

Dynamics of parasite infections in UK sheep: A Multi-Farm Survey

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Sheep are exposed to multiple economically significant parasites, particularly helminths and protozoa, throughout the grazing and production season that impacts animal productivity and welfare. However, current data on parasite dynamics and the impact of co-infections in UK sheep is limited.

To address this, we distributed a questionnaire to sheep farmers around the UK to gather information on farming practices, parasite history, and control methods. From the 186 responses from farmers across the UK (flock sizes ranging from 10 to 8,000 sheep), we recruited a cohort of 23 farms (England: 19, Scotland: 3, Northern Ireland: 1) for a faecal parasite identification study. Faecal analysis was carried out over three timepoints (June, August, October) during the 2025 grazing season to identify nematodes, trematodes, *Cryptosporidium*, and *Eimeria*.

Results from the questionnaire determined farmers most frequently identified nematodes causing parasitic gastroenteritis (PGE) as the top priority for treatment and frequently reported the presence of liver fluke and coccidia on their farms. Faecal analysis from 68 samples collected over the three sampling timepoints showed that PGE nematodes and *Eimeria* were present in 87% and 80% of farm samples, respectively. Trematodes (15%) and *Cryptosporidium* (16%) were identified on fewer farms. Multiple parasite species were identified in the faecal samples, with PGE nematodes and *Eimeria* both being present on 70% of farms. Similarly, on nine farms faecal samples had PGE nematodes, *Eimeria*, and *Cryptosporidium* present.

These results highlight that sheep have the potential to be infected with multiple parasites over the grazing seasons. Elucidating the complexities of concurrent parasite infections is critical for furthering our understanding of how parasite co-infections impact host immune responses. Establishing the impact of recurring/subsequent parasitic infections and their influence on parasite dynamics can directly impact the development of parasite control strategies.