BVA guidance on the use of anthelmintics in grazing animals

Introduction

Resistance is reported mainly in gastrointestinal nematodes and, to a lesser extent, in liver fluke in sheep and against all three major classes of anthelmintics (1- benzimidazoles (BZ), 2- Imidazothiazoles (LM), and 3- Macrocyclic Lacotones (ML). In some areas the emergence of multi-drug resistance is such that the only options remaining to clients are to both clear the land and restock later or to diversify into other business areas. Changes in the climate with warm and wet seasons are likely to increase the problem.

What causes resistance?

Anthelmintics have been extremely successful in tackling parasite problems but that success has led historically to a heavy reliance on their use on many farms. The continual use of an anthelmintic on the same animals grazing in the same fields leads to selection for a resistant population of parasites. Over time, and when treatment has not entirely killed off the parasites, those remaining have been made up of increasing proportions of resistant parasites.

The survival of these resistant populations has been enhanced by ineffective treatment from underdosing the affected animals, the misdiagnosis of symptoms leading to overuse and inappropriate use of anthelmintics where they are not indicated.

Action to minimise the development of resistance to existing anthelmintics is urgent and essential. New classes of anthelmintic are being developed and their efficacy must be preserved for as long as possible, but the emergence of replacement products cannot always be relied on in the long term. Nor can they be wasted by allowing resistance against them to develop. Veterinarians and farmers must act now to ensure that anthelmintics continue to be an effective treatment against parasites.

Judicious use

Anthelmintics are an essential treatment option and highly effective if used properly and in the right circumstances. They must not however be used without careful thought being given to risk that each use brings to the further development of resistance. Their use must be judicious and limited to circumstances when treatment can be effective, targeted and based on sound veterinary diagnosis.

The following strategies should be followed:

• Ensure sound veterinary diagnosis before considering the use of anthelmintics.
• Target the drug used to treat the parasite to be treated through analysis of faecal samples.

• Avoid too frequent and repeated use of anthelmintics from the same class, over an extended period of time. An underlying annual (slow) rotation of anthelmintics between drug classes may be helpful, and a sequential use of two classes may be called for in some instances.

• Ensure clients understand the importance of effective treatment through taking care not to underdose animals because of underestimation of body weight, maladministration of the product, or lack of calibration of the dosing device.

• Investigate suspected clinical cases of resistance to a particular anthelmintic and ensure effective treatment by using anthelmintics belonging to another pharmacological class.

• Encourage clients to develop, with veterinary advice and through farm health planning, a worming strategy on the farm including a full grazing management programme to reduce the need for treatment and ensuring it is effective.

• Preserve susceptible worms by understanding the concept of refugia to stop anthelmintic resistant worms developing by not turning out newly treated animals onto clean pasture or leaving a small number of clinically healthy animals untreated. See SCOPS Paragraph 6.2.3 http://www.nationalsheep.org.uk/images/stories/pdf/scopstechmanthree.pdf

Vets should encourage clients by:

• Developing with them a health plan with a worming strategy including a full grazing management programme. Where multiple animals on one premises are owned by multiple owners the strategy for parasite control is the joint responsibility of owners and management in the livery yard situation. Several veterinary practices may also be involved in the care of these animals and it is important that a co-ordinated anthelmintic strategy based on veterinary advice should be agreed by all of those involved. Systems should be in place to ensure compliance with that strategy.

• Monitoring worm counts from dung samples to determine optimal treatment regimens and times.

• Using faecal egg count (FEC) monitoring to determine when and which animals to treat and to detect any early signs of resistance. Always keep the treatment of mature sheep that are immune to most worm species to a minimum.

• Performing FEC post dosing to check the effectiveness of the treatment.

• Explaining the concept of refugia and the benefits of not turning out newly treated animals onto clean pasture.

• Advising the client to:

(a) Consult his veterinary surgeon if ineffective anthelmintic treatment is suspected so the veterinarian can investigate, arrange alternative treatment and, if appropriate, report a resistance problem to the Veterinary Medicines Directorate.
(b) Treat all newly purchased animals on arrival, with anthelmintics based on sound veterinary advice from two different anthelmintic classes, and quarantine the animals after treatment to avoid importing resistant worms.

(c) Examine worming patterns and avoiding worming to a set pattern every year. — monitor NADIS parasite forecasts

**Good worming practice**

- Ensure that the correct dose rates are always used based on the most accurate weight estimations possible. Weigh, don’t guess. Always follow the manufacturer’s instructions and make sure that dosing guns dispense the correct volumes of oral drenches.

- Check each animal’s bodyweight and dose according to the largest animal within the group being treated. Follow the manufacturer’s instructions concerning storage and handling of the wormer.

- In ruminants, ensure administration is over the back of the tongue, rather than into the mouth.