

Coccidiosis – What’s happening on Irish dairy farms?

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Summary

- Coccidiosis is a parasitic disease that causes scour and deaths in calves.
- A new research project is looking at farmers’ current knowledge of the disease and trying to differentiate pathogenic from non-pathogenic cocci strains.
- The survey showed that the majority of farmers self-diagnose coccidiosis (63%) and believe that birds are the primary source of infection at grass (60%).
- For the first time in Ireland, PCR testing identified pathogenic coccidia.

Introduction

Coccidiosis is a disease caused by harmful strains of a parasite (coccidia) that damages the intestine lining (Figure 1), resulting in clinical signs of diarrhoea, that is frequently bloody. Currently, we have no data on how dairy farmers diagnose, prevent or treat coccidiosis in Ireland. In addition, little is known about what species of cocci occur in Ireland. Current routine lab techniques cannot differentiate between the disease causing and harmless strains of coccidia. Molecular techniques (Polymerase chain reaction, PCR) may be able to detect pathogenic strains and so improve routine diagnostics.

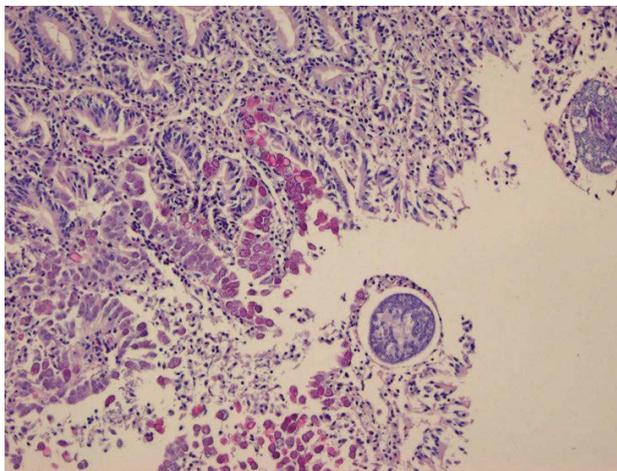


Figure 1. Numerous coccidia invading and damaging the lining of the intestine

Hence, the aims of this new research project were 1) survey farmers to ascertain their knowledge of cocci and their treatment, prevention and control practices and 2) develop a PCR method to identify pathogenic strains of coccidia.

Results

Farmer survey

Farmers were surveyed on SurveyMonkey using multiple sources: Teagasc advisory clients, social media (Agri-Land) and the agri-media (*Todays Farm*, *Irish Farmers Journal*, *Farming Independent*).

Preliminary results from 299 farmers are reported here. The majority (63%) of farmers diagnosed cocci in their calves themselves, not through vet diagnosis or lab testing. The majority of farmers reported having cocci in their calves either within the last year (42% of farmers) or within the previous three years (31%). The most common age groups calves were affected with cocci were at 3-5 weeks old (30% of farmers) and 3-5 months old (29%). Farmers believed that when calves are indoors the most common sources of cocci are birds (46% of farmers), the calf environment (44%) and feed or water troughs (35%). When calves are at grass, farmers believed that the most common sources of cocci are birds (60% of farmers), feed or water troughs (49%) and other calves in the group (19%). Of farmers who used preventive medication for cocci, the majority administered the products when calves were 3-5 weeks old (45% of farmers) or at turnout to pasture (26%). For farmers who treated calves for cocci, the majority did so when calves were 3-5 months old (30% of farmers) or 3-5 weeks of age (25%). The most commonly used cocci medications were Vecoxan (33% of farmers), Bovicox (28%) and Sulpha No. 2 powders (20%).

Pathogenic cocci strains

Calf faecal samples submitted to DAFM Regional Veterinary Laboratories, which had coccidia detected via the McMaster technique, underwent molecular analyses. Coccidia-specific primers were developed and tested on these samples. Pathogenic strains of coccidia (*Eimeria bovis*, *E. zuernii* and *E. alabamensis*) were identified by PCR in the calf faecal samples.

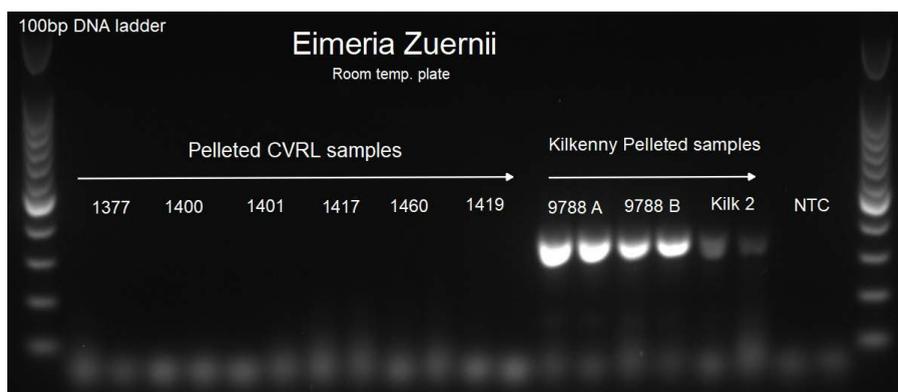


Figure 2. Detection of harmful coccidia by PCR in calf faecal samples

Conclusions

Results of the survey show that farmers have a good awareness and knowledge of cocci management and medication and may benefit from further education on coccidia transmission. PCR testing can successfully be used to identify pathogenic coccidia in a research study; the challenge will be to do so in a routine lab diagnostic environment.

Acknowledgements

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