



Grazing Gazette

Volume 7, Issue 4

July/August 2018

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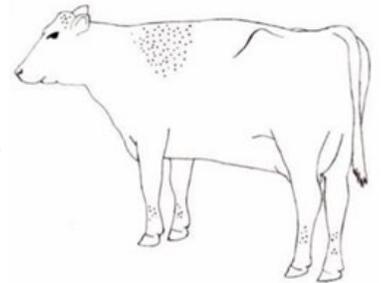
Controlling parasites on pasture

Eric Mousel, U of M Extension Beef Team

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 than lightly stocked ones. Cattle in a drylot are less likely to have heavy worm infections than those on pastures. Young cattle will typically have more internal parasites than older cattle. Therefore, the methods of controlling internal parasites should be developed to fit individual production situations. Strategic deworming starts with understanding the life cycle of problem parasites, identifying seasonal changes in parasite burdens and implementing cost effective control. A successful deworming program, along with good overall herd management, will increase milk production in cows and thereby increase weaning weights of calves.

External Parasites

Flies can transmit all manners of diseases through bites or feeding on other bodily secretions. The large flies (tabanids: horse flies, deer flies, yellow flies, etc.) can transmit many blood borne diseases (anaplasmosis, bovine leukosis virus, anthrax) as a result of their large, slicing, and painful bite and the large blood meal that they take from each host.



Face flies increase the extent and severity of pinkeye in a cattle herd by sharing the bacteria from the tear secretions of an infected animal with an unaffected herdmate. Horn flies are a constant source of irritation for cattle during the warmer months of the year. Typically, cattle dealing with a horn fly vexation will have lower gains and lower milk production than those cattle that are protected with some form of insecticide. Heel flies are rather large and resemble a bumblebee, and they are fairly innocuous; the only harm that they cause is that of frightening cattle when they attempt to land to lay their eggs.

Internal Parasites

Protozoans. The trematodes (flukes), cestodes (tapeworms), and nematodes (round worms) are usually the primary internal parasites that afflict cattle in our region. Protozoal parasites such as coccidians and neospora also are prevalent in some situations. Infection by protozoal parasites results in major economic losses due to neonatal calf scours.

In the northern regions of the state, flukes can be acquired by ingestion or skin penetration. Flukes that affect cattle are acquired by ingestion of vegetation or insects that carry the immature form of the fluke. Flukes of greatest economic concern for the beef industry in the United States are the common liver fluke and the deer liver fluke. Migration of many immature flukes through the liver can result in several *clostridium* diseases, which can kill the host very quickly. Black disease (*Clostridium novyiIn*) and redwater (*Clostridium hemolyticum*) are two common examples of clostridium diseases that are initiated by liver fluke infestations. In more chronic cases, migration of liver flukes damage the liver enough that it is unable to perform its functions normally, and cattle will become weak, emaciated, anemic, and can die. The intermediate hosts for liver flukes are snails, and often effective control of liver flukes in cattle is to decrease the cattle exposure to the snail infested areas. Usually these are ponds, swamps, and other wet areas where the snail can thrive, thereby increasing the concentration of the immature flukes. By fencing cattle away from these wet areas, or providing adequate drainage, one can decrease the total fluke burden that the cattle may be exposed to during grazing.

Tapeworms, are fairly nonpathogenic in cattle. Their life cycle includes infection of an ant with the immature form of the tapeworm, which makes the ant go crazy. Instead of doing normal ant things, when infected, the ant will crawl up a blade of grass, dangle off the end of the blade by its mandibles, and wait patiently to be ingested by the grazing ruminant. For this reason, pasture renovation will help disrupt the soil and potentially deter the ants from colonizing the pastures where cattle graze.

Round worms, consist of the largest, most diverse group of internal parasites. Some take up residence in the gut (hookworm, whipworm), some latch on to the lining of the abomasum (barber pole worm), some migrate through the lungs, causing pneumonitis (lung worm), and others even migrate through the hide and lesions can be visualized on the underside of a cow's belly. The round worms of the most economic significance for the beef industry in North America are strongylids. These can be found in the lungs, abomasum, and small intestine. Infestation is usually the most significant for young animals early in the grazing season. The gut of a calf does not have a parasite burden at the start of its first grazing season, making it an ideal place for a strongyle to want to be. The result is generally reduced performance in the calf.

Coccidiosis will typically affect 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, as a result of the stress, and will increase shedding of the coccidians in their feces. Thus, the level of contamination in the environment is increased. This is how transmission is able to occur efficiently from cow to calf.

Cryptosporidiosis is fairly punctual in regard to expression of clinical disease. Typically calves will begin to scour at 8 to 16 days of age, and, if the first calf starts at 11 days of age, the rest of the calves will likely start scouring at the same age.

Parasite treatment and control

The macrolides are the dewormers that revolutionized parasite control in cattle. The avermectins (ivermectin, doramectin, eprinomectin, moxidectin) are extremely safe dewormers that are in easy to administer and have excellent persistence. They are generally employed in a deworming protocol for their excellent internal parasite control, but also have activity against some external parasites as well. However, the activity of avermectins does not extend to flukes or tapeworms; if these are an affliction to your herd, inclusion of the ‘-azoles’ may be required to maximize your herd health status. Over time, and with increased use, there are, invariably, cases of parasite resistance to dewormers. In theory, switching dewormers in the face of a building resistance will help minimize growth of the population of resistance parasites. For example, some veterinarians have suggested that switching drug classes every two years will help keep the incidence of resistance down (‘-azole’ to avermectin, and back to ‘-azole’). Unfortunately, there has not been an introduction of any new, novel broad spectrum dewormers to help make the transition smooth for the producer. Ideally, macrolide dewormers should be administered just as cattle are turned out on grass in late-spring or early-summer.

Organophosphates and pyrethroids are complementary to macrolides in their effectiveness for control of external parasites only. These can be found in the form of dips, sprays (animal and premises), pour-ons, or in insecticide impregnated ear tags. These compounds should be administered to cattle prior to grass turn-out. It is also important to remember to remove the ear tags from the cattle after the grazing season is over. Removal of the ear tags will help reduce the likelihood of the development of insecticide resistance in flies.

The benzimidazoles, or ‘-azoles’ (fenbendazole, oxfendazole, albendazole, etc.) are effective compounds for internal parasite control, though with little to no persistence. These dewormers have very little residual therefore, ALL animals in the herd must be treated on the same day, and moved to clean pastures or pens immediately after treatment, or re-infestation will occur and the exercise would be a wasted effort. If the cow is effectively dewormed, and her gut cleaned out, at a time when larval burden is high (late-spring – early summer), the subsequent parasitic burden may be higher than the previous load that you worked so hard to eliminate. Bearing this in mind, timing, evaluations of your grazing system, and the effect and persistence of the dewormer chosen, are integral parts of an effective deworming schedule for roundworms. Current anecdotal recommendations are to deworm the cattle in the spring of the year, when exposure and load is high, to avoid performance losses. Also, if a fall deworming strategy is employed, it has been recommended to wait until after a hard frost, which will kill some of the infective larva, and decrease the load that the cattle will be exposed to. Again, consult with your herd veterinarian on the best timing and product usage for your production system.

If you are in northern Minnesota, Valbazen™ (albendazole) oral drench is the only effective treatment for the deer fluke. If you deal with deer liver flukes, consult with your herd veterinarian on the best approach to dealing with the liver fluke problem. Additionally, vaccination of mature animals and young-stock with an 8-way clostridial vaccine will reduce the incidence of redwater and black disease, even if fluke infestations get heavy towards late-summer and fall.

If signs of Coccidiosis are observed in the herd, they can be treated with amprolium, monensin, and will also respond to oral administration of sulfa drugs. There is no approved treatment for cryptosporidiosis, however, there are benefits to treating scouring calves with sulfa drugs.

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