

PARASITE CONTROL

Factors to consider in developing a successful strategy.

BY LORI GILMORE



ANGIE STUMP DENTON PHOTO

Grazing calves picking up high parasite loads may have limited pasture performance, resulting in lighter weaning weights.

There are few certainties in life beyond death and taxes. For U.S. cattlemen add internal parasite infestation to that list of guarantees.

“Producers need to understand that worms are present everywhere,” says Bill Epperson, South Dakota State University (SDSU) Extension veterinarian. Particularly once animals start grazing, it’s virtually impossible to remain parasite-free. Epperson adds, “It is not necessarily contact with parasites that is the issue; it’s how many.”

In the past, producers may have reserved treatment for clinically sick or poor-doing animals. Today, to gain a competitive edge, many are taking a more proactive approach by strategically deworming the entire herd.

University experts agree that cow-calf producers should develop a game plan to prevail over parasites. However, most prefer not to make sweeping recommendations and believe no single program serves all situations. For this reason, cattlemen should consider the following variables and develop a treatment strategy based on individual farm or ranch needs.

■ Monitoring and measuring

In contrast to external pests such as flies, lice and mites, which can be easily identified when checking the herd, early signs of internal parasite infestation are often difficult to detect. Grazing calves picking up high parasite loads may have limited pasture performance, resulting in lighter weaning weights.

Infected cows, particularly younger ones, may have poor reproductive performance. Any parasitized animal may show increased susceptibility to secondary invaders, including pneumonia and shipping fever.

“Producers need to first measure herd performance in order to fine-tune their programs from year to year,” says Jim Floyd, Auburn University (Alabama) Extension veterinarian and interim

chairman of the Animal and Dairy Sciences Department.

His recommendation includes measuring basic production parameters, including weaning percentages and weaning weights. “In cow herds, generally, both pregnancy rates and weaning weights respond to a deworming program,” Floyd says. Economic

gain is realized in cow-calf businesses through increased weaning weights and the number of females bred and later weaning a calf.

■ Considerations: parasite life cycle and climate

“The primary internal parasite of cattle in North America is *Ostertagia ostertagi*,”

says Doug Hutchens, a clinical assistant parasitology professor at the University of Illinois College of Veterinary Medicine. Also known as the brown stomach worm, *O. ostertagi* can be transmitted in most areas of the country, particularly in regions with adequate rainfall or irrigation.

To get a handle on parasites, it’s essential to understand the life cycle and survival patterns. Across the country larval numbers tend to go up in the spring, down in the summer, and start to rise again in the fall.

According to Hutchens, if conditions are right — warm temperatures and adequate moisture — eggs develop into infective larvae. Animals that are grazing, particularly in times of growing pastures, easily pick up parasites attached to forage blades.

Varying climatic conditions across the country can impair parasitic progress. Hot, dry temperatures, which produce “brown-out” effects on pastures, will deter development in the southern part of the country, according to Hutchens. Likewise, in northern regions frost will kill some larvae.

“However, parasite eggs overwinter on pastures,” Hutchens says. “Those shed by animals in the fall may be viable and infective in the spring.”

In hot, dry summers and in cold winter environments, surviving larvae become arrested and live within the animal’s abomasal wall. The hot, dry period of arrest is generally true of the South, while the cold winter arrest is more typical in northern climates. During this time of inactivity the parasite is neither feeding nor laying eggs. As environmental factors once again become favorable early the next grazing season, the dormant internal parasite comes out, develops into an adult, and begins feeding and producing eggs.

■ Pastures and other management factors

Pasture condition and

grazing management are key to parasite mastery, according to Epperson. Not only does the forage provide the vehicle for the worm to be carried to the animal, it also provides protection for the parasite in unfavorable weather conditions.

Pasture condition and quality of forage should be considered when developing a parasite-management plan.

“Continuous-grazed situations using the same pastures year after year put cattle at higher risk than a rotational system or a move to a new pasture that was previously in another crop rotation,” Epperson says.

Hutchens agrees, stating a basic rule of parasitology, “Permanent pastures perpetuate parasitism.”

In addition to grazing management, stocking density is also an important variable to consider when formulating a parasite-management plan. As stocking density increases, so does the potential for losses due to parasites.

■ Herd composition

Younger animals, including calves, stockers and replacement heifers, pose the greatest risk for parasitic infection. Larvae are ingested at a great rate by young calves as soon as they begin feeding on a pasture. These immature animals are most susceptible since they have yet to develop natural resistance.

“At this point, the calf doesn’t have any resistance to retard parasite development,” Floyd says. “These young animals serve as ‘biomultipliers.’” Pasture contamination is increased when grazing calves pump out massive numbers of eggs back onto the pasture. “It’s a way that worms have developed as a survival strategy,” he adds.

As animals mature, they may build a level of immunity.

■ Veterinary advice

In addition to producers’ reviewing the listed variables, Extension specialists recommend they work closely with a veterinarian to assess which parasites, external and

internal, are causing problems, the parasite load, and a reasonable treatment method.

According to Epperson, producers need to utilize local professionals as a resource for their own herd health programs to determine the payoff for parasite control.

“It is important to get an idea of what is happening within your herd,” Epperson says. “Local veterinarians have the opportunity to get on many ranches and farms and develop a pretty good sense for regional issues.”

“A good parasite-control program is an integral part of an overall herd health program,” Floyd says. “The goal for parasite management ought to be economic control.” Realistically, he says, a producer should not expect to eliminate 100% of all parasites.

When discussing a total program, a veterinarian can pick out variables and help identify weaknesses in a program. Floyd encourages producers to pay their veterinarians for their advice

and to discuss changing management practices, in addition to other factors that will affect the herd.

A veterinarian also can offer product suggestions. Today producers have several options, including injection, pour-on, medicated blocks, loose mineral application and boluses.

Finally, as part of their service, some veterinarians will offer fecal egg counts. This tool can help veterinarians and producers monitor herd response to deworming programs. This test is best used as an indicator of parasite transmission on pastures as opposed to testing individual animals. Often it’s the best method to establish a baseline prior to carrying out a parasite-control plan.

■ Strategic deworming

Once a producer determines the need for parasite control, the question becomes when is the best time of the year to achieve effective parasite control — spring, summer, fall or winter?

“The best time for strategic deworming is when the most worms are inside the animal and very few parasites are on the pasture,” says Floyd. “That way you can clean out the animal, and it won’t immediately contaminate pastures.”

In the South, theoretically, the most strategic time to deworm would be in the middle of the hot summer. At this time larvae of most of the internal parasites are most susceptible to the environmental effects of drying and heat, according to Floyd.

Even though this could be an opportune time for parasite control for southern cow-calf programs, this management practice rarely is carried out during the dog days of summer. “Realistically, most producers are not going to handle cows during this stressful period and



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are going to only work the herd a couple of times each year,” Floyd says.

Another alternative is treating southern cattle that graze permanent pastures in early summer, coinciding with vaccination plans. Treating in early summer augments the seasonal drop in the number of larvae on pastures and removes worms from cattle.

The extended grazing season and forage base in the South also offers another advantage. “If a producer was going to put cattle out on winter grazing, the best time [for deworming] might be before animals go on winter pasture,” Floyd says.

In northern states spring deworming can play a critical role in parasite management. According to SDSU’s Epperson, “There has been more interest in our area recently to deworm cows and calves at turnout in

the spring.” He says this plan can prevent loss of production in young calves, while basically stopping parasite buildup on pastures.

“Deworming in the spring at turnout is an attempt to thwart parasitic infections in cattle,” Epperson says. “It can be accomplished by one or two treatments at or near turnout.” Treating cattle at turnout to pasture, then repeating the treatment a few weeks later, allows the cattle to harvest the larvae that survived the winter and prevents the larvae from reproducing in the cattle.

Fall deworming is another common option in many parts of the country. This practice effectively eliminates parasites in animals, but it does not prevent larvae buildup on pastures. In many programs fall deworming traditionally is done when cows are being worked.



“Permanent pastures perpetuate parasitism.”

— *Doug Hutchens*

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“In the past it fit well with the older types of deworming products and programs,” Epperson says. Fall deworming is still important in many parts of the country, but alone it may not result in optimal gains, according to Epperson.

Traditional spring and fall deworming schedules can work;

however, spring and fall may not prove to be the most strategic times to kill parasites in the animal and on the pasture. Beef producers should assess their particular programs, call upon a qualified cow-calf veterinarian for assistance, and together develop a strategic plan for parasite control. 