

Managing Internal Parasites in Sheep and Goats

Pastures this spring were so productive animals couldn't graze fast enough to keep up with lush growing grass. Several weeks of hot weather and limited irrigation water has now reversed that situation. We are noting that many pastures throughout the valley are grazed pretty tight, especially where sheep, goats or horses are grazing. Overgrazing is typically followed by an increase of internal parasites in animals that forage.

Problems associated with parasites, especially those of the gastrointestinal tract of sheep and goats can cause irreversible damage or even death. Animals that are burdened with internal parasites experience reduced growth rates and can be hindered in their reproductive performance, leading to an economic loss for the producer. Prevention and control of parasites that infect sheep and goats are becoming increasingly difficult due to growing resistance by parasites to common anthelmintics (dewormers).

The most deadly internal parasite to small ruminants in our area is the gastrointestinal roundworm *Haemonchus contortus*, also known as the barber pole worm and a variety of other names.

Haemonchus contortus is a blood sucking parasite that can cause severe anemia, protein loss and even death in sheep and goats. Other parasites such as *Strongyloides* and *Coccidia* also cause problems for small ruminants, but *Haemonchus contortus* is usually the worst.

The *Haemonchus* lifecycle begins when the larvae in the infective L3 stage of development are ingested from the grass and travel to the abomasum, or true stomach, of the animal. Once in the abomasum the larvae will follow one of two paths. They may proceed with further larval stages and the eventual develop into adults or they may be arrested and fail to develop further. If environmental conditions in the stomach are favorable, L3 larvae will molt into the L4 stage and then molt once more into adults. Once the mature form is complete adults then begin to lay eggs in the abomasum. The adult *Haemonchus* female can lay up to 5,000 eggs per day, thus explaining why *Haemonchus* is so difficult to control. Eggs laid in the abomasum are expelled from the body via the feces.

Eggs in the feces usually remain inactive for a few days in the environment. When conditions are favorable larvae hatch from the eggs and move through larval stages L1, L2, and L3 of development. When larvae reach the infective L3 stage, they emerge from the fecal pellet and climb up onto the blades of grass where they wait to be ingested by a grazing animal, thus completing the lifecycle. Virtually all L3 larvae are ingested when animals are forced to graze close to the ground. Although parasite problems cannot be entirely eliminated by good pasture management, using good rotational grazing techniques can significantly lower the parasite.

Individual sheep and goats vary in their degree of susceptibility to parasites. Some animals, by reason of their genetics, are much more resistant to parasitic infections and can survive parasite levels without showing any symptoms. Other animals may be killed by that same level of infestation. This genetic resistance can be used when selecting breeding stock. Animal age and stage of development also have a significant impact on the susceptibility to parasites. As animals age they are exposed to more and more parasites and develop some immunity to infection. Young animals that are growing and are on continuous permanent pasture are the most susceptible to parasites. Ewes and does in late gestation,

and for a short period after giving birth, lose much of their resistance to parasites due to hormonal effects. Mature, dry ewes and does are usually the most resistant to parasitic infections.

Some general symptoms when animals are burdened with parasites include diarrhea, weight loss or reduced weight gain, general unthriftiness, loss of appetite and reduced reproductive performance. Animals also become weak and anemic because the *Haemonchus* parasite can consume up to 10 percent of an animal's total blood volume in a day. Anemia is most easily identified in small ruminants by the color of the mucous membranes, particularly those in the lower eyelid. A normal animal will have healthy, red mucous membranes, while one heavily burdened with *Haemonchus* will exhibit light pink or white membranes. Edema may also occur in animals heavily burdened with *Haemonchus*. This accumulation of fluid will be most obvious as a swelling in the lower jaw, a condition known as "bottle jaw".

There are a host of anthelmintics (or dewormers) that can be used to treat animals infected with internal parasites. A Fecal Egg Count Reduction Test may be necessary before veterinarians or producers can determine the efficacy of potential anthelmintics. This involves taking fecal samples from a random group of animals within the herd. Our local Veterinary Diagnostic Lab on the USU campus can run a fecal float test for a small fee.

Clark Israelsen
USU Extension Ag Agent
Cache County

