

Fast Worm ID - Gastrointestinal nematode (GIN) PCR

- quick reference guide

Faecal egg counts tell us how many eggs, but not which worms are driving disease, production loss, or poor drench performance. Larval culture gives species information, but it's slow and has practical limitations, especially in cattle and low-count situations.

► **GIN PCR fills the gap: fast, species-specific insight that supports better decisions**

What is the Fast Worm ID - GIN PCR?

The GIN PCR test is a multiplex, semi-quantitative PCR that:

- Identifies key gastrointestinal nematode species
- Reports relative burden (Not detected → Very high)

It is a practical and faster alternative to larval cultures and FECs in appropriate instances (please see limitations section).

What are the benefits of this test?

- Faster turnaround (approximately 3 days vs 10 days for larval culture)
- Species insight - even with low egg counts
- Supports targeted drenching
- Reduces guesswork in clinical cases
- Works when larval culture is too slow or unreliable.

It is a fast, practical species-ID tool that helps make better parasite decisions when timing and specificity matter.

What species is it suitable for?

The GIN PCR is validated for use in sheep and cattle.

What does the result look like?

For each species, results are reported as:

- Not Detected
- Very Low
- Low
- Medium
- High
- Very High

Think trend and significance, not absolute numbers.

Species Detected

Sheep	Cattle
<i>Haemonchus contortus</i>	<i>Ostertagia ostertagi</i>
<i>Teladorsagia circumcincta</i>	<i>Trichostrongylus axei</i>
<i>Trichostrongylus axei</i>	<i>Trichostrongylus vitrinus</i> / <i>colubriformis</i> *
<i>Trichostrongylus colubriformis</i> / <i>vitrinus</i> *	<i>Trichostrongylus vitrinus</i>
<i>Trichostrongylus vitrinus</i>	<i>Cooperia</i> spp.
<i>Nematodirus spathiger</i>	
<i>Cooperia</i> spp.	

*This test cannot fully distinguish between *Trichostrongylus vitrinus* and *Trichostrongylus colubriformis*, so any sample containing *T. colubriformis* will be reported as *T. colubriformis*/*T. vitrinus*, while a sample containing only *T. vitrinus* will be reported as *T. vitrinus*.

When should I use it?

Sheep	Cattle
Pre-drench decision making	Pre-drench assessment (<i>Ostertagia</i> vs <i>Cooperia</i>)
Post-drench checks (stand-alone)*	Post-drench checks
Early detection of <i>Haemonchus</i>	Clinical parasitism cases
Clinical cases where species matters	Situations where larval culture is impractical

*Not suitable for FECRT reduction % calculations as result is not numerical

How Fast Worm ID - GIN PCR differs from larval culture (and its limitations)

GIN PCR and larval culture measure different things, so differences between results are expected.

- Larval culture identifies species based on larvae that successfully hatch and grow. Only a proportion of eggs typically hatch, and results depend on morphology and time in culture.
- GIN PCR identifies species by detecting worm DNA directly. It does not rely on egg hatching and detects DNA from all eggs present, using a small faecal volume.

Because of this:

- Results may not match exactly, particularly at low egg counts
 - GIN PCR reports relative burden categories, not eggs per gram
 - GIN PCR is not suitable for FECRT reduction percentage calculations, where larval culture remains the reference method
- ▶▶ **In practice: FEC/larval culture are best for formal reduction testing, while GIN PCR is best for fast species insight, clinical decision-making, and situations where timing or low counts limit culture usefulness.**