

# Dewormer-Resistant Parasites

## Threaten Herds

### Georgia Breeder Fights Back

by Gayle M. Woodsum

**T**racy Pearson always loved the rain. She saw it as a means of renewal, a bringer of life. But when the late summer of 2005 brought rain every day to her Ellijay, Ga. ranch, home of Pearson Pond Llama Company, it would take time and a gradually tragic turn of events for her to realize that this time, the rain was bringing death.

During routine herd checks, Tracy, her husband, **Jack**, and their ranch crew began to see some unexplained weight loss in a few of the llamas. In accordance with their standard response to such problems, they conducted thorough and immediate evaluations on the animals, following their own years of learning and the guidance of their veterinarian. Not only were they stumped by the unexpected drop in weight in the llamas, they were quickly stunned by a rapid, continued deterioration in their overall condition. Some of them would end up losing as much as 40 pounds over the course of just a few weeks.

Within two weeks of the first signs of lost health in the Pearson llamas, the first of them was dead. The concern over an undiagnosed problem plummeted into the beginning of what Tracy describes as an “absolute nightmare.” It took necropsies on three dead llamas before the cause of death was determined, and a total of nine of their precious animals would die before the crisis was abated.

They were dying because either extreme anemia or low protein in their systems was causing their livers to become fatty. They were being killed by parasites on a ranch where the recommended procedure for preventing such problems had been followed with great care.

“We’ve always done exactly as we’ve been told [by experts in camelid management]. We regularly treated the llamas with Ivomec™ and Dectomax™, for both standard llama parasite control and as a guard against the meningeal worm that can come from the whitetail deer we have here.”

The diagnosis was a shock. The Pear-

sons are not newcomers to the llama world. They have bred and raised llamas for over 20 years. They have the experience, resources and dedication to be meticulous in caring for a show-winning herd of 170 animals. They have always carefully followed well informed veterinary advice.

#### Recipe for Disaster

What the Pearsons didn’t know was that for years, circumstances had been gathering and conspiring to set them and their llamas up for disaster. It all came together last summer.

• **Rain.** It was unusually wet in the southeastern United States last summer. One of the side effects was that the excessive moisture floated parasites to the top of pasture grass where they were easily ingested by animals such as llamas and alpacas. Normally, parasites range close to the ground and are avoided by foraging animals that are unlikely to graze at the root of their feed as long as ample pasture is available to them.

• **Heat.** Accompanying the rains was the heat of the season that lingered well into September. The Pearsons, like all good llama caregivers in warm climates, provided fans in their barns to keep the animals cool. Unwittingly, this created congestion in a herd that has more than ample roaming room available to them. The llamas gathered together in close groups to take advantage of the cooling system. As a result, they defecated in fewer, communal llama bean piles than they would have had they been spread out across their pastures all the time. In suit, the parasites gathered in more congested numbers as well.

• **Resistance to Dewormers.** The final ingredient for the unanticipated parasite invasion in the Southeast this year, was the very thing camelid breeders thought was protecting them: the use of dewormers. A phenomenon becoming known to goat and sheep breeders in recent years, parasites have begun to develop a resistance to Ivomec™ and Dectomax™, the primary dewormers used not only on them against

stomach parasites, but on members of the camelid family as well.

#### The Army that Flourished

As a result of all three factors coming together, the parasites that invaded the Pearson ranch and numerous others in their part of the country, were primarily the *haemonchus*, a particularly deadly, blood-sucking stomach parasite, and coccidia, a protozoan parasite known to inhabit wet areas with congested animal conditions, and usually problematic in young or previously compromised llamas. With the conspiracy of circumstances described above, the Pearson ranch that had never before struggled with any of these problems, and in fact had never before had a case of coccidia, became a helpless victim.

While the human caregivers raced against time to find out what was happening to their llamas, the parasites were advancing undaunted. The *haemonchus* were laying up to 5000 eggs a day, not flinching over the fact that they were taking on a herd that had regularly received dewormers recommended for llamas, because they had built up a resistance. Once inside their targeted host, the *haemonchus* took its fill of blood from the llama; as much as 1/4 to 1/2 cup of blood a day. The llamas suffering from coccidia were losing mass amounts of protein. Both conditions resulted in overtaxed livers that turned to fat. At that point, the affected llamas refused to eat, completing the cycle that would sign their death warrant.

#### Devastation is the Mother of Expertise

Tracy Pearson is not a shrinking violet. Confronted with a lethal attack against her llamas, she rose to the occasion by fighting for information and fighting for more until the wealth of knowledge within her gave her the weapons and confidence she needed to save her herd.

She is emphatic when she says, “The reason we have llamas is that we have a passion for them. It’s the passion that makes us

go on, not the money or the business of it. I feel such an obligation to the llamas. We're in this for the long haul."

Every step of the way, Tracy worked with her own trusted veterinarian, mountains of research materials she began to collect from both small ruminant (goats and sheep), as well as camelid research centers across the country, and her own gut instincts. "It makes sense that we can inject our animals with the toxins of the same types of wormers for only so long. Of course the parasites are going to develop a resistance. There is now research out there trying to develop something new, but my understanding is that it will be seven to ten years before we can expect to see a new dewormer on the market."

The Pearsons did not have years to find an answer. Their llamas were dying in a matter of weeks. What they did was take all the factors they had discovered about their situation, including knowledge of their own llamas, and step into action for both the short and long term.

### **Saving the Affected Animals**

1. The first rule, according to Tracy, is to "work fast." Blood was drawn on any llama that appeared to be losing weight or general condition, because laboratory tests are capable of revealing the warning flags: anemia and/or low protein.

2. Whether worms or coccidia were found, each animal was treated under medical guidance with whatever medication was available that might possibly be effective. Coccidia is not taken care of with dewormer, but must be treated aggressively with sulfadimethoxine drugs.

3. Time being of the essence, the primary goal with the stricken animals was to keep them eating. Explains Tracy, "They must eat so that their organs won't shut

down. Nutrition was crucial. We fed, fed, fed."

The Pearsons began adding every supplement and eating enticement they could find, from a smorgasbord of high potency minerals to hay mixed in with condensed tannins. One of the results of recent research on small ruminants is that short-term consumption of a forage containing condensed

needed to face the reality of the Pearson's changed world. Tracy talks of hard-won lessons that have turned her into an ever-vigilant, constantly researching breeder learning from local veterinarians, experts around the world and the llamas in her own pastures. Management at Pearson Pond Llamas looks very different from how it looked in the past. It is no longer as simple, nor as naive, as regular deworming.

• **Find the Parasites.** Rather than blanket treatment of an entire herd, a repetitive practice that has caused parasites to become resistant, Pearson llamas are treated for what parasites are found. This means that regular microscopic checking of each individual llama's feces is mandatory, with the understanding that one sample may be negative while a sample from just a few inches away may reveal the presence of parasites. It is crucial that only fresh feces be used and correctly identified with the llama that dropped them. Even so, "I am now very cynical about clean slides [those where no parasites are found]," says Tracy.

At press time, the Pearsons were still running individual fecals every two weeks on their entire herd.

### • **Consider Changing Deworming Products.**

When deworming is deemed necessary, Tracy has taken some bold steps which, she warns, should be individualized to each llama herd's needs, and only under the direction of a qualified veterinarian. Again following research done on small ruminants with similar problems, Tracy now uses a common equine, oral wormer placed carefully at the back and to the side of the llama's throat for ultimate efficacy.

In Georgia, as in other parts of the coun-



tannins reduces fecal parasitic egg output.

4. Round the clock care, attending to the stress and overall needs of sick animals, resulted in the Pearsons being able to save the lives of 11 llamas whose parasite infestation had led to life-threatening fatty livers.

### **Long Term Answers**

Saving the individual llamas that would have died without immediate and intensive intervention was only part of the solution

try where whitetail deer thrive, the Pearsons must also be concerned with the meningeal worm, for which Ivomec™ and Dectomax™ are the only currently known preventive medicines. The Pearsons do still utilize this treatment to prevent meningeal, but not as frequently as in the past. They have added perimeter border fencing to further protect the llamas from potential contact with the deer.

• **Be Fastidious in Deworming Procedures.** The Pearson llamas to be dewormed are fasted the night before and not fed until the afternoon following administration of the dewormer. They are kept on a dry lot for 24 hours following treatment.

• **Increase Quality and Type of Feed Supplements.** Hay with high tannins present is mixed into the hay consumed by the entire herd, as discussed in the section on the healing of llamas that had fallen ill. As for llama minerals, the Pearsons worked with a local university to create specialized minerals of their own design, increasing ingredients they now believe all llamas need counter the negative effects of deworming programs as well as to help fight off parasites themselves. Working along with one of the top camelid veterinary experts in the country, they included probiotics, detoxins, extra vitamin C and B and thiamin to the final product. They took extra time with the laboratory to be certain balance was achieved and one ingredient did not cancel out the other. Naming it Masterplan, the Pearsons plan to make the mineral available to other llama owners.

• **Cleanliness is Crucial.** Barnyard and pasture cleaning is even more meticulous than it had been in the past. Every pasture is cleaned every day, with emptied fecal pile areas burned on a regular basis. Barn floors are washed every day, and barnyard fecal areas are cleaned with a 1:10 Clorox™ to water solution every day.

### On Surviving and Speaking Out

There is audible relief in Tracy Pearson's voice when she says that her herd is now back to being the bright, robust group of llamas she has always loved. "But there is no silver bullet," she adds. Now that the immediate emergencies are slipping into the past, the physical and emotional exhaustion has caught up with her. And yet, the battle goes on in places beyond her beloved ranch.

The Pearsons were not the only llama

owners to be struck by this tragedy in 2005. Others in the southeastern United States also struggled and suffered heartbreaking loss of life, but have chosen not to speak about it. There is the fear of judgment against an entire breeding and llama raising program that keeps many llama owners silent about what has happened to them. Possibly worse, there are those who refuse to believe such a thing could ever happen to them.

So, what made Tracy and Jack Pearson go public about their personal suffering? Insists Tracy, "No one should ever have to go through what we did. It was almost more than we could bear. We knew that if we could help prevent this from happening on such a terrible scale to someone else, we had to try. The reality is, parasite resistance to dewormers has been known to be occurring in small ruminants around the world for the past four years. It's coming to llamas and alpacas now, and it will find its way across this entire country at some point in time."

With determination and courage, Tracy sent out an e-mail to every person and group she could think of, explaining what their ranch had been through and what they were doing about it. "It was very hard to send out that letter," she admits. "Part of me thought it was like committing professional suicide to admit our ranch had gone through such an ordeal. But then I realized that over the entire 20 years in this business, the one thing we've always had is our good reputation." It was something she and Jack counted on.

Response to Tracy's e-mail was immediate and impressive. She heard from local people struggling similarly, who said they had been afraid to tell anyone. She also spoke with people from across the country who have seen similar problems at various times in recent years. They contacted her from Michigan, Washington, New York, Wisconsin and beyond. They shared stories and asked for help from this woman who continues to grieve for the beautiful llamas she loved and lost.

"I do what I can to help, but I don't give advice on things like what kind of wormer to use. Everyone must work with their own vet who knows what goes on in their own management program and area of the world."

The hardest part of all for Tracy now, is seeing the denial in people around her. "I guess some people have to do their own bleeding before facing difficult truths," she says.

Tracy Pearson has done more than her share of bleeding. "I used to think I was tough," she says. "But we lived through a nightmare that broke my heart and hit me with depression, anger and fear."

The bigger story, perhaps, is that it also hit her with inspiration that helped bring her llamas back to health, and continues to help others avoid similar heartbreak. ▲