Working towards net zero carbon emissions

Managing parasites in beef cattle: Roundworm

Practical Guide

Roundworm is the common name given to a diverse group of nematodes that include Ostertagia and Cooperia. Ostertagia ostertagia (the brown stomach worm) and Cooperia oncophora (the intestinal worm) are the most widespread species in the UK. Both will cause parasitic gastroenteritis (PGE) in cattle.

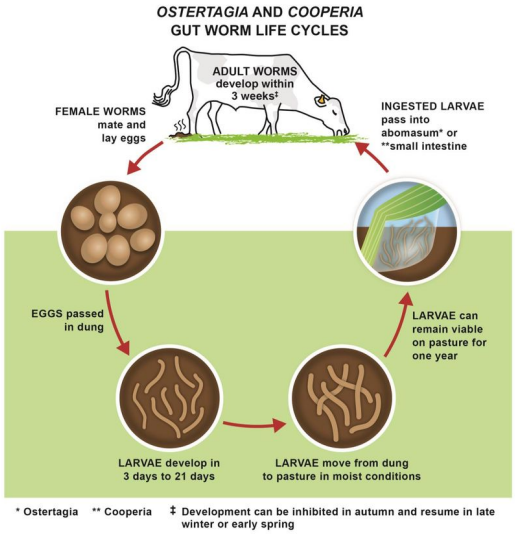
PGE is a significant cost to the UK cattle sector. This is mainly as a result of reduced growth rates in the affected cattle. Roundworms usually affect first and second year grazing cattle but can cause disease in any age if immunity has not developed.

This Practical Guide highlights the need to manage internal parasites such as roundworm in cattle

Lifecycle

The lifecycle of roundworms is direct in that no intermediate host is needed for transmission.

Eggs are passed out in the dung of the infected animal. The first stage larvae then hatch from the eggs given the correct environmental conditions. The rate of development of the larvae to the L3 stage depends on the amount of moisture in the dung and the temperature of the dung. In temperatures over 15°C, this can take as little as seven days or if cooler, up to six weeks. In the L3 stage, the larvae migrate from the dung onto the pasture. The distance in which they travel is aided by the amount of moisture present on the pasture. Therefore in periods of rainfall, the L3 larvae can increase the distance the travel. The L3 larvae have a protective outer skin as a result of previous development and can survive for many months because of this under the right conditions. Cattle ingest these infective L3 larvae which pass into the stomach or small intestine depending on the species of roundworm to develop into adult worms. The female worms mate and subsequently lay eggs which can then pass out in the dung and start the cycle again if allowed to.



Roundworm lifecycle Image credit: COWS Control of roundworms in cattle

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See also:

Practical Guide: 'How do we reduce emissions from beef?

Practical Guide: Maximising growth rates

www.cattleparasites.org.uk

Faecal egg counts for cattle

Scottish Government
Riaghaltas na h-Alba
gov.scot

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Clinical signs

In beef cattle, clinical signs of infection are quite similar to those of other parasitic infections . They include:

- Weight loss
- Loss of body condition
- Loss of appetite
- Diarrhoea

Treatment

Treatment of roundworms is through the use of anthelmintics.

There are 3 ways in which they can be used:

- Early season strategic treatment - treat specific cattle (e.g. calves) early in the grazing season if they are grazing fields that have been grazed by cattle in the previous season. Such fields will likely have larvae that have survived over the winter. Early season treatment will kill the larvae before they reach maturity, limiting the risk of further contamination of the field.
- Targeted use - this is based on the results of FEC or weight gain information. Treatment is targeted towards the highly infected cattle.
- Therapeutic treatment - this method is used when no measures are taken to limit contamination on pasture and the cattle are showing clinical signs of infection.

The targeted use of anthelmintics should be encouraged over the other uses.

More information is available on the COWS website.

Diagnosis

Monitoring infection especially in first and second season grazing calves can be done using faecal egg counts (FEC) and/or regular weighing of youngstock. Those cattle failing to reach growth targets or that have significant egg counts (>200 epg (eggs per gram)) should receive treatment. This can result in good worm control, whilst reducing the number of anthelmintic treatments.

An ideal time to monitor infection using FEC would be two months after turnout to pasture.

The results of FEC should be interpreted alongside other additional information.

For more information about FEC see the 'Faecal egg counts for cattle' video, produced in association with COWS, QMS and FAS.

Prevention & Control

Some practical recommendations that can be made to prevent and control roundworms are:

- Grazing knowledge - knowing the grazing history of the fields and the type of stock that grazed them will help identify them as high, moderate or low larvae levels at any specific time.
- Optimise stocking density - ensure that fields are not overstocked as there is a relationship between higher stocking rates and higher pasture contamination.
- Mixed grazing - consider grazing sheep along with the cattle. Sheep can graze pastures infected with cattle nematode larvae and those larvae will not develop in the sheep. However, mixed grazing may be inappropriate if liver fluke are present, as these can infect both sheep and cattle.
- Pasture composition - although there is limited evidence with cattle, some plant species are considered to have anthelmintic properties
- Housing treatment - discuss with your vet, RAMA, SQP if treatment at housing is necessary

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