

Worm Woes

Strategic deworming benefits herd health and profitability.
By Chel Terrell

The calendar might say it's springtime right now, but summer temperatures are rapidly approaching. Rising temperatures signal an ideal time to mount a good defense against those persistent internal parasites that can plague cattle herds across the country.

Whether you live in the southern United States or northern regions, combating internal parasites is a yearly battle. Warm temperatures and spring rainfall create a perfect environment for parasite development and infestation.

What's your best weapon in this fight? Strategic deworming.

Contaminated pastures can quickly become a war zone as cattle graze and ingest larvae from infected grass. Deworming in early summer is essential to break the life cycle of nematodes and reduce pasture contamination, leading to healthier animals and increased profits.

"It's definitely cost effective to deworm," said Dr. Christine Navarre, DVM, Louisiana State University AgCenter extension veterinarian. "You're going to more than make up the cost of the dewormer when you get healthier animals on the ground."

Parasites can wreak havoc on growing calves and cows, depending on the level of contamination in the pastures.

"Parasites affect growth and weaning weight in calves. Studies vary, but you should expect to add about 30 lbs. to a calf's weaning weight by deworming," Navarre said. "Parasites can affect reproduction in cows. They are also immunosuppressants, causing the cattle to be more susceptible to other diseases. And it's really important to not forget the bulls in your deworming schedule."

Navarre points out that though Brahman-influenced cattle are known as being resistant to certain diseases, especially external parasites, they can easily fall prey to internal parasites.

"They are actually more susceptible to *Ostertagia ostertagia* (brown stomach worms), especially the bulls even more than females."

Deworming twice a year is highly advised.

"We recommend deworming both in the spring and in the fall," said Dr. Steve Wikse, DVM, retired professor of large animal clinical sciences at Texas A&M University College of Veterinary Medicine. "Deworming in the spring helps break the life cycle of the nematodes, enabling healthy animals to enter the hot summer months when transmission isn't occurring.

"Cooling rains in the fall make conditions more favorable for worms to continue their life cycle, so it's important to deworm cattle again to kill the larvae and stop the cycle. Late fall works well."

Know the Enemy

Humid, springtime weather in southern states is prime breeding condition for parasites, especially *Ostertagia*, which account for the largest percentage of damages associated with internal parasites.

Worms like *Ostertagia* are cool-season parasites, which is why spring is the biggest transmission period for producers raising cattle in southern states. Producers in the North will face greater numbers in the fall when pasture growth slows.

Ostertagia larvae living in contaminated pastures can be ingested by cattle and then shed through feces. The worms can survive in manure pats until precipitation provides a medium for the infective larvae to spread to the forage where the cycle continues as cattle feed on the infected grasses.

When hot weather persists, instead of completing their life cycle and reproducing, the adult worms stop laying eggs and the immature larvae stop development in the glands of the

abomasum. These larvae do not mature and become egg-laying adults until cooler temperatures arrive in the fall and conditions are more favorable in the pasture for the life cycle to be completed.

“The worms ‘hibernate’ in an arrested stage through the summer months. They can live for several months because of their slow metabolism,” Wikse said. “When conditions become favorable in the pasture for completion of their life cycle, they break out of the glands of the abomasum and develop into adults and start laying eggs.”

Deworming in the spring or early summer before arrested development occurs will help eliminate parasites and reduce pasture contamination, he emphasizes.

“If you don’t deworm right at the beginning of summer, you’re going to have a rude awakening in the fall,” Wikse said. “It makes it very important in this twice a year deworming program to use a wormer that has good activity against arrested larvae.”

When *Ostertagia* invade the gastric lining, it causes irritation and fluid loss, which can interfere with digestion and suppress appetite, one of the production losses associated with internal parasites.

Parasitologists estimate that 75 percent of production losses due to *Ostertagia* come in the form of reduced weight gain, reduced fertility and suppressed appetite. In fact, one researcher noted that appetite suppression accounts for 70 percent of reduced growth rate in calves alone. Therefore, deworming suckling calves has a definite benefit.

Deworming also has a positive impact on cow health and productivity, as mentioned before. In one of Wikse’s studies conducted along the Gulf Coast, cows were weighed three times (January, July and October). The dewormed cows weighed more and had better pregnancy rates.

“The greatest benefit of deworming, though, is in the youngest animals,” he said. “Immunity does develop over time, so it’s most important to deworm the calves, followed by the yearlings, and work your way down to the cows in order of importance.”

Other internal parasites that can cause cattle problems include *Cooperia*, *Haemonchus* and liver flukes.

Liver flukes are a major nemesis and are transmitted during cooler weather in the South and warmer weather further north. Mild temperatures and high moisture levels generally correlate with heavy fluke populations.

Cattle become infected by ingesting liver flukes that are attached to grasses in the pasture. After ingestion, the flukes migrate from the stomach and intestinal tract through the liver and eventually end up in the major bile ducts of the liver. Here they grow to maturity, then the fluke begins laying eggs that pass out of the bile into the stool, contaminating pastures again.

“Liver fluke infestation has an especially detrimental affect on reproductive efficiency,” Wikse said.

One reason, he noted, was that cows with liver flukes generally lose weight and have a lower body condition score (BCS) than cattle without flukes.

“BCS is closely related to whether a cow gets pregnant. We’re concerned about the negative impact on fertility through a lower BCS and the effect on the calf through lower milk production. This affects calf growth rate, leading to lower weaning weights. It also increases their susceptibility to a variety of infectious diseases.”

Liver damage can also result in condemnation of the carcass at slaughter, said Dr. Patricia Holland, DVM, formerly with the Texas A&M University College of Veterinary Medicine.

“This also sets up an environment conducive for problems like red water, sudden death and other effects of clostridial diseases.”

Attack Mode

Determining when to deworm and what type of anthelmintic (dewormer) to use is an important decision. Producers should choose a product that kills both adults and larvae,

effectively stopping the shedding of eggs and the life cycle of parasites and that also reduces pasture contamination.

There are different classes of dewormers that can work against adults and larvae, including macrocyclic lactones and benzimidazoles. A sulfonamide drug such as Clorsulon can be used effectively against adult liver flukes. Fall is the best time to treat liver flukes.

Whichever product is chosen, it's important to read the label carefully to understand the product's purpose and to ask several questions: When should it be administered? What type of persistent killing activity does that product have? Is deworming several weeks later with the same product to kill more parasites necessary?

Wikse and fellow researchers follow the advice of Texas A&M's parasitologist, Dr. Tom Craig, DVM, Ph.D. Craig recommends using macrocyclic lactones such as Ivomec®, Dectomax® and Cydectin®, (also called avermectins) in late spring deworming for both active and inactive parasites. Research has shown these products have a persistent killing effect, attacking parasites for two to four weeks and killing 99 to 100 percent of larvae.

Benzimidazoles such as Safeguard® and Valbazen® can be used in early summer (May to June in the Southeast) to target inhibited larvae and help clean up contaminated pastures. Deworming studies show these products can kill adults and 70 to 90 percent of arrested larvae.

A third category, Navarre notes, are the imidothiazoles/tetrahydropyrimidines, which include Levamisole, Morantel and Pyrantel.

The cost of deworming products typically ranges from \$2 to \$5 per head, but can be even less if a generic version is administered. However, use caution if choosing to administer some generic products, Navarre stresses.

"Producers should be aware that some generic dewormers may not be as effective as the brand name original products, and there is no way for a producer to know which generics are good and which aren't so good," she said. "Even though they are usually cheaper, if they don't work as well, it will cost producers in production losses.

"In my opinion, producers should stick to non-generic products. If they have questions about which products are generic, they should ask their veterinarian.

"There is quite a bit of misinformation out there about parasite resistance to dewormers in cattle," Navarre said. "Looking only at fecal egg counts does not tell you the whole story about clinically relevant resistance.

"There are a few documented cases of resistance in *Ostertagia*, and the situation should continue to be monitored. However, in most cases the resistance that is being reported is in parasites that, at this time, are not as significant when it comes to production losses in cow-calf herds. They can be significant in stockers."

Whichever product a producer chooses to use, both Navarre and Wikse advise deworming calves and cows to benefit herd health and future profitability.

"Not only does deworming the calf boost weaning weight, cows benefit as well," Navarre said.

Navarre emphasizes that deworming recommendations are very specific to the geographical area and to farm management.

"For example, if cattle in our area have been grazing ryegrass they may need to add a deworming in late winter/spring," she said.

Success of the deworming program can vary depending on ranch location and environment. Some producers have been hesitant to deworm calves due to cost and time. However, tweaking management schedules to include deworming when calves are rounded up for castrating, branding, vaccination and tagging can be done easily.

"Deworming can work for producers. It's just another tool to produce beef in a profitable manner," Wikse said.

SIDEBAR:

Important Considerations for Successful Deworming

1. When to worm – early summer and fall
2. What type of deworming product to use – macrocyclic lactones, benzimidazoles or imidothiazoles/tetrahydropyrimidines
3. What animals to deworm – cows and calves