

Investigating the impact of grazing management on parasite control and pasture

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Gastrointestinal nematodes (GIN) reduce sheep production efficiency and may increase the carbon footprint of livestock farming. Anthelmintics have been widely used to control GIN, but over-reliance on this approach has led to drug resistance. Sustainable parasite management strategies are therefore required to preserve anthelmintic efficacy without compromising animal health. 'Regenerative' farming practices have received attention recently for potentially improving biodiversity, soil health and animal productivity, while potentially reducing parasite exposure. This study, conducted as part of a broader 2023 to 2026 trial, investigates the impact of rotational and set-stocked grazing on lamb productivity, pasture composition, and GIN control. Lambs (10 per paddock, 6 paddocks per grazing strategy) were weighed, faecal sampled and had a faecal egg count (FEC) carried out fortnightly from May to October. Anthelmintics were administered using a targeted selective treatment approach, whereby animals were treated only if they failed to meet target weight according to the Happy Factor™ algorithm. Pasture mass was measured and, in 2025 only, pasture larval counts were carried out monthly. All data were analysed using generalized linear mixed-effects models. Results from the 2023 - 2025 grazing trials showed that, overall, rotational paddocks produced greater pasture biomass than set-stocked paddocks (472 kgDM/Ha, ± 73 SE). Fitting an interaction between week and grazing strategy in our model suggested differences most pronounced in Jun and July. Overall, set-stocked lambs were significantly heavier (1.65 kg, ± 0.4 SE). However, this effect varied by year and was primarily driven by the 2025 grazing season, with the greatest weight differences observed during the latter half of the grazing season. Lambs treated two weeks previously were significantly lighter than untreated lambs (-0.44kg, ± 0.12 SE). Pasture strongyle larval counts did not differ between systems. A grazing system \times month interaction was detected for *Nematodirus* spp. pasture larvae counts, although overall, *Nematodirus* spp. FEC did not differ between systems. Overall, grazing system did not impact the number of anthelmintic treatments administered to lambs. Overall, set stocked animals had a significantly lower strongyle FEC than rotationally grazed animals (-25epg, ± 6 SE), with a significant grazing system \times week interaction. In conclusion, rotational grazing increased pasture biomass, whereas set stocking was associated with improved growth and lower strongyle FEC. It is therefore important to understand the impact that 'regenerative' farming practices have not only on the environment, soil and plant life, but also on animal health and welfare outcomes.