

What About Parasites In the Winter Time?

**WORMING LIVESTOCK, KEEPING BARNs CLEAN, AND
GENERAL GOOD MANAGEMENT CAN SAVE MANY
DOLLARS IN NEEDLESS WINTER LOSSES**

By R. F. Shumard¹

Soon the rigors of another winter will be upon us, causing a cessation of production of visible plant life. This dormancy does not carry over to our domestic animals, as much of the actual production takes place during the winter, especially with sheep and cattle.

Animal parasites, on the other hand, behave like both plants and higher animals when it comes to changes in climatic conditions. Such wide variations of susceptibility or survivability to these changes occur even within the same genus of parasites, that the problem must be handled on a species basis.

It is safe to say that most of the parasites of our domestic animals cannot survive the winter, in their immature stages, on the pastures normally used during the remainder of the year. Some have the ability and the potential to survive under certain conditions. Others depend on the conditions provided for their survival by management practices and still others depend on their carry-over or reproduction in the over-wintering domestic or wild animal population.

Overwintering on Pasture

Like some plant seeds, the eggs or larvae of some nematodes are capable of surviving severe winters. Infective larvae of the thread-neck worm (*Nematodirus* sp.), found as an adult in sheep and cattle, can survive freezing if it is air dried first. Presumably other species such as the hair worm (*Trichostrongylus* sp.), the small brown stomach worm of sheep (*Ostertagia circumcincta*), and the hair lung worm (*Muellerias minutissimus*) can survive our winters, while other common nematode species cannot. Experiments on coccidia of sheep and cattle indicate that the oocysts of some species of this group of parasites may be able to survive the winter conditions. Immature tapeworms can survive in their protected intermediate hosts; flukes overwinter in their intermediate hosts just as they survive dry summers in aestivating snails.

Overwintering Off the Pasture

We know that the above parasites probably will be with us again next spring if they were present this year. But why should

¹Assistant Parasitologist.

other parasites that are killed on the winter pastures return in extremely large numbers in the following spring and summer? We know it is not spontaneous generation. These animals must have parents, or at least one parent, just as the higher animals.

As an example of overwintering off the pasture, let us discuss the Eastern stomach worm (*Haemonchus contortus*), which occurs in both cattle and sheep as well as goats and some of our wild ruminants. The first possibility is, therefore, carry-over infections in wild ruminants. It is entirely possible that such a means occurs, but studies show that the wild ruminants play a very minor part in winter carry-over of this and other nematodes, flukes and tapeworms and absolutely no part in carry-over of coccidia. There are other means that are more favorable to the parasite.

A stockman who practices parasite control will treat his animals before housing them for the winter. In treatment, let us say that most of the stomach worms are removed, but that 18 immature worms remain. Of these 18, let us assume that nine are males and nine females. When the worms mature, the production of a single female worm will be between 5,000 and 10,000 eggs per day. In one week of warm spring or summer weather, potentially there would be from 315,000 to 630,000 new stomach worms on the pasture from 18 carry-over worms. This is the reason we advocate continuous treatment for nematodes.

Some stock raisers do not bother with parasite control. In this case, no winter carry-over is necessary as winter reproduction will occur. This is true for most nematodes, tapeworms, and coccidia. All that is required is a source of infection, moisture, correct temperature conditions and enough time for development to take place. The source of infection is usually a recovered and sometimes a resistant carrier in the herd or flock; moisture is supplied by inadequate bedding; heat is produced by the bodies of the stock themselves and time (which is relatively short for most of these processes) usually is adequate. New barn stock, especially in the case of sheep, and non-resistant older stock become infected in this manner.

Adequate dry bedding, clean barns and other facilities will significantly reduce the parasite problem. By keeping manure moving from the barn and onto a compost heap (where the extreme heat of decomposition will kill most immature parasites) the infections are kept down. The general rule to follow is to break the life cycle in some place by denying the parasites one of the essentials: moisture, warmth, or time.

Summary

Some of the possible means for winter carry-over of parasites have been discussed. These are not the only possible means these parasites use in reproducing their species. It is up to the stock raiser to control more effectively winter carry-over of those species of parasites that cannot survive the winters as immature forms on pasture.