Vet Call

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Liver flukes

Liver flukes are large flat worms that invade the liver of cattle. The USDA reports that about 5% of slaughtered cattle are infested, and their livers are condemned. Liver flukes cause economic loss through liver condemnation at slaughter, as well as decreased growth and reproductive efficiency. In addition, clostridial bacteria that live in soil (same family as the organism causing blackleg) cause black disease and redwater disease. If they get a "foothold" in the liver due to damage caused by flukes, these diseases can be fatal.

How flukes infest

Because these parasites require a specific type of water-living snail for some stages of the life cycle, cattle in many parts of the country are not at risk. In areas where certain snails are commonly found, a high percentage of adult cows can be infested. Eating snails that have been infested by fluke larva is the only way cattle can be infested. The most common fluke infesting cattle is *Fasciola hepatica*. The other common liver fluke is the giant deer fluke, or *Fascioloides magna*.

Areas of high risk

Cattle most likely to be affected with *F. hepatica* are those grazing in low-lying swampy areas, flood irrigation areas, or anywhere that surface water or small, slow-moving streams favor large populations of snails. The snail that serves as the intermediate host of *F. hepatica* is found in the Gulf Coast states and some western states.

The giant deer fluke is a problem in Gulf Coast states, the Great Lakes region and the Pacific Northwest where it naturally infests deer, elk and moose. Cattle can also become infested with the giant deer fluke and experience liver damage, but this species of fluke cannot fully mature and lay eggs when infesting cattle. In the Gulf Coast states, most fluke transmission occurs between the months of February and June. Transmission stops with the death of fluke eggs, snails and immature flukes in the first sustained drought of the summer. In the Pacific Northwest, cold winter conditions inhibit snail and fluke reproduction.

Even though cattle living in many states cannot become infested with flukes, cattle already infested can be transported to any part of the country and be diagnosed far from the source of the flukes. Most cattle infested with liver flukes do not appear unhealthy, and death is very rare. Some mildly infested cattle have no reduction in performance, but cattle with a higher level of infestation will have decreased weight gain, poorer body condition and decreased milk production. The poorer body condition score of cows infested with flukes may lead to decreased pregnancy rates.

Timing of fluke treatment is very dependent on your location and grazing pattern; therefore, if you live in an area with a risk of liver fluke infestation, you should work with your veterinarian to devise an appropriate control plan.

Young flukes cause extensive liver damage as they move through the liver, but they are difficult to kill at this stage of the life cycle. The amount of damage to the liver is related to the number of young flukes migrating through — with some cattle showing few or no signs of problems and other cattle experiencing severe problems such as diarrhea, weight loss and a yellowing of the membranes around the eyes and vulva in heavily infested cattle. Adult flukes cause very little damage, but are relatively easy to kill with available treatments.

Diagnosis and treatment

Diagnosis often occurs during a necropsy or at slaughter. *F. hepatica* can sometimes be diagnosed by testing a manure sample. However, fluke eggs are much larger than other cattle parasite eggs. The tests commonly used for other cattle worm eggs will not detect fluke eggs, even if they are present. Another issue with relying on a manure sample test to diagnose a fluke infestation is that flukes less than 2-3 months of age are immature and unable to lay eggs. Therefore, cattle can be showing signs of diarrhea and weight loss due to migrating young flukes, but the test will be negative.

Even in older infestations, few flukes reach adulthood and they pass a small number of eggs. Therefore, an animal with a heavy fluke population could have a negative test. Because *F. magna* (the giant deer fluke) does not complete its life cycle in cattle, no eggs are produced or passed in the manure, making diagnosis except at slaughter or necropsy impossible.

Most dewormers available for treatment of cattle parasites do not affect flukes. Your veterinarian can help you identify one of the available treatments that can be used in fluke infestations, but these treatments only are effective against adult *F. hepatica* flukes (greater than 11 weeks of age) and are almost totally ineffective against *F. magna* (giant deer flukes).

Timing of fluke treatment is very dependent on your location and grazing pattern; therefore, if you live in an area with a risk of liver fluke infestation, you should work with your veterinarian to devise an appropriate control plan. Removal of adult flukes will not decrease risk of liver condemnation, because the damage has already been done. However, it does enhance performance in severely fluke-infested cattle and may help decrease exposure of snails living in your pastures to the fluke eggs.

Prevention in areas of the United States that harbor the snails necessary for the liver fluke life cycle involves draining shallow, stagnant ponds, fencing cattle away from shallow bodies of water or treatment of infested water to remove snails.

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