



What worms?
What wormer resistance risk?

An invitation to submit calf samples for free of charge faecal egg counting

Infection with gastrointestinal nematodes is a common and significant cause of disease and production loss in young grazing cattle. *Ostertagia ostertagi* and *Cooperia oncophora* are the most important species in England and Wales, with mixed infections common. *Haemonchus* species and *Nematodirus* species are less frequently detected, although this may change in relation to climate and management factors.

Resistance to anthelmintic products is an emerging issue for the UK cattle industry:

- Widespread use of macrocyclic lactones (MLs) has led to resistance in *Cooperia oncophora* in the UK and ongoing routine use gives a high risk of ML resistance developing in *Ostertagia ostertagi*
- Resistance to benzimidazoles (BZs) has also been confirmed in *Ostertagia ostertagi* in one UK herd. The genetic basis of BZ resistance is well-established, meaning that the frequency of resistant genes can be quantified in nematode populations
- If, or when, ML resistance becomes a greater issue for UK cattle farmers, there may be increased interest in use of BZs - it is therefore important to understand the risk of more widespread BZ resistance developing.

During the 2023 grazing season, APHA and Moredun Research Institute are collaborating to investigate both the species composition of gastrointestinal nematode infections in cattle, and the frequency of genes that confer BZ resistance in these populations. This information will be useful to improve understanding of nematode species composition in cattle, to raise awareness of the risk of anthelmintic resistance amongst cattle farmers and their advisers, and to inform national best practice guidelines.

Practising vets in England and Wales are invited to submit faeces samples from 10 first grazing season cattle per herd that wishes to participate for:

- **Free of charge composite faecal egg count at APHA Carmarthen VIC with the results reported as normal**
- **Anonymised deep-amplicon sequencing at Moredun for speciation, and to detect genetic markers of BZ resistance; anonymised, aggregated results will be shared at the end of the project.**

Sampling requirements:

- first grazing season calves
- at grass for at least 6 weeks
- untreated, or not treated for at least 5 weeks
- 10 freshly-voided (floor) faeces samples
- one full universal pot (at least 10g) per calf

Submission process:

Please send samples to **APHA Carmarthen VIC** using our [cattle submission form](#), or via [ADTS](#), which will supply a postage-paid address label. Samples may be submitted to the study **until 31st October 2023**.

To maximise the benefits of this study, please:

- fully complete the submission form and, for free testing, mark the submission form “What worms? project”
- For **ADTS submissions**:
 - select “sick animal submission” (even if animals appear healthy)
 - on the clinical signs page tick “other” if no clinical signs to report
 - type “What worms? project” in the free text box
 - select TC0668 - a charge will show on ADTS, but this will be removed by APHA on receipt of the samples so that you will not be charged.
- to anonymously participate in the deep-amplicon sequencing element ensure the opt out box on the back of the submission form is **not** ticked
- note the date of the last worming treatment (if any) and product used
- note if calves are extensively managed (e.g. uplands, common land)
- ensure that samples are packaged according to [regulations](#) for “exempt patient samples” (unless infectious agents are suspected).

Submission address:

APHA Carmarthen Veterinary Investigation Centre
Job’s Well Road
Carmarthen
SA31 3EZ

Data protection:

We will treat all data collected during this study with the strictest confidence. Personal data including farmer, vet or animal identifiers will be used in line with routine diagnostic submissions, including reporting of FEC results. Any data used by the research team will be anonymised. Any publication of the study findings will present anonymised results; individual farms will not be identifiable. Your rights covering these matters are also covered by the UK General Data Protection Regulation (GDPR) as implemented in the [Data Protection Act 2018](#). For information on how APHA handles personal data please read the [APHA privacy notice](#).

Any questions?

For further questions relating to this study, please contact:

- Natalie Jewell at APHA Carmarthen VIC on natalie.jewell@apha.gov.uk or
- Vanessa Swinson on vanessa.swinson@apha.gov.uk