

Eprinomectin-based anthelmintic treatment failures in small ruminants: resistance or inappropriate route of administration?

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Partie 3 **Parasites of domestic and wild animals**

3.4. Prevention and treatment, drug resistance

Oral presentation

In small ruminant dairy farming, eprinomectin use is highly prevalent and treatment failures occur. The aim of this case study was to determine whether the cause of these failures is due to resistance of gastrointestinal nematodes to eprinomectin or to under-dosing related to an inappropriate route of administration.

The study was carried out on two farms of 49 Alpine goats and 49 Lacaune ewes, in the Drôme Valley, France. All animals were treated with an eprinomectin-based anthelmintic, orally for goats and topically for ewes. Faecal egg counts (FEC) were determined individually 7 days after treatment for ewes and 19 days for goats. Animals with more than 1000 eggs per gram of faeces (n=23 goats and n=12 ewes) were treated a 2nd time with injectable eprinomectin. FEC were determined individually 15 days after the 2nd treatment. FEC Reduction tests (FECRT) were then calculated using the bayescount package of R.

Treatment failure was shown after the first eprinomectin administration in both farms. The 2nd treatment revealed resistances to eprinomectin in the goat farm (FECRT=23%, CI₉₅ [-1.9 – 44%]) where this drug has been used for the last 5 years. On the other hand, the 2nd treatment was effective (FECRT=99%, CI₉₅ [97.8 – 100%]) in the ewe farm, indicating that topical administration seems to have been responsible for initial treatment failure.

The route of administration needs to be considered when interpreting FECRT results.

Key words:

Gastrointestinal nematode, sheep, goat, eprinomectin, route of administration, resistance, FECRT