

# Managing Parasites in Beef Cattle

## GUTWORM

 **Boehringer  
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Global Leaders in Parasiticides



MANAGING GUTWORM

## What's the problem?

'Gutworm' refers to roundworm species that can cause disease in cattle by infesting the abomasum and small intestine. Youngstock are particularly at risk, but develop immunity following exposure.

## Why does it matter?

Slower growth rates increase production costs. Infected animals take longer to reach slaughter weight, consume more feed, and produce lower grade carcasses<sup>2</sup>.

The Moredun Research Institute estimates that untreated calves with low levels of gutworm infection lose 30-60 kg of growth in the first year of life, with a financial cost of some £40/head<sup>3</sup>.

Gutworms can also have an effect on fertility. Replacement heifers can take longer to reach first service weight and find it harder to conceive<sup>4</sup>.

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## Gutworm species

A number of worm species affect cattle, and mixed infections are common in youngstock, but the two main species most commonly associated with disease and impaired productivity are:

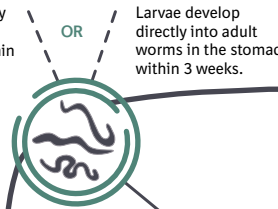
*Ostertagia ostertagi*, which lives in the abomasum. The most common form of disease caused by *Ostertagia* is known as type 1 ostertagiosis or parasitic gastroenteritis (PGE). These worms decrease appetite, impair nutrient breakdown and absorption, impacting on growth and weight gain.

Effects are most commonly seen in young grazing animals. Typical symptoms include scouring and a loss of condition, with growth rate reductions of up to 30% reported<sup>1</sup>.

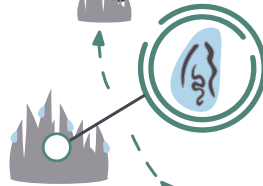
Type 2 ostertagiosis is a less common form of disease in youngstock. It is caused by the maturation of encysted larvae eaten the previous autumn. The mass emergence of adult worms during the late winter or spring causes extensive damage to the abomasum, leading to severe scouring, rapid weight loss, anaemia and even death.

*Cooperia oncophora* which inhabits the small intestine. Signs of infection may be less obvious. Adult worms damage the intestinal wall, reducing nutrient absorption and causing scouring, loss of condition and reduced feed intake.

Development of larvae may become arrested over the winter period. Larvae remain encysted in the stomach wall, emerging in spring.



Infective larvae ingested with grass.



Infective larvae in water droplets on grass.

Infective stage larvae migrate on to pasture.

## How to control gutworm

A parasite control strategy is an integral part of a herd health plan

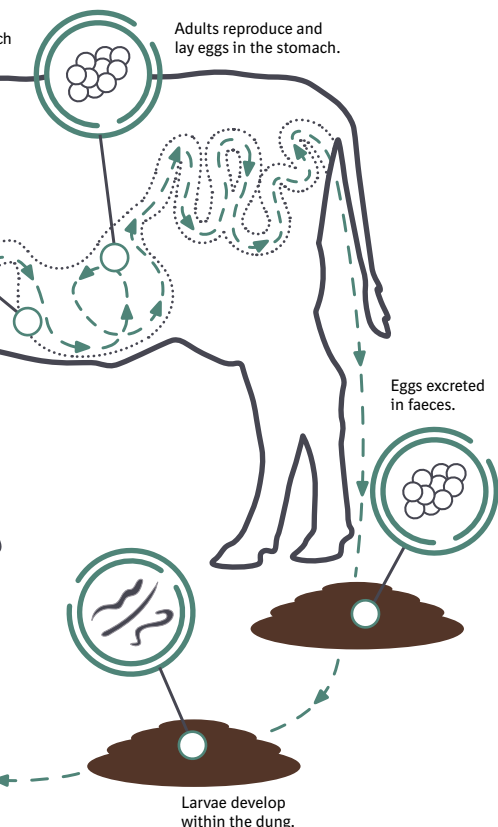
Control strategies should utilise both grazing management to reduce the pasture challenge and anthelmintic treatments when appropriate, to remove worm burdens. A low level of parasite exposure is required to promote the development of immunity, but excessive challenge will affect productivity and may cause disease.

Pasture grazed by cattle during the previous season will be contaminated with overwintered

larvae at turnout. Warmer temperatures from late spring into summer increase the speed at which hatched L1 larvae develop to the infective L3 stage. At the same time, young infected cattle shed high numbers of eggs onto the pasture, amplifying the challenge.

If worms are not controlled, peak pasture contamination will occur in late July and August and brings with it a high risk of outbreaks of disease in cattle in their first grazing season.

After this peak, pasture contamination will steadily decline, but under favourable weather



## Lifecycle of the gutworm

Both *Ostertagia* and *Cooperia* have a direct life cycle, with no intermediate host. Adult worms living in the gut lay eggs which are passed out in the dung. Eggs hatch within the dungpat and develop into infective larvae. Larvae can exist for several months on pasture, ready to infect grazing animals. Once eaten, infective *Cooperia* larvae develop into adults within three weeks. *Ostertagia* larvae complete their development to adults within the wall of the abomasum, and can remain in this encysted state for prolonged periods of time. This means that whilst they typically complete their development from infective larvae to adult worms in three weeks, it can take longer.

Youngstock in their first grazing season are most susceptible to infection, either developing clinical signs or suffering reduced growth rates. Effective immunity can take up to two grazing seasons to develop. This immunity protects against clinical disease, but animals will continue to carry small numbers of adult worms, and shed low levels of eggs onto pasture, which will contribute to the challenge faced by co-grazing youngstock.

conditions, a challenge can persist until animals are housed for winter.

### Pasture management

Spring-born suckled calves are exposed to lower levels of gutworm challenge in their first grazing season as the bulk of their nutrition is derived from their dams' milk until later in the grazing season.

Autumn-born calves, once weaned and turned out the following spring, are at risk of PGE in

their first grazing season. Turning calves onto 'rested' pasture (i.e. not grazed by cattle for at least one year) during their first year at grass can help to reduce the risk.

### Bought-in stock

Purchased cattle with an unknown treatment history could be carrying significant worm and fluke burdens, and may introduce resistant parasites and other diseases. A quarantine protocol, developed with a vet, should be consistently implemented.



## Treatment / Anthelmintics

Wormers can be used to remove gutworm infections, which will also help to reduce pasture contamination. To ensure the most effective approach is taken, it is essential to understand both the parasite life cycle and the properties of the anthelmintic selected for treatment.

In recent years targeted approaches to treatment, based on farm level risk factors have been increasingly adopted. These approaches aim to reduce unnecessary treatments whilst still achieving effective parasite control.

Strategic early season worm control using timed treatments of cattle during their first grazing season can provide an effective approach to controlling gutworm burden whilst still allowing natural immunity to build. In order to achieve season long control using this method, cattle must remain set-stocked, or only be moved to 'safe' pasture such as aftermath.

Housing is also a key time for treatment: removing the worm burden, including encysted larvae, will help to maximise productivity and growth over the winter period and reduce the risk of disease due to type 2 ostertagiosis.

The choice of anthelmintic product will depend on farm history, animal and pasture

management strategies and whether there is a risk from other parasites such as liver fluke.

As with the use of all medicines, the most appropriate anthelmintic should be determined following discussion with a vet or animal health advisor.

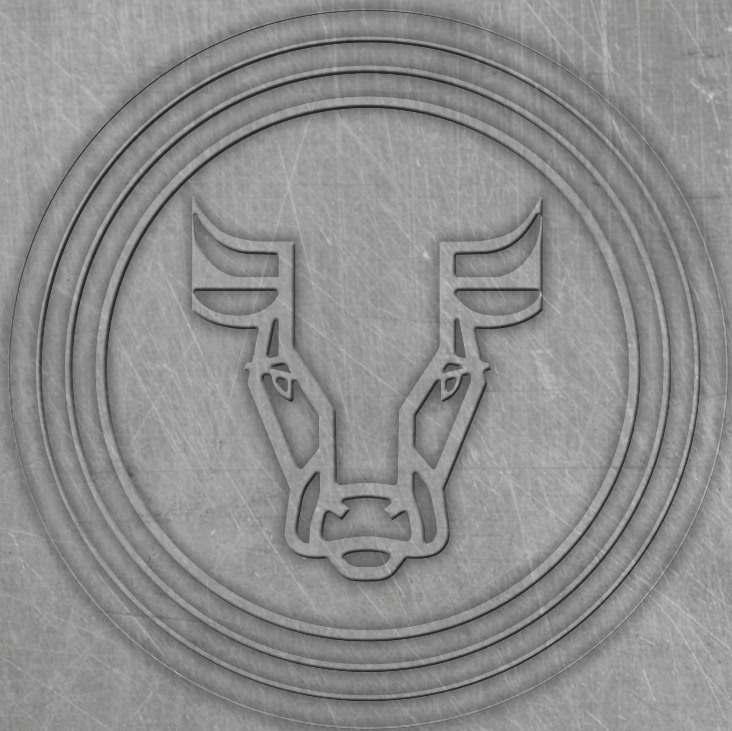


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#### References

1. Control of roundworms in cattle (January 2020)
2. Charlier, J. et al (2009) Measurement of antibodies to gastrointestinal nematodes and liver fluke in meat juice of beef cattle and associations with carcass parameters. *Veterinary Parasitology*, 166 (2009) 235-240.
3. Moredun Foundation (2010) Parasitic Control in Cattle.
4. McPherson et al. (1999) Proceedings of the American Association of Veterinary Parasitologists, 44th Annual Meeting, New Orleans, Louisiana, USA, Abstr. 28.

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IVOMEC® Classic Injection for Cattle and Sheep and IVOMEC® Classic Pour-On for Cattle contain Ivermectin. IVOMEC® Super Injection for Cattle contains Ivermectin and closantel. POM-VPS. Advice should be sought from the prescriber. Further information available in the SPCs or from Boehringer Ingelheim Animal Health UK Ltd., RG12 0YS, UK. Tel: 01344 746937. Email: [veterenquiries@boehringer-ingelheim.com](mailto:veterenquiries@boehringer-ingelheim.com). IVOMEC® and the Steehead® logo are registered trademarks of Boehringer Ingelheim Animal Health France SCS, used under licence. ©2022 Boehringer Ingelheim Animal Health UK Ltd. All rights reserved. Date of preparation: Jul 2022. UT-MSP-0059-2022, Use Medicines Responsibly.

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