



Profit Thieves

Controlling lice, grubs and other winter parasites in cattle can increase profits.

by Heather Smith Thomas

Parasites are profit robbers, and a large number of internal parasites take a toll on cattle performance. During winter, external parasites like lice can be hard to see unless you confine the affected animal, part the hair and look closely.

Lice

These tiny parasites are a common winter problem for cattle. Heavy infestations, especially sucking lice, rob nutrition from cattle just when

they need it most. A lice-infested animal may lose weight and become more susceptible to disease. The irritation and itching from chewing lice results in hair loss and less insulation against cold weather and is hard on facilities when cattle are constantly rubbing on fences.

Thomas Craig, DVM, a professor in the Department of Veterinary Pathobiology at Texas

A&M University, says the number of lice, especially sucking lice, has dropped since ivermectin came on the market.

“I was trying to find some sucking lice for a project teaching our students and drew a blank,” Craig says. “However, chewing lice are doing well in places and with weather changes and movement of livestock

they are thriving. By contrast, in our area cattle grubs almost disappeared, but the past several years they have come back in areas where they were not seen for 20 years, possibly due to livestock movement.”



Sucking lice



Chewing lice



A lice-infested animal may lose weight and become more susceptible to disease.



It's important to treat lice in late fall to drive the population down before cold weather.

Joe Campbell, DVM, senior veterinarian, cattle professional services, Boehringer Ingelheim Vetmedica Inc., in Florissant, Colo., says the two types of cattle lice — sucking and chewing — both reproduce at a more rapid rate on the animal during cold weather. However, in hot weather, the population of lice on an animal diminishes substantially on its own.

He says when treating for lice, it's important to treat as late as possible in the fall to drive the population down before cold weather so there won't be a big increase in lice numbers before spring. "Otherwise, if we treat too early, lice numbers will build up again and we'll have to treat again," he explains.

Campbell says most of the products producers use for lice control are effective, but none will kill 100% of the lice on all cattle.

"There may be some left, and those lice will start to reproduce again," Campbell says. Some animals seem more susceptible to lice and serve as carriers to spread lice to others in the herd.

His advice to producers is to use a pour-on product because it will control both sucking and chewing lice. Injectable endectocides that kill internal and external parasites kill only the sucking lice that feed on blood and will not affect the chewing lice.

Large numbers of sucking lice affect cost of production because they can retard the growth and hinder the health of an animal.

"Chewing lice are more responsible for a lot of the problems we see, however, because the cattle are rubbing on everything, and losing hair," Campbell says. "This is hard on facilities; the cattle may knock down fences with their constant rubbing."

He instructs that once a group of cattle has been treated, producers should not introduce new animals to the group unless the new cattle have been treated.

"Even putting treated animals into a corral where there were untreated animals may provide a chance for exposure, there may be a few viable lice still on the hair that was rubbed off on fences," he says. "During cold weather, however, the lice won't live very long apart from a host."

If cattle start rubbing again in late winter, they may or may not need retreatment, depending on the severity of the renewed lice population and how late in the winter signs of lice are noticed.

"If it's still early, such as February and early March and there is still a lot of cold weather ahead, it pays to retreat them," Campbell explains. If it's late March or early April and the days are getting longer and warmer,

the lice population will soon diminish on its own.

Campbell says using a pour-on product in late winter will control lice for the remainder of the winter. He encourages cattlemen to discuss treatments with a veterinarian.

Grubs

At a veterinary conference in 1994, 50 veterinarians were asked which cattle parasite ranked as the number one concern. The answer was cattle grubs. In earlier years, these pests were widespread. Then, for a while, grub problems decreased with the use of modern pour-on and injectable products.

But, in some regions, grubs are making a comeback and, in some cases, have been found in herds that were reportedly treated for parasites. Whether the grubs have developed some resistance to the products or whether producers have become complacent is unsure.

The fact remains that grubs can have a negative effect on cattle performance. Studies have shown that calf gains may decrease 0.10 lb. a day or more because of grubs.

Heel flies, the parents of cattle grubs, pester cattle, hovering and darting around their legs as they lay eggs on the leg hairs. They are most active early in fly season, which means during winter in the South, early spring in the central states, and spring through summer in the Northern states. Heel flies attack northern cattle during May, June and July.

The heel flies resemble honeybees in size and shape. Like the bot fly that bothers horses, these aggressive flies do not feed as adults; individuals live about one week — just long enough to mate and lay eggs. The heel flies do not actually land on cattle, but the females hover close to the legs as they attach their eggs to individual hairs.

Once the egg is laid and glued to the hair, it hatches in three to seven days and the tiny first-stage larva crawls down the hair and burrows through the skin of the leg and then spends two to four months migrating up through the animal's body.

One species travels to the esophageal wall and the other goes to the spinal column where they lodge and grow for a while; then both proceed to the animal's back to spend their second and third stages,



Cattle grub

the warble or grub stage, in the tissue beneath the skin of the back, making breathing holes through the skin.

After four to six weeks of rapid growth in the grub stage, the larvae emerge through the breathing holes and fall to the ground where they pupate. Depending on weather conditions, adult flies then emerge from the pupae in one to three months, completing the one-year life cycle

and are ready to seek out cattle on which to lay their eggs.

Grubs first start appearing in the backs of cattle about mid-September in Southern states and January or later in Northern regions. They emerge through the skin in November in Texas and not until the first part of March in Montana.

There are minor losses in daily gains in cattle, but the main losses

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Liver flukes

In regions with liver flukes, they should be included in a parasite control program, says Thomas Craig, DVM, a professor in the Department of Veterinary Pathobiology at Texas A&M. Time the treatment for flukes at the proper stage in their life cycle to help prevent further contamination of pastures.

Cattle ingest these tiny parasites as cysts attached to plants that grow in or near water. The tiny flukes are released from the cysts during digestion in the cow. They bore through the gut wall and migrate to the liver, where they feed and destroy tissues and then migrate to the bile ducts, where they grow into adults and lay eggs. They remain there, laying eggs.

Eggs travel with the bile and are passed in manure. If manure ends up in a wet area, the eggs hatch into free-swimming miracidia and search for snails. They penetrate the snails that inhabit marshes or wet areas and undergo another phase of development within the snails. Later they emerge from the snails and attach to vegetation and encyst to be eaten by cattle and start the cycle all over again.

To control flukes, cattlemen need an effective product that is administered when the flukes are becoming adults. "Here in the South we get the best bang for our buck in treating liver flukes in late fall, going into winter," Craig says.

"Even though transmission of flukes is earlier in the year, the drugs are not effective against immature stages. So we have to wait awhile until they are more vulnerable. It takes about 12 weeks before a fluke starts producing eggs — from the time the animal picks up the infection. The egg-laying stage of the life cycle is when the fluke is most vulnerable to treatment."

Some drugs like Ivomec-Plus will get them at that stage, according to Craig. Albendazole works, but it shouldn't be used too early.

"One of the problems in dealing with liver flukes is that the drugs presently available in North America, used at prescribed dosage, will only kill adult flukes in the liver," Craig says. "They do a pretty good job but the flukes have already done their damage in the animal by the time you kill them. Most of the damage is done during their early migration through the liver; we don't have an effective drug to kill them during that period of their life cycle."

When cattle are treated for flukes, what's actually happening is that producers are treating to protect snails so the life cycle won't be continued. "Then there won't be as many flukes developing in snails to be passed on and picked up by cattle," Craig says. Snails are the intermediate host and necessary to the life cycle of the fluke.

"We try to treat at a time that we can lower the potential for further contamination of the pasture so the snails don't become infected," Craig says. "Thus we have to know when the pastures are at highest risk in a particular geographic area. In northern regions, autumn is when the cattle are picking up the greatest numbers of flukes."

The larval migration and maturation within the cow takes another eight to 15 weeks, so eggs may not show up in manure until December or January or even later. The best time to treat flukes is after the flukes have matured enough to be situated in the bile ducts but have not had time yet to lay very many eggs. **HW**



Liver flukes



PHOTO BY SHEILA JENSEN

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occur in hide damage and excess trim from the back area where the migration of the grub has occurred. It has been estimated that feedlots lose more than \$2.50 per head in cattle that have not been treated for grubs.

Though traditional recommendations are to not treat cattle for grubs during winter because of side effects due to grubs dying next to the spine, many feedlots prefer to treat for grubs even in winter since side effects have been minimal.

Veterinarians have witnessed a small number of “downer” cattle following grub treatment in winter months – usually occurring November through February – but with treatment this type of reaction proves to be only a small setback for cattle.

Control of adult heel flies is nearly impossible because of their short lifespan. Control is aimed at destroying first-stage larvae within the cattle before they travel to the animals’ backs. This approach also ensures flies will not hatch out the next season, preventing future infestations.

The most effective treatment for grubs is the use of systemic insecticides, which are absorbed into the body to kill grubs wherever they are located at that time, administered as a pour-on, an injection or a spray.

Ideally, cattle should be treated after heel fly season is over. Treatment in northern regions should be given before December; treatments in warm Southern states, no later than mid-October.

Producers should seek veterinarian advice for the best time of year for grub treatment in various regions.

Worms

Worms are another parasite that can hurt profit. Craig says the best time to deworm may

vary from region to region, depending on climate.

“Here in Texas, winter is a time of year the worms are thriving on pastures because it’s cool and moist but not too cold, whereas in northern parts of the U.S. the worms can’t survive outside the cow so they go dormant during winter and aren’t laying very many eggs. Most winter days here, our temperature gets up to 50 degrees, and worms do well. What they can’t stand is 90 to 100 degrees; they go dormant in the cow during summer heat. So summer is the best time for us to deworm—when it’s dry and hot. In the north, winter is a good time to deworm.”

The transmission of worms can be slowed if they are killed while they are dormant.

“I think *Ostertagia*, the brown stomach worm, is the most important parasite in cattle, in most of North America,” Craig says. “It’s the only one that’s important in adult cattle and can be devastating to young stock, as well. Most of the other internal parasites seen in cattle are not an issue in adults.”

He says by the time cattle are 2 years old, they have developed some resistance to most worms and have low numbers. When a cow is 4 or 5 years old, she’s either developed enough immunity to keep parasites at a reasonable level, or she’s been removed from the herd because she’s not doing well.

Ranchers usually don’t see clinical signs of worm infection because the signs are subtle.

“One of the main things this worm does to the host is reduce appetite,” Craig says. “If cattle don’t eat as much, they don’t do as well.” Deworming at the proper time of year might improve production.



Ostertagia brown stomach worm

Ostertagia goes into arrested development, or the dormant stage, and is embedded in the stomach wall in the abomasum when environmental conditions are not conducive to larval survival in pastures. The dormant worm emerges again later to mature and lay eggs when conditions improve.

“In the south, just prior to when it becomes hot and dry, most of the immature worms go dormant instead of becoming adults. With fall rain they resume development,” Craig says. Then they are ready to lay eggs that pass out with manure at a perfect time for hatching larvae to thrive and to migrate onto forage plants near the manure pat.

“If you are in an area with cold winter and arrested development, the only way the worms can survive in any numbers is inside the host animal. If we treat the cow during winter with a drug that’s effective against that arrested state, we’ve done the job,” he says.

Craig says cattle can tolerate a few worms, but heavy infections are detrimental. Worms are generally more devastating in young animals because they have not yet developed much immunity.

A young calf may not pick up worms as readily as an older calf. “The cow acts as a biological vacuum sweeper to pick up parasites from a pasture, and the calf doesn’t pick up as many. But

if you have a lot of older calves shedding worm eggs, this can be a recipe for problems,” he says.

Which animals should be dewormed?

Craig prioritizes which cattle should be wormed by choosing the ones most likely to have problems.

“Top priority would be bulls, of any age,” he says. “Their hormones make them think they are ready to breed cows at any time of year, and these hormone levels can in some ways depress the body’s immunity against parasites.”

Bulls tend to have higher worm egg counts than the herd average, even though they are not sick or adversely affected by this decreased immunity.

Another vulnerable group would be first-calf heifers. “They are still growing, feeding a calf and more stressed than adult cows,” he says. “If we’re trying to reduce the risks for anthelmintic resistance, yet still want the best bang for our buck in deworming, bulls and first calvers would be the two groups to deworm. Second calvers would be next, but not as crucial.”

Weaning age calves also benefit from deworming. “This should be part of their backgrounding,” Craig says

A producer might feel that older, thin cows might need dewormed, especially the ones that might have been kept for one last calf or kept to get more weight on them before sale. “Actually, this group would still have pretty good resistance to worms, but if you are in a fluke area it would be worthwhile to treat them for liver flukes,” Craig says. **HW**

