

Controlling Parasites on Pasture

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The need to control internal parasites will exist as long as cattle are grazing pastures. However, parasite levels are not the same on all pastures or in all cattle. Pastures that are heavily stocked generally have a higher parasite burden. Cattle in a drylot are less likely to have heavy worm infections than those on pastures. Young cattle will typically have more internal parasites. The methods of controlling internal parasites should be developed to fit individual production situations. A strategic deworming program starts with understanding the life cycle of problem parasites, identifying seasonal changes in parasite burdens and implementing cost effective control. This, along with good overall herd management, will increase milk production in cows and weaning weights of calves.

External Parasites

Flies can transmit diseases through bites or feeding on other bodily secretions. Large flies can transmit many blood borne diseases. Face flies can increase pinkeye in a herd by sharing bacteria from tear secretions of an infected animal with an unaffected herdmate. Horn flies are a constant source of irritation during warmer months. Typically, cattle dealing with a horn fly vexation will have lower gains and milk production than those protected with insecticide. Heel flies are large, resemble a bumblebee, and are fairly innocuous; the only harm they cause is frightening cattle when attempting to lay eggs.

Biting and sucking lice can drive cattle to madness. Treatment of an infestation is a must or cattle mutilate themselves in an attempt to relieve irritation. Generally a winter and early spring problem, cattle have been known to carry untreated infestation into early summer before temperature and sunlight eliminates the problem.

Ticks transmit bacterial infections from feeding on infected hosts in an immature form, and then feeding on uninfected hosts in the next life cycle stage. The most widely known is *Borrelia burgdorferi*, the causative agent of Lyme Disease. Ticks also transmit Rocky Mountain Spotted Fever, Q Fever, babesiosis, and tularemia. These parasites are rarely host specific making tick control challenging.

Internal Parasites

Trematodes (flukes), cestodes (tapeworms), and nematodes (round worms) are the primary internal parasites afflicting cattle. Protozoal parasites (e.g., coccidians, neospora) are prevalent in some situations, resulting in major economic loss due to neonatal calf scours.

Flukes can be acquired by skin penetration and by ingestion of vegetation or insects carrying the immature fluke. The greatest economic concern for the beef industry are liver flukes. Liver fluke infestations can result in several *clostridium* diseases (e.g., black disease, redwater). In more chronic cases, these can damage the liver enough that it is unable to perform normal functions, and cattle will become weak, emaciated, anemic, and can die. Effective control of liver flukes is to decrease exposure to snail infested areas (e.g., ponds, swamps, wet areas) by fencing or providing adequate drainage.

Tapeworms are fairly nonpathogenic in cattle. Their life cycle includes infection of an ant with the immature tapeworm. When infected, ants crawl up grass, dangle by mandibles, and are ingested by grazing ruminants. Pasture renovation disrupts the soil and potentially deters ants from colonizing where cattle graze.

Round worms are the largest, most diverse group of internal parasites. Some take up residence in the gut (e.g., hookworm, whipworm), some latch on to the abomasum lining (e.g., barber pole worm), some migrate through the lungs, causing pneumonitis (e.g., lung worm), and others migrate through the hide causing belly lesions. Strongylids cause the most economic significance and infest the lungs, abomasum, and small intestine. Infestation is usually the most significant for calves early in the grazing season since their gut does not have a parasite burden, making it an ideal place for a strongyle resulting in reduced performance.

Coccidiosis typically affects calves at 21 days of age or older (even though infection occurred at birth), and can also be seen in feedlot cattle. The calf's immune system will learn to keep the parasite under control, but will never clear the infection. At times of increased stress, the adult host immune system will experience some level of suppression and will increase shedding of the coccidians in their feces. Thus, the level of contamination in the environment is increased enabling efficient transmission from cow to calf.

Cryptosporidiosis is punctual in regard to expression of disease. Calves begin scouring at 8-16 days of age. If the first calf starts at 11 days, the other calves will scour at the same age.

Parasite Treatment and Control

Macrolide dewormers revolutionized cattle parasite control. Avermectins (e.g., ivermectin, doramectin, eprinomectin, moxidectin) are safe, easy to administer, and have excellent persistence. They are included in deworming protocols for their excellent internal parasite control, but have activity against external parasites. They do not control flukes or tapeworms; if these afflict your herd, inclusion of '-azoles' may be required. Over time, with increased use, parasite resistance may occur. In theory, switching dewormers will help minimize resistance. Unfortunately, there are no new broad spectrum dewormers to help make the transition. Ideally, macrolide dewormers should be administered as cattle are turned out on grass in late-spring or early-summer.

Organophosphates and pyrethroids are complementary to macrolides in controlling external parasites. These can be dips, sprays, pour-ons, or insecticide impregnated ear tags and should be administered prior to grass turn-out. Remove ear tags after the grazing season to reduce insecticide resistant flies.

Benzimidazoles, or '-azoles' (e.g., fenbendazole, oxfendazole, albendazole) are effective compounds for internal parasite control. These have little residual, therefore, the entire herd must be treated the same day and immediately moved to clean pastures or pens, or re-infestation will occur.

If effectively dewormed and gut cleaned out at a time when larval burden is high, subsequent parasitic burden may be higher than the previous load. Timing, grazing system evaluation, and dewormer effect and persistence are parts of an effective roundworm deworming schedule. Avoid performance losses by deworming in the spring when exposure and load is high. If deworming in the fall, it is recommended to wait until after a hard frost kills larva and decreases the load cattle will be exposed to. Consult with your veterinarian on the best timing and product usage for your system.

There are only two approved drugs for liver flukes, albendazole and clorsulon. Results can be less than satisfactory without thorough investigation and planning. Vaccination of mature animals and young stock with an 8-way clostridial vaccine will reduce redwater and black disease, even if infestations are heavy late-summer and fall.

Treat coccidiosis with amprolium, monensin, and oral sulfa drugs. There is no approved treatment for cryptosporidiosis, however, there are benefits to treating scouring calves with sulfa drugs.