Anthelminthic resistance update 2025

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This report details the analysis of data submitted to the Awanui Veterinary network for the season June 2024 to May 2025 for fully differentiated faecal egg count reduction testing (FECRT). Data was obtained from cases that clearly identified the test anthelmintic and sample groups with ≥ 10 animals per treatment group. Data at genus level required a pre-treatment load of 50 eggs per gram (epg) per genus to be determined valid. All other test requirements and methodology were as described by McKenna (2018).

The final data set contained information from 92 farms submitted over this period. Data was excluded in the following situations:

- Insignificant numbers of a genus found (<50 epg in the pre FECRT)
- Test anthelmintic not being clearly identified on the submission form.
- Sporadic egg counts identified on two farms indicating one animal potentially drenched incorrectly.
- Abamectin/Closantel combination drench has not been reported as only one FECRT used this anthelmintic.
- Submissions not clearly identified as FECRT were excluded from the study.
- Submissions where part of the FECRT was performed in-clinic, with only the larval culture being performed at Awanui Veterinary, were excluded due to lack of compliance with the laboratory's accreditation and quality procedures.

The results of the analyses, which cover a total of 47 cases from the North Island and 45 cases from the South Island, are detailed in Table 1. No significant increases in resistance were noted from the previous year's report (Riddy, 2024). Of note however, is the significant decrease in numbers of FECRT performed this season (92) in comparison to the previous season (174). This decrease in data weakens the data set making interpretations from the data more difficult than previous years.

***Table 1**: The prevalence of anthelmintic resistance identified in sheep nematodes by fully differentiated faecal egg count reduction tests (FECRTs) undertaken on case submissions to Awanui Veterinary laboratory during 2024-2025 (n=92 farms).*

PARASITE	BZ	LEV	ML	MOX	BZ/LEV	LEV/ML	DERQ/ABA	ABA/MONE	TRIPLE	Total
Cooperia	0/12 0%	0/20 0%	6/36 17%	4/38 11%	1/44 2%	0/16 0%	0/15 0%	0/31 0%	0/80 0%	12/293 4%
Haemonchus	0/4 0%	0/9 0%	0/26 0%	0/37 0%	0/42 0%	0/8 0%	0/13 0%	0/25 0%	0/68 0%	0/233 0%
Nematodirus	6/8 75%	1/6 17%	0/10 0%	2/19 11%	3/24 13%	0/8 0%	0/15 0%	0/21 0%	1/46 2%	13/157 8%
Oesoph/Chabertia	0/14 0%	0/17 0%	1/30 3%	0/27 0%	1/45 2%	0/10 0%	0/16 0%	0/25 0%	0/54 0%	2/239 1%
Teladorsagia	7/16 44%	6/20 30%	19/44 43%	12/44 27%	17/57 30%	10/18 56%	2/24 8%	0/38 0%	23/81 28%	97/343 28%
Trichostrongylus	9/22 41%	6/27 22%	15/51 29%	15/49 31%	23/63 37%	9/18 50%	0/28 0%	3/45 7%	44/103 43%	125/407 31%
Total	22/79 30%	13/99 13%	41/197 21%	33/214 15%	45/275 16%	19/78 24%	2/111 2%	3/185 2%	68/432 16%	

Legend: BZ – Benzimidazoles, LEV - Levamisole, ML – Macrocyclic lactone, MOX - Moxidectin, BZ/LEV – Benzimidazoles/Levamisole, LEV/ML – Levamisole/ Macrocyclic lactone, DERQ/ABA – Derquantel/Abamectin, ABA/MONE – Abamectin/Monepanel, TRIPLE – Triple combination.

Classification of cases by geographical location for both anthelmintic and genus for the percentage of resistance can be found in Figures 1 and 2. Please note, the 100% resistance for the Benzimidazole group in the North Island was obtained from one farm. Care should be taken when interpreting this data.

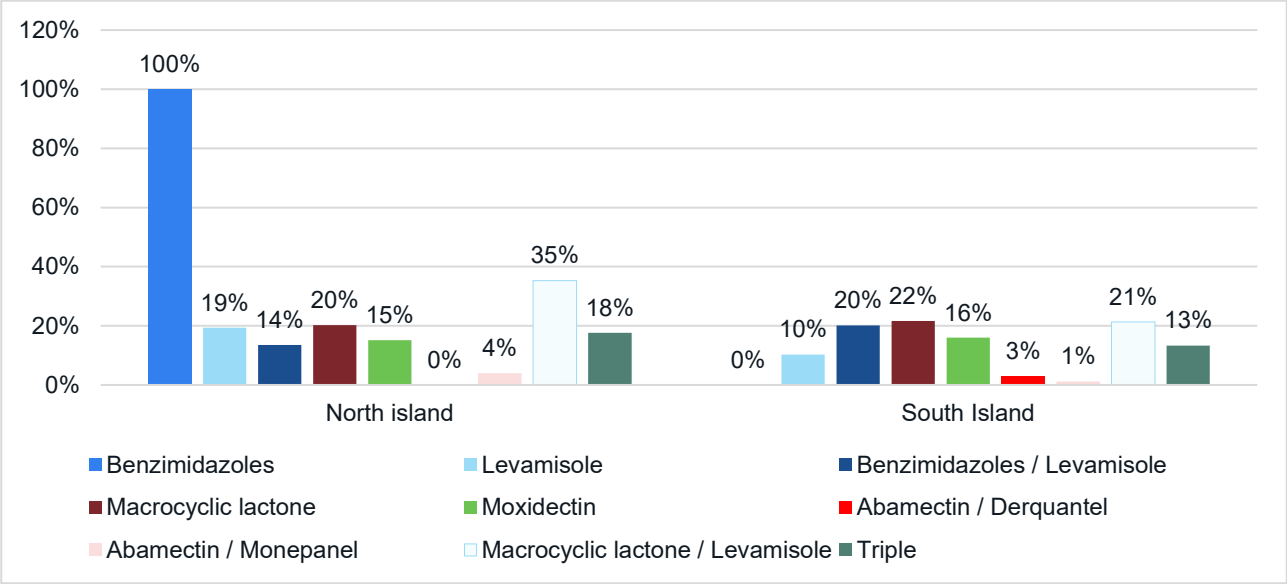

Figure 1: Prevalence of resistance to anthelmintic recorded in sheep FECRTs submitted to Awanui Veterinary laboratories during 2024-2025 (n = 92 farms).

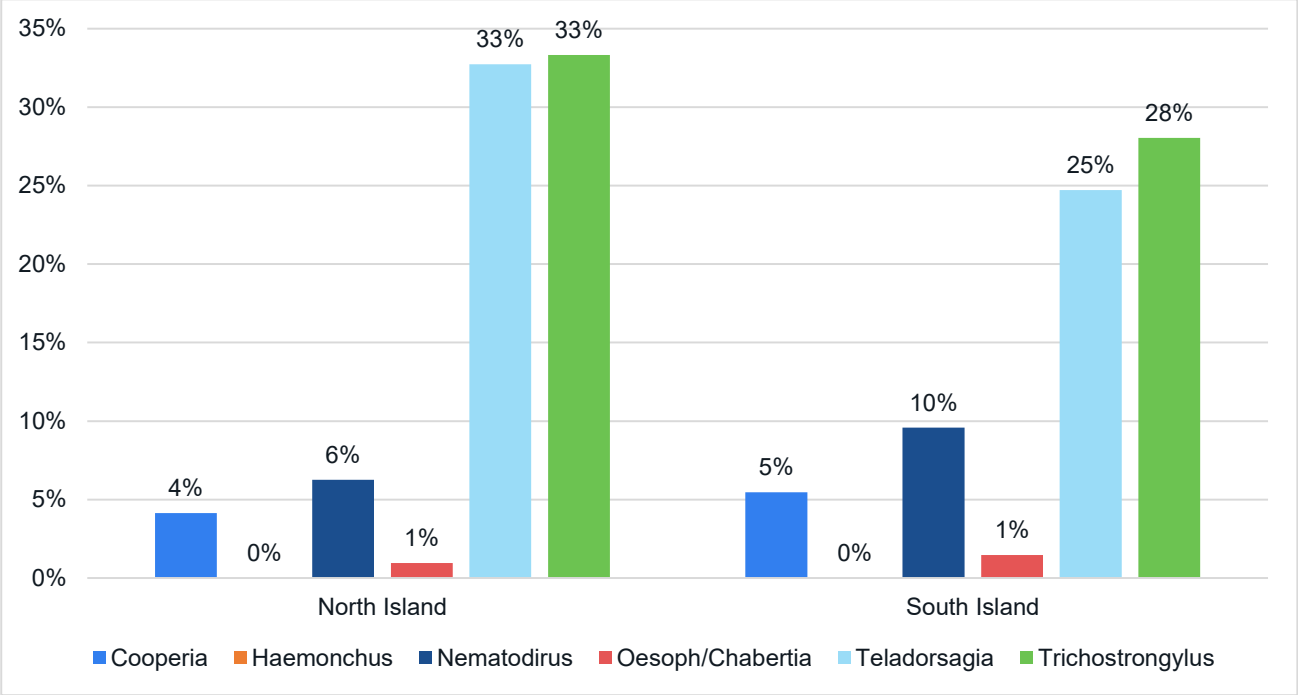

Figure 2: Prevalence of resistance to anthelmintic to genus level recorded in sheep FECRTs submitted to Awanui Veterinary laboratories during 2024-2025 (n = 92 farms).

The data analysed above represents a snapshot of FECRT results conducted across New Zealand, as it is based solely on the FECRT submissions received by our network of laboratories. This data may be influenced by factors such as the geographic location of the submitters, the

methods of sample collection, and the specific reasons for conducting the FECRT on each farm. A larger volume of FECRT submissions would provide a more accurate representation of the broader trends occurring across New Zealand.

In conclusion, as the approach to parasite control management evolves across New Zealand, we will continue to monitor resistance through this passive surveillance method at Awanui Veterinary. By combining education, the development of control plans to minimize anthelmintic usage, and up-to-date data on anthelmintic resistance, we are equipped with a range of effective strategies. As we publish these annual updates, we will gradually build a clearer understanding of the true extent of parasite resistance on farms that have submitted FECRT data to our laboratories.

References

- McKenna PB. Update on the prevalence of anthelmintic resistance. *VetScript* 31:46–47, 2018
- Riddy SF. (2024, September). *Ovine drench resistance update 2024 - Awanui Veterinary*. Awanui Veterinary. https://www.awanuivets.co.nz/drench-resistance-update-2024/