



# Vet Call

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## Internal parasites

*Internal parasites (or worms) have historically been among the most serious health threats facing cattle in many parts of the world. A number of types of internal parasites can affect cattle, including roundworms, liver flukes and coccidia. This month I will focus on roundworms, with information about liver flukes and coccidia being covered over the next two months.*

### Roundworms

Roundworms primarily live in the gut (stomach and intestine) of their host, with one exception being lungworms. Roundworms cause problems for cattle through several pathways. They damage the lining of the digestive tract (or lung), reduce forage or feed intake, and stimulate excessive release of chemicals by the body in an effort to destroy the parasites.

Roundworms spend part of their life cycle in the gut (or lungs) of cattle, while some life-cycle stages must take place on pasture grasses. Adult roundworms live in cattle and produce eggs that pass out in the manure. The eggs then hatch to form immature stages that must mature on pasture. These immature stages of the parasite are eaten along with grass as cattle graze. How quickly the eggs hatch and how likely the immature forms of the worms are to survive depends on the climate (temperature and moisture).

Warm, wet conditions lead to rapid development and high likelihood of survival, and very hot or very cold and dry conditions lead to reduced survival. In general, it takes about two to three weeks for eggs deposited in manure to develop to the stage where they can infest grazing cattle, and then they can survive for several months on infested pastures.

Once inside the cattle, the parasites complete the life cycle in two to eight weeks — when they gain the ability to lay more eggs.

### Symptoms

Calves and yearlings are the most likely classes of cattle to exhibit obvious signs of parasite infestation, which include weight loss, diarrhea, swelling under the jaw, dull hair coat and an unthrifty appearance. Parasite-infested adults often have weight loss or reduced weight gain, but otherwise appear healthy; although even adults can have

obvious signs of parasite infestation if the exposure is heavy enough or if poor nutrition or disease compromises their overall health.

Heaviest exposure to internal parasites tends to occur in parts of the United States with warmer climate, high rainfall, and high stocking density with long grazing seasons that allow the worms to have continuous life cycles throughout the year (i.e., southeast and south-central regions). In colder and dryer climates, the stocking density is lower and the worms have fewer life cycles in a year because there are fewer months of ideal conditions. This results in reduced parasite exposure. Regardless of the climate, the highest risk of severe parasite loads in cow herds is late in the grazing season.

The discovery after World War II of chemicals that can kill or inhibit roundworm parasites with reduced risk of toxicity to animals compared to earlier treatments has given stockmen valuable tools to decrease the health costs of these challenging adversaries. But, in order for dewormers to work well and to maintain their effectiveness, parasite control must involve more than just chemical treatments.

Because young calves and yearlings are more negatively affected by internal parasites than adults, and because some pastures have very high parasite contamination while others will have very light contamination, planning a grazing strategy that places the highest-risk cattle on the lowest-risk pastures is an important method to minimize losses due to worms.

In general, because young cattle tend to be highly susceptible to parasite infestation and they quickly develop high parasite burdens, young cattle should not be grazed continually on the same pasture in parts of the country with severe worm challenges, nor should one group of young cattle immediately follow another group of young cattle on the same pasture.

Pastures that have not been grazed in order to harvest hay; pastures grazed only by adult cows (without calves at side); crop residue fields; and pastures grazed by other species such as sheep or goats would all be likely to have low parasite contamination and are ideal for young cattle.

Young cattle have very poor immune protection from internal parasites, but starting at about 1 year of age, cattle gain the ability to mount an effective immune response to most roundworms (18 months of age for the brown stomach worm). If cattle can be protected from high parasite exposure until they are 12-18 months of age, they will develop a strong immune response without suffering serious loss. By combining grazing management and timely treatment with deworming products, cattle producers can have very effective parasite control while avoiding the overuse (or underuse) of chemical dewormers.

### Treatments available

There are three main classes of chemical dewormers available in the United States, with several product brands within each class. The primary purpose of chemical dewormers is not to treat cattle that have become sick or negatively affected due to high worm burdens; instead, these products should be used to limit parasite contamination of pastures so that cattle are not greatly affected in the first place.

In general, cattle should be treated as they are being turned onto a pasture with a low parasite burden when the conditions are good for parasite survival. Young cattle may require two or more treatments at three- to six-week intervals during periods of the year that are most favorable to the parasites. None of the available products will work well if treated cattle are turned out onto heavily contaminated pasture.

More aggressive treatment and careful monitoring of conditions is vital in the southeast and south central portions of the United States compared to the high plains and western states because of vastly different risks of negative effects due to internal parasites. Because the best roundworm control strategy will vary greatly from one part of the country to another and between different farms and ranches within the same area because of management options, it is important to work with your veterinarian to plan the optimum control strategy.

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