

Beware of Internal Thieves

Arresting internal parasite infestations nets rewards of better performance, reduced illness and even higher quality grades.

by **Becky Mills**



PHOTO BY SHAUNA ROSE HERMEL

A matter of timing

While the list of internal parasites is a long one and varies according to the region and time of year, most of the pests share a common trait. With careful timing, they can be controlled fairly easily and economically.

"In a cow-calf operation, the best time to treat a cow is when she goes on grass," Rew says. "In a spring-calving operation, treat the calves around the Fourth of July when they become infected and start to contaminate the pasture."

Rew says the newer, longer-lasting dewormers help the cow work like a vacuum cleaner and clean up the parasite eggs from the pasture, then kill them.

At Chokey Plantation, Leesburg, Ga., a thorough parasite-control program is a must so the purebred Angus and commercial operation can reap the full benefits of its intensive genetic upgrading and embryo transfer (ET) program. Cattle manager Billy Lee deworms cows and calves with a broad-spectrum, long-lasting dewormer when he moves them from winter annuals to the warm-season Bermuda grass pastures.

While the ET program increases the need for a top-notch internal-parasite-control program, the frequent need to work the cattle, as well as the working facilities, makes the chore easier. "With our embryo program, we're able to run them through the chutes," Lee comments.

If a producer has the option, Gasbarre recommends refining the timing even more and waiting four or five weeks after the cattle have been moved to warm-season pastures to deworm.

"If a producer has a spring calving season, it will clear up the parasite infection about the time the young animals are getting on the ground but before they begin to pass larvae in large numbers," he explains. For example, if a calf is born in February, he says it won't pass significant numbers of larvae until May or June.

As for treating again in the fall, Gasbarre says it depends on a producer's situation. "At least treat the younger, growing animals — the weaned calves and replacement heifers," he recommends. "Usually, the younger cattle are on a lower nutritional plane in the winter, and the effects of the parasites are the greatest."

University of Minnesota parasitologist Bert Stromberg adds, "With a calf, if we can get rid of the parasites when we vaccinate, we'll get a better immune response."

A fall calving season may be another reason to re-treat cows in the fall. Gasbarre says there are two factors that help parasites thrive. The first is the presence of highly susceptible animals, which includes young calves, since they have no immunity and can

For something you can't even see from the outside, internal parasites can wreak havoc on your herd. From brown stomach worms to lungworms to liver flukes, the list of parasites and their dirty work is long and expensive.

For starters, take a look at *Ostertagia ostertagi* (the scientific name for the brown stomach worm). While many internal parasites are regional pests, *Ostertagia* unanimously gets veterinarians' and researchers' votes as the No. 1 economic parasite in the United States.

If the little suckers are camped out in your cow's gastrointestinal (GI) tract, they'll change the pH and affect digestion. In addition, they can cause leakage in the gut and circulatory system. They also put the brakes on your cattle's appetites, so they eat less — not a good way to keep up milk production, conception rates or calf gains.

That's just the beginning.

"The immune system is very, very fine-tuned," says U.S. Department of Agriculture (USDA) parasitologist and immunologist Louis Gasbarre, Beltsville, Md. "Parasites very strongly stimulate the immune system, and much of the regulation is lost."

With a heavy parasite load, the researcher says, the immune system gets sidetracked and may not be able to handle the viruses and infections that come your herd's way.

That still isn't all. Oklahoma research suggests that keeping the parasite load down through the stocker and finishing phases can help move more carcasses into higher grades at harvest.

"The steer can use the energy to lay down fat and muscle rather than fight disease," explains consultant Robert Rew, West Chester, Pa.



► Above: Based on more than 100 trials in the United States, consultant Robert Rew, West Chester, Pa., says the return on investment for deworming is about 2-to-1 for an adult cow, 3-to-1 for a replacement heifer, 5-to-1 in the feedlot and 10-to-1 for a stocker on permanent pasture.



PHOTOS BY BECKY MILLS

► At Chokee Plantation, Leesburg, Ga., cattle manager Billy Lee deworms cows and calves with a broad-spectrum, long-lasting dewormer when he moves them from winter annuals to the warm-season Bermuda grass pastures.

produce large numbers of eggs. The second is moisture.

“Nothing does parasites in faster than hot, dry conditions,” he says.

At Chokee, because Lee has both a spring and a fall calving season, he is often faced with the combination of young calves and mild, wet winters, so he treats the cows and calves again when he moves them from summer to winter pastures.

Out on pasture

Producers practicing intensive rotational grazing are another group who might want to look at a more frequent deworming schedule. Normally, it takes about three weeks for *Ostertagia* to complete their life cycle when they’ve been swallowed by a bovine. Then the eggs hatch en masse. Normally, producers with a rotational grazing system are moving their cattle back in a paddock after a 28-day rest. “That is the optimal time for the next larvae to be ready to go,” Stromberg warns.

He recommends a follow-up treatment about 28 days after the first deworming. In this situation, he says either class of dewormers will work. The older purge dewormers, like albendazole and fenbendazole, kill the parasites that are in the cow when she is dewormed. The newer endectocides, such as ivermectin, doramectin or moxidectin, continue killing for 21-35 days, depending on the parasite.

While the frequent rotations, higher stocking rates and tendency to graze the forage closer in intensive rotational grazing favor the parasites, Stromberg says the higher stocking rates also mean the manure

patties will get broken up. That works against the parasites.

While Chokee is not yet on an intensive rotational grazing program, Lee still gives the parasites fits. “We burn every pasture the cattle have been on and drag them, then aerate them,” he explains.

For stocker cattle on permanent pasture, more-frequent deworming also is logical. “You may want to re-treat them in eight to 12 weeks,” Stromberg recommends. “We see an improvement in growth and productivity.”

“When you move a stocker animal, treat him,” Rew agrees. “They are growing very rapidly, and their immune system is only halfway there.”

He adds, “If you are in the Southeast and have him on permanent pasture for 120 days, treat him twice. You’ll get a major payback.”

Fluke frustration

When a steer reaches the feedlot phase, his immune system generally has started to kick in. Still, treating on arrival can be a good idea. Besides the carcass benefits, Rew says, “Enhancing the appetite of the feedlot animal significantly improves weight gain and immune function.”

One word of warning, however: By the time a steer makes it to the feedlot, it is generally too late to treat for liver flukes. “By then the damage is done,” warns Greg Quakenbush, veterinarian for Pfizer Animal Health. “Treatment at this point in time generally won’t change the number of condemnations.”

Quakenbush says liver flukes are a

CONTINUED ON PAGE 142

Breed for parasite resistance

In the future, you may be able to deworm with selections from the semen tank.

The idea is not as far-fetched as you might think. Based on 10 years of work with cattle from the historic Wye herd, U.S. Department of Agriculture (USDA) immunologist and parasitologist Louis Gasbarre says there is a tremendous difference in the ability of calves from different sires to withstand the negative effects of internal parasites.

“Some sires will sire 20 or 30 calves, and all will have a natural immunity to parasites,” Gasbarre explains. He says only 50% of some other bulls’ progeny will be immune to parasites.

Since the Wye herd has been linebred for 13 generations, Gasbarre is able to trace back those animals, and he is using modern gene-mapping techniques to work on identifying the gene, or genes, responsible for immunity to parasites.

He says immunity to parasites is not unique to the Wye herd. “In a normal herd of 3- or 4-year-old cows, 70% to 80% will exhibit immunity to parasites, while 20% to 30% don’t show immunity at all.”

In mature cows, it is tough for the average producer to identify which 20%-30% are the ones responsible for helping parasites thrive. Once cows are more than 2 or 3 years of age, fecal egg counts — especially when done only once — don’t show a correlation between the number of parasite eggs and how badly the animal is affected by the parasites. The immune animals can pass the eggs right through their bodies without suffering any damage.

However, Gasbarre tests newly weaned heifers once a week to identify the cattle that have a natural immunity. To aid in his detective work, he moves the heifers at weaning from a practically parasite-free environment to a heavily infested pasture.

“Some are naturally resistant, some build up an immunity after three or four months, and some don’t build up an immunity,” he comments.

When he tracks down the gene, or genes, responsible for parasite immunity, he hopes it will change the way producers treat their animals. He says they can either deworm just the animals that aren’t immune to parasites or cull them and select for cattle with natural immunity.

frustrating parasite to treat. While the newer endectocides will kill other parasites, even in their inhibited stage, there isn't a drug labeled in the United States that will eradicate all stages of flukes.

Clorsulon and albendazole both will treat liver flukes, but that's only when they are in the bile duct of the cattle and not when they already have started their migration through the liver.

Since part of the life cycle of liver flukes

involves snails, Quakenbush recommends producers in fluke-prone areas ask their Extension agent when the snails hibernate, then treat a couple of months later. He says that is generally in August and September in the Southeast and in January in the Northwest.

Good odds


While parasite control for all the parasites does involve timing, treatment won't break

the bank. Deworming a 1,000-pound (lb.) cow with one of the broad-spectrum, long-acting, pour-on endectocides costs about \$3.60/head. Treating a 500-lb. heifer or steer for flukes costs about \$1.15/head.

Rew says the return on investment is impressive. Based on more than 100 trials in the United States, he says the return for deworming is about 2-to-1 for an adult cow, 3-to-1 for a replacement heifer, 5-to-1 in the feedlot and 10-to-1 for a stocker.

However, he qualifies, "That return on stockers is on permanent pasture. Wheat grass isn't as heavily contaminated, and the return won't be as good."

Gasbarre says the results of deworming he has seen vary from no increase in gain to a tremendous amount of weight gain. Still, he says, "A reasonable estimate, including very dry parts of the country to very wet, and including good producers and poor producers, would be 20 pounds per animal on young, growing animals."

Not bad for a carefully timed trip through the chute. 

Editor's note: *The American Association of Veterinary Parasitologists has a Web site with links to university parasitology programs around the country. Go to www.vetmed.ufl.edu/aavp and click on "Other Links."*



► Calves are highly susceptible to internal parasites because they have no immunity against them. Moisture is also a contributing factor to high parasite infestations.