



Sheep Measles

Key Messages

1. Sheep measles are small cysts found in the muscles of sheep caused by the ingestion of eggs from the dog tapeworm, *Taenia ovis*.
2. It causes losses of \$2.4 million per annum due to trimming, carcass downgrades and condemnations.
3. Regular monthly tape worming and removal of raw sheep meat and offal from the diet of dogs can control the disease.

What are sheep measles?

Sheep measles (*Cysticercus ovis*) are infective cysts from the dog tapeworm *Taenia ovis*, found in the muscles of sheep and goats, especially the heart and diaphragm. They are oval in shape and 6-10mm in length, initially they are fluid filled and contain an infective larvae, but degenerate over time and become hard calcified scars.

They present no risk to human or sheep health, but their importance is due to the trimming, downgrading and condemnation at abattoirs.

Disease on farm

Sheep measles are present throughout Australia. In 2013-2014 between 40 and 90% of properties had evidence of sheep measles infection in lines monitored at abattoirs.

Sheep measles has no effect on sheep health or on farm production. In dogs the sheep measles tapeworm can be quite large, up to 2 metres in length, but usually causes no harm to the dog. Occasionally you will see evidence of infective segments in the faeces of dogs, but *Taenia ovis* is just one of a number of different tapeworm species found in dogs, including the tapeworms that cause bladder worm (*Taenia hydatigena*) and hydatids cysts (*Echinococcus granulosus*) in sheep.

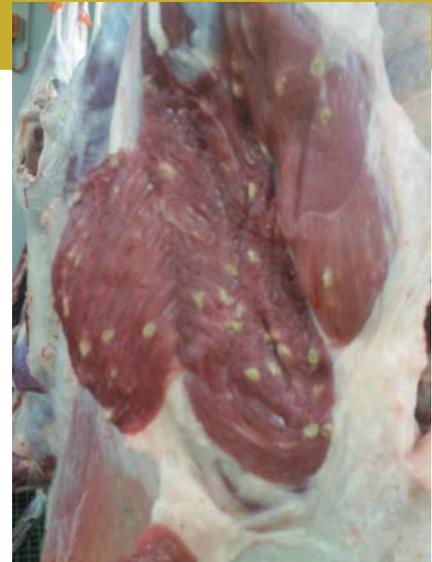
How is it spread?

Sheep measles are formed when sheep eat tapeworm eggs on pasture. Once ingested the eggs hatch and the larvae migrate through the gut wall, travel through the body and localise in the muscle, particularly the heart and diaphragm.

The cysts are infective to dogs for around 3 months, after this they die, calcify and remain for the lifetime of the sheep. The dog becomes infected when they are fed sheep meat or scavenge carcasses with viable cysts. Each cyst contains a single head of a tapeworm, which once ingested by a dog is capable of producing viable eggs within 35 days. Each tapeworm in a dog can contaminate pastures with 180,000 to 360,000 eggs per day. These eggs can remain viable on pasture for up to a year. Eggs can be mechanically spread by flies, rain and wind and a single infected dog can infect sheep in a wide radius of up to 6 km.

Disease picture at the abattoir

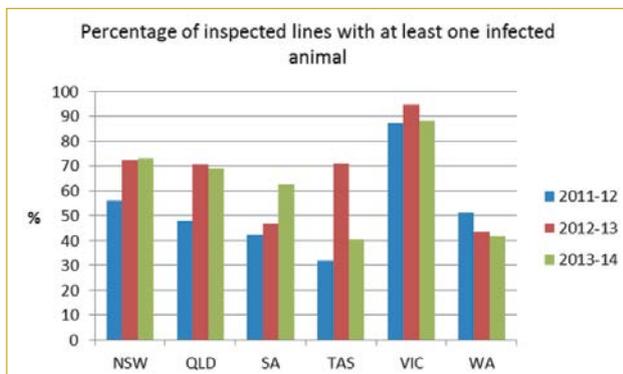
Sheep measles cysts are found in around 4% of sheep and cost the industry \$2.4 million annually. Any affected organs (e.g. hearts) are condemned and cysts are trimmed from muscle in light infections. However if five or more cysts are found in the muscle, the whole carcass is condemned.



(PIRSA)

June 2015

Sheep Measles



Treatment

There is no available treatment for infected sheep. Treatment, and prevention of dogs becoming infected in the first place, is the basis of protecting sheep from infection.

Prevention

Prevention is aimed at breaking the life cycle by ensuring dogs are no longer being infected and if they do become infected, that the tapeworms are killed before they can produce eggs. There are two other important tapeworms that have a sheep/dog life cycle that cause hydatid cysts and bladder worm in sheep. These will also be controlled by following the same program.

1. Worm all farm and house dogs, monthly with a wormer that contains the active ingredient praziquantel. Hunters or contractors with dogs should provide evidence that their dogs have been treated at least 3 days, and no longer than a month before they come on to the property.
2. Feed commercial packaged dog food to dogs and don't feed or allow access to sheep or goat carcasses.
3. Secure dogs at night to stop scavenging and remove sheep carcasses to stop access for domestic dogs, wild dogs and foxes. Consider burying, burning or creating a fenced (dog proof) offal pit.

4. All home killing of sheep should occur in a dog proof enclosure.

Because of the ability for eggs to spread some distance, control works best when organised on an area basis.

What to expect from a control program

Even after a control program is commenced, sheep may still become infected for up to a year due to existing viable eggs on pasture. Cysts are present in sheep for life, so once the lifecycle has been broken it may take many years to turn over the flock and remove the last infected animals.

Occasionally breakdowns in control may occur when a visiting infected dog contaminates pasture, and large numbers of naïve sheep are heavily infected due to their previous lack of exposure.

In some areas wild dogs and foxes may play a part in the maintenance of sheep measles in the sheep population. Control of foxes and wild dogs also has on farm welfare and production advantages and will help reduce the level of infection

