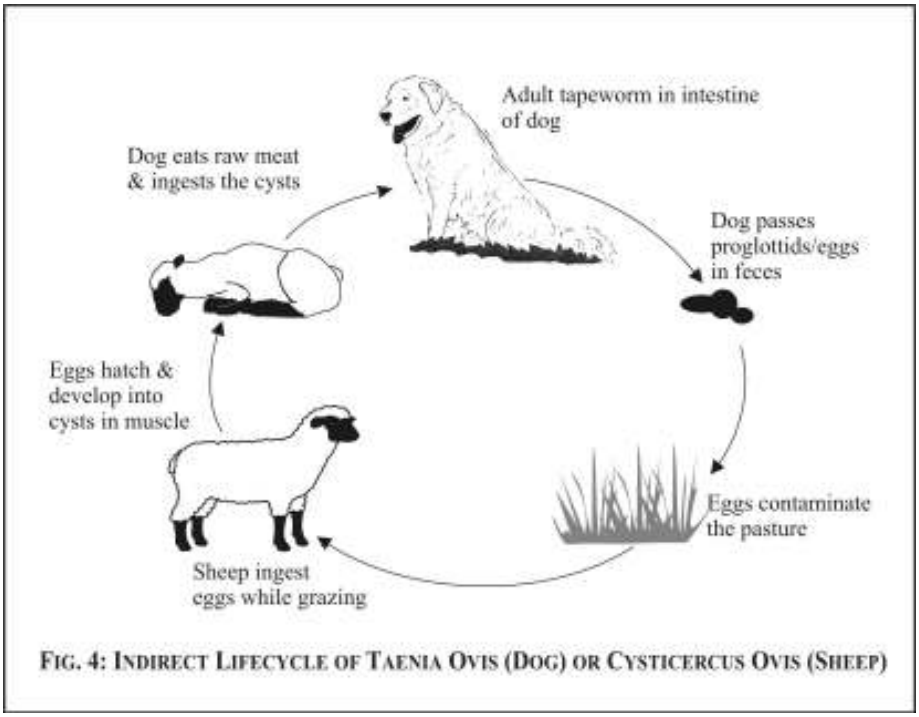

FIG. 4: INDIRECT LIFECYCLE OF TAENIA OVIS (DOG) OR CYSTICERCUS OVIS (SHEEP)

Treatment of the cysts once the sheep is infected is very difficult, and control of the problem must be focused on the adult stage of the tapeworm in the dog. It is very important that all dogs with access to your sheep be routinely dewormed, every 2-3 months, or more frequently if cysts have been found in your sheep. There are several dewormers for dogs that are very effective at controlling tapeworms, and the appropriate drug to use should be discussed with your veterinarian. To prevent inadvertent infection, do not feed raw sheep meat back to your dogs. Cull sheep infected with *C. ovis* can be fed to dogs but the meat should be cooked thoroughly or frozen to -18◦C for a minimum of 10 days. All deadstock should be buried at least 2 ft deep, or appropriately composted to prevent scavenging of sheep carcasses by wild canids such as coyotes, wolves or foxes. If the local wild canid population becomes infected with the adult tapeworms, control is very difficult. Unfortunately, the cyst stage of the infection can occur in deer. Once the wild canid – deer cycle is established in your region, control in pastured sheep becomes extremely difficult and you will likely have to limit the grazing of lambs in affected areas.

Information derived from
"Dog Tapeworms & Your Sheep"
Dr. Paula Menzies,
Ruminant Health Management Group,
Dept. Population Medicine, Ontario Veterinary College, University of Guelph
and
"Cysticercosis in Sheep"
Alberta Sheep & Wool Commission

Figure taken from "*Guide to Parasites in Sheep"*
Dr Ileana Wenger
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