

CLIENT EDUCATION HANDOUT

OPTIONAL
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Customer Name, Street Address, City, State, Zip code

Phone number, Alt. phone number, Fax number, e-mail address, web site

Anthelmintic Resistance

Overview

Gastrointestinal parasites are common in grazing livestock species, impacting health, welfare and production. Reliance on deworming medications to control these parasites has selected for resistant worms worldwide. Resistance has been reported in many worm species with some of the most well-known being the barber-pole worm (*Haemonchus contortus*) in sheep and goats and *Cooperia spp.* in cattle.

Species and Animal Groups Affected

All livestock species are susceptible. Sheep and goats have more documented issues with anthelmintic resistance than cattle at this point. Young, pregnant, and immunocompromised animals will display resistance more readily since their parasite burden is often higher and their immune response weaker. Dairy cattle and others housed indoors are unlikely to house resistant gastrointestinal parasites due to limited exposure.

Signs

Lack of response to correct anthelmintic administration. This is best measured by testing fecal parasite egg counts at the time of deworming and two weeks later. If anthelmintic resistance is present, the egg count will decrease by less than 90%. Other non-specific signs include persistence of high levels of parasitism (i.e. weight loss, anemia, diarrhea, unthriftiness) in the face of an appropriate deworming program.

Causes

Gastrointestinal parasites are resistant to anthelmintics based on development of genetic traits, which may then be inherited in a variety of ways. Continued exposure to an anthelmintic class in the face of resistance will create a greater percentage of resistant parasites within that population.

Risk Factors

Overuse of certain classes of deworming medications will lead to the development of resistance over time. Equally as important to the development of resistance is the widespread improper use of deworming products (i.e., under-dosing animals, incorrect administration technique, use of expired products etc.).

Treatment

Identifying an anthelmintic drug class that effectively reduces fecal egg counts in your herd is imperative. This should be done at least annually to monitor development of resistance.

Management Considerations

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Blackwell's 5-Minute Veterinary Consult: Ruminant 2nd Ed.

Sustainable integrated parasite management programs should be developed to decrease parasite burden in the herd. These may include: targeted anthelmintic treatments, pasture rotation, mowing pastures for silage/hay, use of plant species with condensed tannins, etc.

Expected Course and Prognosis

Lack of effective classes of deworming products will become a more widespread and serious issue if use of current products does not become much more judicious.

Notes

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Blackwell's Five-Minute Veterinary Consult: Ruminants, Second Edition, Christopher C.L. Chase, Kaitlyn A. Lutz, Erica C. McKenzie and Ahmed Tibary © 2017 John Wiley & Sons, Inc.