



# Enteric listeriosis of sheep and cattle

**Rob Fairley**, of Gribbles Veterinary, Christchurch, answers the critical questions about a disease most commonly found in New Zealand's South Island.

**ENTERIC LISTERIOSIS IS** an interesting disease that is mainly seen in New Zealand, largely in the South Island, and is most common in sheep. This article provides a brief overview of the disease.

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**What is the source of *Listeria monocytogenes*, the agent of the disease?**

*Listeria monocytogenes* is widespread in the environment, particularly in soil.

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**How and when does the disease occur?**

The disease can occur in animals on pasture alone, but it mainly occurs in animals fed poor-quality silage or baleage – hence, it usually occurs at times when farmers feed these supplementary feeds. *L. monocytogenes* is commonly present in silage and baleage.

Small numbers of *Listeria* are ingested by animals as they graze, and the bacteria pass through the alimentary system without effect. However, large numbers may cause enteric disease. In silage that has been improperly prepared, *Listeria* can multiply to large numbers, so an infective dose is more easily ingested. The pH of the silage is the important factor. If properly ensiled and the pH is low, *Listeria* may still be present in silage or baleage but will not multiply.

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**What are the clinical signs of enteric listeriosis?**

In sheep, the disease causes acute-onset diarrhoea and resembles salmonellosis clinically.

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**How is the disease diagnosed?**

The diagnosis is made histologically, rather than microbiologically. Lesions can be present in the abomasum, small intestine, cecum, colon, liver and mesenteric lymph nodes. The gut lesions are usually distinctive, and there is involvement of the muscularis mucosa in most cases. This targeting of the muscularis mucosa is unique. Culturing of *L. monocytogenes* from the faeces is not considered diagnostic. Since animals take in *Listeria* orally from the environment, it can be found in the faeces of clinically healthy animals. Experimentally, it can even be found in the mesenteric lymph nodes and liver after non-fatal oral challenge. The recovery of *L. monocytogenes* from the mesenteric lymph node can be considered supportive but not diagnostic.

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**Does enteric listeriosis occur at the same time as encephalitic listeriosis?**

No, but cases of encephalitic listeriosis may occur a few weeks after an outbreak of enteric listeriosis. The incubation period for enteric listeriosis is a few days. However, the incubation period for encephalitic listeriosis is around three

weeks minimum. This is because the latter, after local inoculation in the mouth, is an ascending infection up the cranial nerves to the brainstem. This movement of bacteria along the cranial nerves takes quite some time, whereas a large dose of ingested *Listeria* can infect the gastrointestinal tract within a few hours. Encephalitic listeriosis also commonly occurs in sheep on pasture alone.

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**If enteric listeriosis is due to poor-quality silage or baleage, do I advise the farmer to discard all the silage or baleage?**

This is not always necessary. In one case, for example, subsequent investigation found the problem traced back to a small portion of baleage that was spoiled. When the remainder was examined it looked to be of good quality on visual inspection, and when tested was found to have a suitably low pH. After discarding the spoiled feed, the farmer was able to feed the remainder of the baleage without a problem.

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**Can you successfully treat cases of enteric listeriosis?**

It depends on how badly affected the animals are, but some animals caught early enough can be saved with antibiotic treatment. <sup>vs</sup>

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**IN SILAGE THAT HAS BEEN IMPROPERLY PREPARED, LISTERIA CAN MULTIPLY TO LARGE NUMBERS, SO AN INFECTIVE DOSE IS MORE EASILY INGESTED.**

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- Bladder infections

