FECRTs: All eggs are equal, but some are more equal than others

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Parasitic Gastroenteritis (PGE) in Sheep

- PGE is a complex production limiting disease

- It can cost farmers £4.40 per lamb, but there are potential savings of £3.50 per lamb if controlled[1]

- Diagnosis is by clinical exam, flock history and the use of faecal egg counts or post-mortems

- Anthelmintics, including BZ, LEV and IVM are used to control the disease.

A Standard FECRT[2]

Three farms were used to investigate BZ efficacy

- Farm 1 showed a 66.8 % reduction : resistance

- Farm 2 showed an 84 % reduction : resistance

- Farm 3 showed a 0 to 1.9 % reduction : resistance
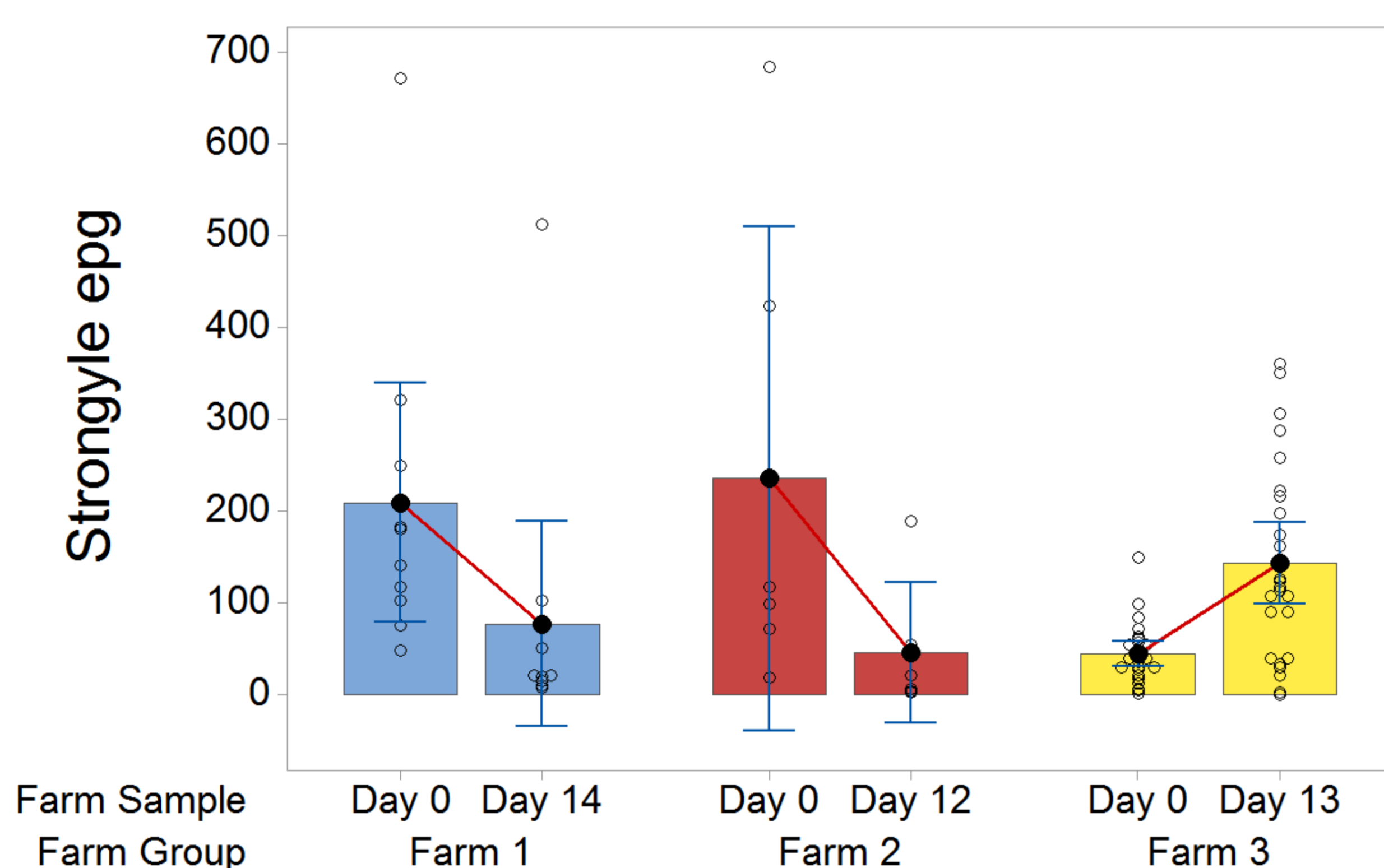
All different. All results suggest resistance.

Fig 1: Strongyle FECs from three BZ FECRTs

Speciating strongyles adds insight

Strongyles can be speciated by PCR using eggs or larvae This can be completed within a few days of sample collection.
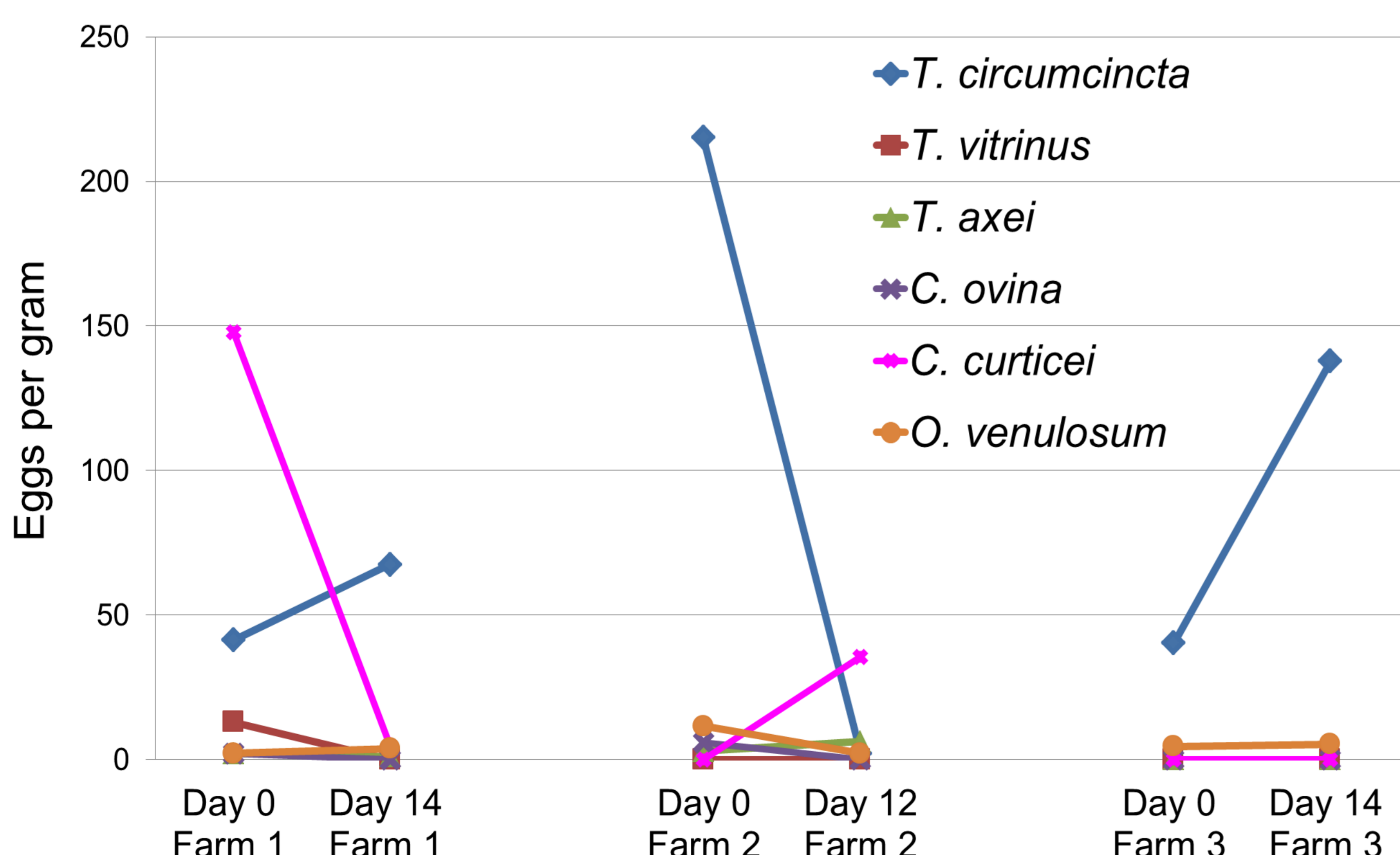

Fig 2: Strongyle species FECs after PCR speciating individuals

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A Faecal Egg Count Reduction Test:

1. Obtain faecal samples from a group of 10 lambs for strongyle FECs

2. Weigh and accurately dose the lambs with the anthelmintic of choice

3. Return 7 to 14 days later to re-sample the same lambs

4. Calculate the percentage reduction in strongyle FEC
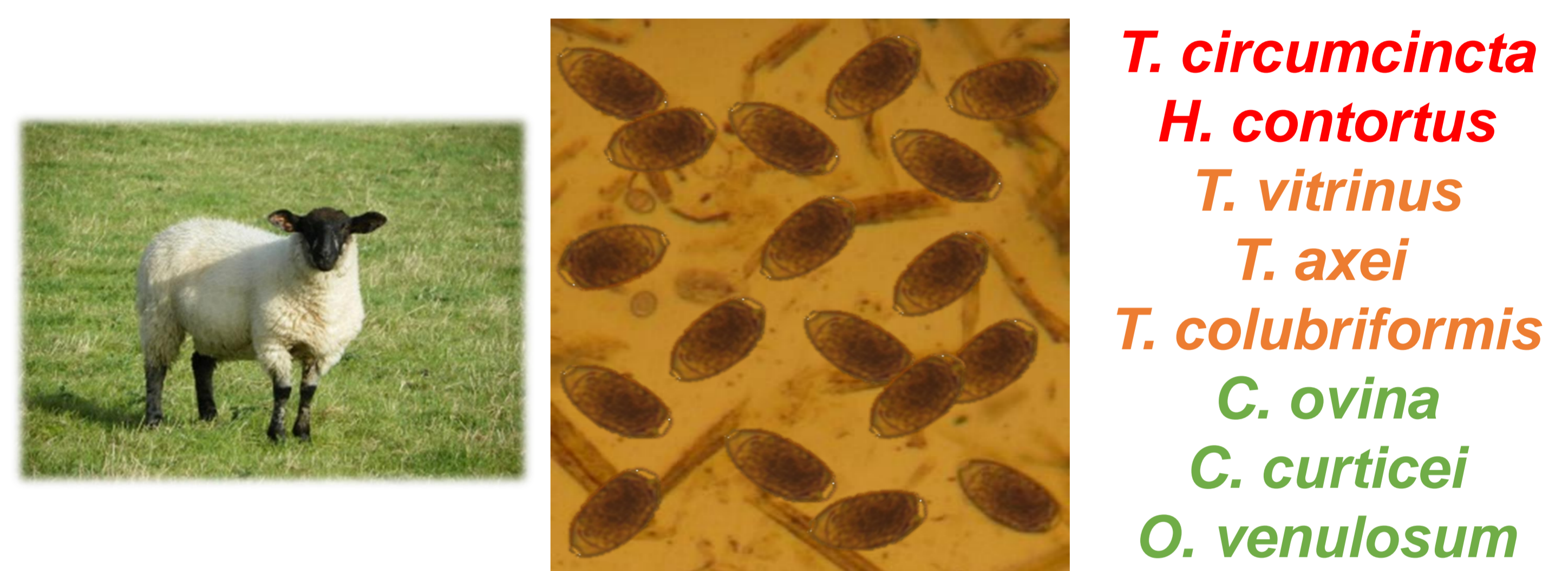
If reduction is < 95 % resistance is diagnosed

**T. circumcincta
H. contortus
T. vitrinus
T. axei
T. colubriformis
C. ovina
C. curticei
O. venulosum**

Fig 3. Strongyle eggs represent many different species

Why does this help?

In the UK the primary pathogen of PGE is *Teladorsagia circumcincta*, the brown stomach worm

Yet many other strongyle parasites are able to contribute to disease, and may comprise a significant proportion of the FEC. Nonetheless, some of these, like *C. ovina*, are only mild pathogens in sheep

Determining which species are affected by anthelmintics gives insight into how best to control PGE on a holding.

What can we say about these farms?

- Farm 1 had moderate levels of resistance using the FECs alone. But with species data included we see that there is a big reduction in *C. curticei* (a mild pathogen) but an apparent increase in *T. circumcincta*. BZ anthelmintics are not likely to be of use on this farm for PGE
- Farm 2 had a mild to moderate resistance level based on FEC. However species identity shows a 99 % reduction in *T. circumcincta*, with a slight increase in *C. curticei*. Therefore it is likely that using BZ anthelmintics on this farm will lead to clinical improvement in disease
- Farm 3 has predominantly *T. circumcincta*, the BZ anthelmintic is of no use on this farm to treat PGE

- These samples are taken at different times of the year. It is important to determine if treatment is needed and when is best to treat. Targeted treatment, for example based on weight gain, can be useful in this regard.

References:
[1] (ADAS UK Ltd, 2013), [2] (Wang et al., 2017 VP, 235, 20-28)