



Surveillance of cattle faecal samples from England & Wales for presence of *Ostertagia ostertagi* and markers for resistance to benzimidazoles

Recent investigations by the Animal and Plant Health Agency (APHA) and the Moredun Research Institute (MRI) have suggested that bovine parasitic gastroenteritis (PGE) due to *Ostertagia ostertagi* (Oo) may be underdiagnosed. In addition, they have identified resistance to the benzimidazole class of anthelmintics in this roundworm species. This was the first detection of this type in the UK, and this resistance is also likely to be underdiagnosed in this economically important roundworm.

For the 2022 grazing season, APHA and MRI are running a project to investigate resistance, or reduced efficacy, to benzimidazoles (BZ) in *Ostertagia ostertagi* (Oo) in cattle in England and Wales.

The project's objectives include: the molecular examination of roundworm eggs from cattle faecal samples collected throughout England & Wales, investigation of the mutations (single nucleotide polymorphisms (SNPs)) associated with BZ resistance, and investigation of how these are potentially associated with reduced anthelmintic efficacy.

It is hoped that a proportion of the sampled herds will have follow-up investigations, involving comparisons of SNP/genomic results with on-farm faecal egg count reduction testing (FECRT).

The potential benefits for participating cattle producers, and the cattle industry as a whole, across England and Wales, include:

- Increased knowledge of general PGE in first-season grazer cattle (*plus selected 2nd season)
- Increased knowledge of Oo prevalence in first-season grazer cattle (*)
- Increased knowledge of the likely prevalence of reduced efficacy to BZs in Oo
- Increased knowledge of the correlation between SNPs and actual anthelmintic efficacy
- Guidance to farmers on whether BZs were likely to be a good alternative to macrocyclic lactones (MLs) (and possibly levamisole as well)

In addition, it is hoped that this project will enable increased discussion on endoparasite control between vets and their clients and, help inform both treatment and management practices.

Project sampling, submission, and testing details:

- Samples from first season grazers (+/- *second season that did not graze much the previous year), which have been out at pasture for at least four-to-six weeks
- The sampled animals should be either untreated, or have not been treated for at least two weeks
- Freshly voided faeces samples (collected from yard or pasture) from 5 to 10 animals (10 is preferred but at least 5 animals)
- The 5 to 10 samples to be sent to APHA Carmarthen (address below) with a completed APHA bovine submission form (or submission details entered on ADTS portal). Please note on the form that they are for the 'Ostertagia project'.



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- APHA Carmarthen will pool the samples, **run a free of charge FEC**, and report the results in the usual way
- The pooled sample will then be forwarded to MRI for genomic testing, with the results being reported back once the genomic testing is completed (please note that these will be done in batches so they may be reported later in the year)

Link for bovine submission form (**please note on the form that the samples are for the project**):

[APHA Vet Gateway: Submission forms \(defra.gov.uk\)](#)

Address for samples:

APHA Carmarthen

APHA Veterinary Investigation Centre
Job's Well Road
Johnstown
Carmarthen
Carmarthenshire
SA31 3EZ

Contact details:

Email: Carmarthen@apha.gov.uk

Telephone: 03000 600016

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