

Risk of the spread of disease in livestock from dog faeces

Briefing Note for Access Authorities

The purpose of this note is to provide local and national park authority Access Officers with information and advice about the risk of the transmission of diseases in livestock from contaminated dog faeces.



Disease in livestock

There is growing evidence of the links between two specific diseases in livestock and the presence on grazing land of faeces from infected dogs. The two diseases are:

- Neosporosis – which can cause abortions in cattle
- Sarcocystosis – which can cause neurological disease and death in sheep

Neosporosis -

Neosporosis is caused by the parasite *Neospora caninum* and the disease is now thought to be responsible for the highest percentage of all cattle abortions reported in the UK. Once neosporosis infection has occurred in a cattle herd it can persist within the herd due to the vertical transmission of the parasite between cows and calves. The Moredun Research Institute (for Animal Health) near Edinburgh is carrying out research into the disease at present. Although this work is ongoing, the Moredun has published information on the disease and the main points to note are:

- *Neospora* eggs are produced by infected dogs* and excreted in their faeces.
- Cattle will become infected if they eat food or drink water contaminated with *Neospora* eggs.
- Infection in cattle is common and frequently there are no obvious ill effects for cow or calf.
- The disease manifests when *Neospora* multiplies in the cells of the developing calf and its placenta and causes sufficient damage to trigger abortion or stillbirth.
- Control of *Neospora* abortion is difficult but certain management practices can be applied to reduce the risks.
- There are no drugs currently available to control this disease in cattle or to cure infected animals.
- No vaccine is currently licensed in the UK to prevent neosporosis in cattle.
- Current knowledge suggests that *Neospora* does not cause disease in human beings.

(ref: www.moredun.org.uk/research/practical-animal-health-information)

* Moredun advise that dogs are the definitive host of the parasite and that they have not found a link between transmission of *Neospora* eggs and other carnivores such as wild foxes.

The vertical transmission of neosporosis is a major cause of persistent infection within a herd, however spread of the disease between unrelated females only occurs where a dog acts as host to the parasite – such point sources of transmission can cause 'abortion storms' within a herd. The parasite can be picked up by dogs through the ingestion of contaminated livestock material, such as placentas from newly calved cows, or by being fed contaminated raw meat. This does not rule out other possible transmission routes, but there is no definitive information on other transmission routes at the current time. Faeces from infected dogs can contaminate pasture and potentially cattle feed, water or bedding.

Evidence suggests that only a small number of infected dogs develop symptoms of the disease, which include progressive lameness and paralysis in pups less than 6 months of age. Infected bitches can pass the parasite to their puppies during pregnancy by transplacental infection. If dogs do develop symptoms, most of these cases are fatal or require euthanasia.

The prevalence of the disease in herds, and its potential impact on farm economics - due to infected cows being more likely to abort, premature culling and reduced milk yields - make this an important disease to try to control. As there is no way to effectively prevent (through vaccination) or to treat neosporosis, a farmer's main line of defence against the disease is to take reasonable and proportionate actions to manage the likelihood of *Neospora* contamination.

Sarcocystosis -

Sarcocystosis is also caused by parasites, *Sarcocystis spp*, which use a number of intermediate hosts, including dogs. The main points to note are:

- *Sarcocystis* eggs are produced by infected carnivores and excreted in their faeces.
- Sheep will become infected if they eat food or drink water contaminated with *Sarcocystis* eggs.

In many cases, infected livestock show no symptoms, but the disease is more likely to manifest if there is a high level of infection in the environment which could occur in a field used heavily for dog walking. Even when symptoms have not been present, the presence of sarcocysts on a carcass following slaughter can result in the carcass being condemned. The disease can be passed on from ewe to lamb during pregnancy, but vertical transmission is not believed to be an important method of spread for sarcocystosis.

Dogs can pick up the parasite through the ingestion of contaminated material from carcasses, or by being fed contaminated raw sheep meat. Faeces from infected dogs can contaminate pasture and potentially animal feed, water or bedding. In contrast to neosporosis, there is no transmission of the *Sarcocystis* parasite between bitch and puppy.

The scientific evidence demonstrating the link between infected dogs and sarcocystosis in sheep is compelling, but the disease is generally regarded as less of a problem than neosporosis.

There is no vaccine against sarcocystosis in sheep and although theoretically there are some possible treatments available, the high cost and practicality of administration of these prevents their application. As with neosporosis, the most feasible option for the farmer is to introduce reasonable and proportionate management practices to reduce infection risks.

Control of transmission by dogs

Transmission of the diseases by dogs involves two stages – dogs eating material which contains the parasites, and subsequent ingestion of the dog's faeces by livestock. The following issues are relevant in trying to minimise the risk of contaminated dog faeces transmitting these diseases to livestock. For Access Officers, the issue of most relevance, in terms of the potential to play a helpful role, relates to dog fouling – see the 3rd point:

- Carcass management – both diseases can be picked up by dogs which eat infected placenta/ foetal material, or raw meat from infected stock. To minimise the risk of picking up the parasites, dogs, including farm dogs, should not be allowed to eat material from fallen stock, or other material such as placentas or foetal material. Prompt disposal of carcasses and any other potentially contaminated material will help to limit the spread of disease.

- Working dogs - there is a need to raise awareness of the potential risk of infection of working dogs from eating uncooked meat. Animal Health is responsible for issuing approvals to allow raw meat not certified for human consumption to be fed to animals (approvals are required for working dogs, not pet dogs) and can include hunt kennels, racing greyhounds etc. as well as farm dogs. Farm dogs should, as far as possible, not be allowed to defecate in grazing fields, or in buildings which are used to store animal feed or bedding, or to house animals.
- Domestic / pet dogs – the Dog Fouling (Scotland) Act 2003 makes it an offence to not pick up your dog’s faeces, and applies to all public places (but specifically exempts agricultural land, including grazing land *). Public places include public parks, mainly with the intention of reducing the risk of transmission of the disease toxocarasis to children. This offence applies to everyone in charge of a dog, including commercial dog walkers. Awareness should be raised of the potential risk of passing on infection to livestock, and all dog walkers should be encouraged to pick up their dogs’ waste, even if they are on agricultural land and therefore not required to do so by the Dog Fouling (Scotland) Act.
- Raw meat - if raw meat is the preferred choice for feeding dogs, dog owners should be encouraged to seek advice on how to kill parasites before meat is eaten, for example freezing the meat for a period of days before feeding it.

* For information, the NFUS intends to seek a change to the Dog Fouling (Scotland) Act 2003 to remove the exemption of agricultural land, based on the new evidence of the link between disease in livestock and the contribution that infected dogs have in the transmission of the associated parasites.

Vets and other organisations which provide advice to dog owners can help advise on precautions to take if feeding dogs raw meat, and the NFUS and SRPBA have roles in disseminating advice relating to carcass management and working dogs. In terms of encouraging farmers and land managers to play their part in controlling the risk of transmission by dogs, the key messages are set out below.

Key messages for farmers / land managers:

- You should remove any raw livestock matter on farms promptly – such as an aborted foetus, the placenta of a newly born calf / lamb, or fallen stock - to make sure that dogs can’t get access to it or eat it.
- You should make sure your own dogs do not defecate where livestock graze, where animal feed or bedding is stored, or where stock is housed undercover.
- Feedstuffs, hay, bedding and water should be kept free of faecal contamination by dogs and other carnivores, as well as vermin.

Managing local issues

At a national level, the Scottish Outdoor Access Code campaign includes specific messages aimed at dog walkers, and there is a range of promotional materials available. At a more local level, it is likely that there will be relatively few locations where high levels of local dog-walking coincide with grazing land - repeat use by local dog walkers to ‘empty’ their dogs more often takes place in local parks / greenspace; woodland; green-lanes / tracks etc.

Access Officers can work with land managers to identify where livestock fields are heavily used by dog walkers, or where incidences of the diseases have been reported and may be linked to high levels of dog-walking. Where local ‘hot-spots’ occur on grazing land, the local access authority can work with farmers to manage a communications campaign aimed at raising awareness of the risks to livestock and encouraging people to pick up after their dog.

It is worth noting that, whilst the two issues highlighted in this briefing are of particular concern due to the lack of effective forms of treatment and the economic impact they can have on farming, other problems affecting livestock, including horses and pigs, can occur from grazing land contaminated by infected dog faeces. For animal health reasons, and for the benefit of other people enjoying the outdoors, it is helpful to encourage good practice by the public to always pick up after their dog.

Guidance on local communications:

- Build on the SOAC dog walkers campaign materials rather than each access authority re-inventing the wheel.
- Target communications at the key audiences – it may be quite a simple task to target local residents with a leaflet; or if the area is heavily used by commercial dog walking companies, they too are quite easy to make contact with, explain the issues, request that they choose their walk locations carefully and advise that they always pick up dog faeces.
- Target on-site signage at key 'hot spots' in liaison with land managers rather than filling the countryside with these livestock-related messages.
- Target other communication methods at settings where dog walkers are likely to view posters / leaflets more regularly eg vets, breeding clubs, kennels.

See Stirling Council case study at **Annex A**

Key messages for dog walkers using local 'hot spots':

Parasites can be transmitted to livestock through infected dog waste being left on grazing land. Some of these parasites cause diseases in livestock which can result in death of sheep, and abortion in cattle.

Dog walkers and owners can take some simple steps to help minimise the risk of spreading these diseases:

- **Always remove dog waste from all locations, including grazing land.** If your dog is carrying the parasites, it will pass the eggs in its waste. By safely disposing of dog waste, you will help minimise the risk of passing on disease to livestock.
- **Don't let your dog eat remains of dead animals or leftover birth materials such as placentas whilst out walking.** Your dog may be infected by parasites if you allow it to eat animal material it may find whilst out on a walk. Often the parasites cause no symptoms in dogs, but sometimes the disease of neosporosis can seriously affect your dog's health and possibly result in death.
- **If you choose to feed your dog raw meat, make sure that it is parasite-free.** Your dog can pick up parasites from eating uncooked meat. You won't be able to tell if raw meat contains parasites just by looking at it, but your local vet will be able to give you advice on how to make sure raw meat is safe for your dog.

Other aspects of local management

Waste bins could also be part of the local authority's input into helping manage local 'hot spots'. Communications aimed at dog walkers should remind them that any type of bin can be used to dispose of dog waste - and bins should be provided as appropriate. In working with land managers, access authorities are encouraged to consider using innovative communication techniques to raise the profile of the issue of dog waste. Short-term initiatives can be effective, especially where the dog walkers use the area on a regular basis. The '**Green Dog Walkers scheme**', initially trialled by Falkirk Council, may be something to explore. There may also be opportunities to consider, with relevant land managers, access management over a wider area and to provide additional routes for local people so that dog walkers can choose routes that do not take them through grazing land.

If site-based issues persist, access authorities could consider using other/stronger forms of management, which could include creating a byelaw relating to dog waste removal in specific places. Where there are particularly acute problems, this could be used as a management option if other management methods prove to be unsuccessful, but enforcement could be problematic.

For Scottish Outdoor Access Code resources, see: <http://www.outdooraccess-scotland.com/help-and-information/marketing-and-resources/dog-campaign-resources/>

If you have examples of good practice that have been used by the access authority to help encourage dog walkers to pick up after their dogs and reduce the risk of spreading disease to livestock – please send them to: Suzanne Downey: suzanne.downey@snh.gov.uk



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BEFORE YOU GO**

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Annex A - Stirling Council case study

On-farm dog-fouling signage, Stirling

A farmer contacted Stirling Council access staff at the end of 2009 as he was concerned about the number of dog walkers, especially commercial dog walkers, going through his cattle field. This became a more significant problem when he had tests run on an aborted calf foetus and it was found to have suffered from neosporosis.

The farmer was invited along to Stirling Local Access Forum so he could have the opportunity to present the problems he was experiencing with dog walkers and the new finding of abortions caused by neosporosis to the Forum and ask for their advice. Most members were unaware of the disease linking dogs and abortion in cows. It was agreed to trial posters at the entrance to the fields concerned.

One of the SNH dogs' campaign posters has space for individual messages to be included. This poster was therefore used as the basis for the notice, thus ensuring some consistency with the national dogs' campaign while still allowing the notice to be specific to the issue and location. A number of versions of the issue specific wording were considered before agreeing on the wording below, which was felt to be informative and noticeable without being overly forceful or hard-hitting.

The Access Officer who put up the posters reported an immediate effect with a noticeable increase in the number of dog walkers bringing dog bags with them.



**YOUR DOG
DOESN'T
KNOW ANY
BETTER.**

**MAKE SURE
YOU DO.**

NEWSFLASH

FACT: Dog waste can carry neosporosis!

RESULT: 6 cows aborted on this farm this year!

PLANTED FIELDS. Avoid taking your dog into fruit and vegetable fields unless there is a clear path.

LIVESTOCK. Keep your dog on a short lead around livestock and during bird breeding season (usually April-July). Never let it worry or attack livestock or disturb nesting birds.

CATTLE. Keep yourself and your dog at a safe distance as cattle can act aggressively.

DOG WASTE. Pick up and dispose of carefully.



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