

Pay Attention to Parasites

What you can't see hurts your herd.

by Barb Anderson

Internal parasite problems can affect the nutrition and reproduction of your cow herd, as well as deliver a blow to your bottom line. Most producers have a standard protocol for treatment. But it never hurts to brush up on your internal parasite knowledge and evaluate your current plans with a veterinarian to be sure you are doing all you can to help your herd.

"Parasite levels are not the same on all pastures or in all cattle. The methods of controlling internal parasites should be developed to fit individual situations," says Shane Gadberry, Extension livestock specialist with the University of Arkansas (UA). "Young animals are more susceptible to clinical infection than adults, and malnourished animals are more disease-prone than well-fed animals. In addition, pastures that are heavily stocked generally have a higher parasite burden than lightly stocked ones. A number of factors must be considered."

Problematic parasites

Producers should begin with an

assessment of what internal parasites might be present. Cattle are generally affected by different species of roundworms, tapeworms or liver flukes, and each worm has its own, unique lifecycle.

"Roundworms can be the most

economically devastating internal parasites. The brown stomach worm (*Ostertagia ostertagi*) has evolved to where it can evade an

animal's immune system and be very problematic in the cow herd," says Gadberry. "That and the *Cooperia* species are the most common roundworms. Barber's pole worm (*Haemonchus*), can also be readily found."

"*Cooperia*, also known as the small intestinal worm, seems to be rising in importance," says Grant Dewell, Iowa State University (ISU) Beef Extension veterinarian. "The focus for the last 10-20 years on *Ostertagia* may have allowed *Cooperia* to rise. *Cooperia oncophora* has not been considered to have severe production effects. But in the U.S., *Cooperia punctata* seems to be more common. We are beginning to attribute larger production effects to it."

Although cattle can be infected with tapeworms, their effect on animal performance is minimal. Liver flukes traditionally cause economic problems in poorly drained or flooded areas.

"A wet or damp habitat is ideal for snails, and snails are a host during the fluke life cycle," says Gadberry. "Weather can cause other issues, such as overgrazed situations. Worms are picked up by animals as they graze. Cattle that have to graze closer to the soil surface because of a short forage supply are apt to pick up more parasites than cattle grazing a taller canopy."

Other weather factors also can play a role.

"Worm eggs hatch when humidity and temperature are sufficient for larvae to survive," Dewell says. "Increased precipitation can prolong the parasite season on pasture, which increases the need for additional deworming on pasture."

Economic losses

Parasites can create losses in productivity, including weight issues, altered carcass composition and conception rates, along with more visible, disease-like symptoms that include roughness of coat, anemia, edema and diarrhea. The subclinical effects cause the most economic losses.

All internal worms can decrease digestion efficiency. Dewell stresses *Ostertagia* and *Cooperia* are the most prevalent and have the biggest impact.

"Worms not only compete for nutrients, they damage the tissue important to nutrient uptake and metabolism," says Gadberry. "For example, the brown stomach worm can hibernate within the lumen of the intestine, where nutrients are absorbed. When it arises from its dormant state and emerges from the lumen, damage to the intestinal lining occurs and hinders nutrient absorption."

When found in large numbers, liver flukes can damage the liver and directly affect metabolism. Gadberry adds that diarrhea from a parasite load can create an electrolyte imbalance. When a parasite load becomes sufficient to cause weight loss or prevent weight gain, cows may not have sufficient fat reserves to cycle and maintain pregnancy. Growing replacement heifers may take longer to reach physiological maturity when parasites are hindering growth rates.

"With \$7 to \$8 corn prices, attention to proven strategies to enhance production efficiency, such as deworming, is going to be important," says Dewell. "Additionally, many pastures are being plowed up for row crop production, increasing concentration of cows on remaining pasture. That will enhance transmission of worms. Multiple research studies have shown increased weight gain of calves and reproductive performance when



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worms are properly controlled.”

ISU research, he adds, estimates losses of about \$200 per cow when dewormers are not used vs. when they are. Dewell says the data may be based in another study that estimates a 10% difference in pregnancy rates and 40-pound (lb.) difference in weaning weights.

Similarly, research conducted at Mississippi State University and reported in 2000 showed calves from groups where both cows and calves were treated with pour-on doramectin were 38 lb. heavier at weaning than non-treated groups.

In a 2009 study conducted at Louisiana State University, results found that, at current prices, treating nursing cows for horn flies and deworming calves at preweaning resulted in a four-fold return to cow-calf producers.

Parasite treatment

Animal health specialists recommend producers

evaluate pasture management and dewormers, or anthelmintics, as two methods to control internal parasites.

“Pasture management practices may reduce the parasite burden in cattle. However, the strategy alone will not guarantee parasite eradication,” says Gadberry.

The UA’s recommendations include moving more-susceptible, younger cattle to safe pasture; those pastures not grazed the previous 12 months or those seeded to small grains. Less-susceptible, mature cattle can be placed on more-contaminated pastures. In addition, rotational grazing is not likely to provide enough rest to paddocks to reduce contamination.

The next step is to choose and use a deworming strategy. Dewormers should be applied in a timely manner to reduce infection before symptoms of disease occur. Treatment should also be aimed at interrupting the life cycle of parasites to minimize pasture contamination.

Dewormers fall into two broad categories; avermectins/milbemycins (ivermectin, doramectin, eprinomectin and moxidectin) or benzimidazoles (oxfendazole, albendazole and fendbendazole). Avermectins/milbemycins provide the additional benefit of external parasite control, as well as persistent protection for days to weeks after treatment. Gadberry recommends ivermectin/ milbemycin from April 15 to Oct. 30 and benzimidazole from Oct. 30 to April 15.

“Fall and spring treatments for mature cows may be recommended. The best time to treat mature cows is near freshening. The mature cow’s susceptibility to parasite detriment increases during this time, due to the stress of production and a suppressed immune system,” says Gadberry. “If you choose to treat one time per year, the best time is prior to calving. Calves that will be retained after weaning should be treated at weaning and again as yearlings.”

Dewell advises Iowa growers to implement a strategic deworming program to minimize worm burdens in cows and calves on pasture.

“I prefer avermectin in the late fall for some lice control and against inhibited *Ostertagia*,” he says. “Cows should then have a low worm burden going on spring pasture, although they can pick up new worm infections from overwintered eggs.”

Dewell says rotating to oral benzimidazole in the

spring, six to eight weeks after grazing begins, will remove worms before egg production begins and decrease the egg burden on pasture for an extended period. In southern states, he advises repeating after another six to eight weeks.

Gadberry says where parasite levels are high, like overstocked pastures, twice-a-year treatment may be needed. In cases where parasite levels are low, mature cows may not require treatment.

“Such conditions should only be determined under veterinarian supervision and critical observation, which may include routine sampling for fecal egg counts. Since mature cows have some acquired immunity to internal parasites, older benzimidazole-type products should do a sufficient job of controlling parasites from late October through early April,” he says. “Rotating between different classes of compounds can be useful in trying to prevent resistance.”

Your veterinarian can help you re-visit your strategic deworming program, including whether or not you are experiencing any efficacy issues.

“There is increasing concern about resistance to the avermectin deworming products. Extensive usage of these products the last 20 years has led to some resistance buildup. Cattle producers should critically evaluate how they are using dewormers to prevent further resistance issues,” says Dewell.

Gadberry reports University of Arkansas

research confirms studies with original formulations vs. generic products show original formulations have better efficacy. He recommends producers use newer generation dewormers and always follow labeled dose rates.

“When giving a product, dose cows appropriately by weight,” adds Dewell. “Use a scale to assure you dose appropriately. Take time to apply the product correctly, so that it is all absorbed by the cow, or you will not get the response you are expecting and will waste time and money.”

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