

Tapeworm infections in sheep and dogs

The Moredun Research Institute discusses parasitic worms, their treatment and effect on production



Tapeworms are flat, segmented, parasitic worms and an adult tapeworm can be several metres in length. The mature, terminal segments of the worm (containing large numbers of eggs) are cast off regularly and are passed out in the host faeces.

They have complex life cycles which involve an intermediate host (infected with larvae) and a final host (infected with the adult tapeworms).

Sheep are the final host to one species tapeworm, *Moniezia expansa*, the adult 'sheep' tapeworm. The intermediate host is a soil mite. *M.expansa* is

considered to be non-pathogenic to sheep and is more of a worry to flock owners through the obvious presence of expelled tapeworm segments in sheep faeces.

However, sheep are also the intermediate host to several other species of tapeworm – the major four being *Taenia hydatigena* – the thin necked bladder worm, *Taenia ovis* – the sheep bladder worm, *Taenia multiceps* – the tapeworm that causes gid, and *Echinococcus granulosus* – the tapeworm that causes hydatidosis. All these tapeworms have the domestic dog as the final host. Sheep

are infected by the larvae of these tapeworms and as the larvae must be ingested by dogs in order to complete its life cycle the larvae travel to the muscle and major organs of the sheep they infect, causing considerable damage in some cases.

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PRODUCTION LOSSES

Although the sheep tapeworm *M. expansa* is not thought to result in any economic losses to sheep producers, there is no doubt that the dog tapeworm larvae can cause considerable losses to the sheep industry. However, most sheep farmers are

Tapeworm and tapeworm larvae control in sheep

COMMON NAME	TREATMENT	CONTROL AND PREVENTION
Adult sheep tapeworm	Benzimidazole drench ¹	Seek guidance from vet or SQP for drenching strategy
Larvae of thin necked bladder worm	none	Dispose of sheep carcasses promptly and worm farm dogs regularly
Larvae of sheep bladder worm	none	as above
Larvae of gid worm	none	as above
Larvae of tapeworm that causes hydatidosis	Surgery is possible to extract cysts from brain of infected sheep	as above

unaware of the economic damage caused by these infections as a large proportion of these losses occur after slaughter due to carcass and offal condemnations and increased disposal costs.

CONTROL AND TREATMENT

Treating an animal infected with adult tapeworms is very simple. A benzimidazole drench is very effective at treating sheep infected with the adult sheep tapeworm *M. expansa*, and Praziquantel can be used to successfully treat dogs that may be infected with adults of any of the four common dog tapeworms listed previously.

However, there is no treat-

ment available for sheep infected with the larvae of the dog tapeworms. Effective control of these tapeworms and their larvae depends on

an integrated control programme involving both dog owners and sheep farmers (see table below). It should be noted that most tapeworms

and tapeworm larvae found in sheep pose no health risk to humans.

Humans can, however, become infected with the

larvae of the tapeworm that causes hydatidosis through contact with infected dogs or dog faeces. This can result in serious disease in humans, particularly children.

Tapeworm control in dogs

COMMON NAME	TREATMENT	CONTROL AND PREVENTION
Adult thin necked bladder worm	Treat with Praziquantel every six weeks	Do not allow dogs to stray, particularly where they can scavenge on sheep carcasses
Adult sheep bladder worm	as above	as above
Adult gid worm	as above	as above
Adult tapeworm that causes hydatidosis	as above	as above

This article is based on a Moredun newsheet written by Dr Peter Bates, an independent parasitologist consultant. If you would like more information about controlling tapeworm and tapeworm larvae in sheep, including a free 12-page newsheet, please contact Maggie Bennett at Moredun, on 0131 445 5111 or email info@moredun.org.uk

VETERINARY REVIEW – SHEEP

Warm weather watch for sheep disease

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Vet **Richard Knight** provides some timely advice for your customers



Richard Knight
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With the welcome warm weather, we're not the only ones thriving on it. All the coccidia around at the moment are thriving too, and with any scouring lambs at this time of year coccidiosis has to be very high on the list of things to be considered. The Genus which causes the problem is called *Eimeria*, with *E. ovinoidalis* and *E. crandallis* being the two species which are known to cause disease in sheep. A few other species can infect the sheep, but these are of little pathogenic importance.

When considering scouring lambs, a faecal sample is very useful. This sheds light on nematodes and coccidia that are there and can also

rule out those that are not there! Having said that, sudden deaths caused by coccidia and *Nematodirus battus*, where there is no evidence in the faeces, can occur. Post-nematode infection gut damage and turning out onto very lush pasture are other causes which need to be thrown into the mix for consideration. Coccidial oocyst counts can vary massively between batches and flocks; indeed we have found oocyst counts to be very high at 50,000 oocysts/gram of faeces in normal lamb faecal pellets where the lambs are normal and growing very well, so what's that all about? The explanation can be found in the fact that the composition of that oocyst count varies, with some farms not seeming to suffer the two pathogenic strains.

Where the pathogenic strains are present, we see scour at 2,000-3,000 oocysts/gram, which resolves with medical treatment. So where do we go? The Animal Health Veterinary Laboratories Agency (AHVLA) offers a service through the farmers' veterinary surgeons where they can hatch and speciate the oocysts present to determine the proportions of each species, therefore showing the presence of pathogenic species on the farm in question. It makes great medical sense to perform this test on any farm that seems to have a problem with coccidiosis, especially when the problem is recurrent. The point of all this is to ensure that the lambs are treated properly with a medicine that has the best chance of working, and

is over-used as little as possible to reduce the chance of resistance developing over a period of time. So, to put a bit more science back into the job, "My lambs are scoured with cocci" isn't necessarily the case without looking (at the faeces and the farm history), and also just because coccidia are there in the faeces doesn't always mean they are causing a problem. The risk of coccidiosis can be lessened by reducing overcrowding, which can be difficult if weather conditions mean that the grass growth is drastically reduced. Not making younger lambs follow on from older lambs can also reduce the risk of disease as the older ones can multiply up the coccidia and show little signs themselves as their immune system develops. Concurrent infection with

Nematodirus battus can also worsen symptoms of coccidiosis scour, so if symptoms persist after treatment for *Nematodirus*, and the advisable 10-day post-treatment tests show that the wormer has worked, then treatment for coccidiosis may be needed.

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