Anaplasmosis. It is caused by a rickettsial parasite, *Anaplasma marginale*, which invades red blood cells in cattle, causing anemia, fever, abortions, and even death. Most often, it is transmitted by ticks and biting flies. But contaminated needles, as well as dehorning and castration equipment, can also spread the disease.

Anaplasmosis can cost producers more than $400 per head. There are documented cases in each of the 48 contiguous states, so the cattle industry could be shelling out as much as $300 million a year because of this disease.

Research also shows that if anaplasmosis infects a previously uninfected herd, producers can expect a 3.6 percent drop in calf crop and a 30 percent increase in cull rate. Further, producers should anticipate a 30 percent death rate in adults showing signs of disease.

One of the tricky things about this disease is that it often doesn’t display symptoms, especially in younger animals. But once it is contracted, it remains in the animal’s body for life.

“Unlike other diseases, the younger the animal, the less problematic the disease is,” explained John Currin, DVM, associate clinical professor at Virginia Tech. “If it’s a young calf, you usually don’t notice they are sick, even if they have it. Then, they develop some immunity to it. Yearlings look bad for a day or two, then they get over it. It’s the adults that have never been exposed to it who get sicker and have higher death losses. It’s backward from most things we deal with in cattle.”

So, Dr. Currin says, in many herds the disease becomes endemic, but at low levels, so it doesn’t cause serious problems. However, significant issues can arise when a new animal, such as a bull, is brought into a herd not previously exposed to anaplasmosis.

“They could wind up with a big disaster,” he said. “That’s what we deal with here in Virginia. We have pockets where it is endemic, then areas without any disease. So, you have to be careful when trafficking animals from one area to another.”

Currin clarified that the disease is not spread through breeding, only through blood contact, and it is not passed on to progeny. The most important prevention strategies therefore revolve around minimizing that blood-to-blood transmission.

When introducing new animals into the herd, Currin suggests testing for anaplasmosis, especially if the purchase is from an area where anaplasmosis is prevalent. The Southeast, generally the Deep South where low-lying areas are common, is basically anaplasmosis country, Currin says. So, when producers from the north or Great Plains acquire animals from the Southeast, for example, they should test for the disease.

He admits that the blood test for anaplasmosis is “not a particularly good one,” with a few too many false positives and an accuracy rate of only 80 percent. At the same time, Currin believes a blood test can provide additional information to assess health.

Another way to reduce the incidence of anaplasmosis is to follow good integrated pest management practices, as well as sound sanitation techniques to avoid cross contamination when vaccinating, dehorning and castrating cattle. That includes changing needles and sanitizing equipment between animals.

“If you are castrating or dehorning calves, have a bucket of water with disinfectant in it to put the equipment in between uses,” Dr. Currin suggested. “The anaplasmosis parasite is a relatively fragile organism which lives in the red blood cells, so if you get the blood off, you probably won’t spread the disease from animal to animal.”

Chlortetracycline (trade name Aureomycin®) is often administered in minerals, either year-round or during the vector season to prevent the spread of disease, Dr. Currin said.

Purina Animal Nutrition provides Aureomycin® in several of its Wind and Rain® STORM® mineral supplements. Your herd veterinarian, Purina dealer or your local Purina representative can provide additional information about this strategy, and of course work with you to customize a plan for your herd.

When anaplasmosis infects younger animals, they will usually get better in a week or so, sooner if they are treated with injectable oxytetracycline.

Older animals are a different story. If not previously exposed to it, they show classic signs of being short of oxygen, Currin explained, because blood cells are being broken down. Older cattle may be anemic and can’t get enough blood to the tissues and are breathing hard. In severe cases, cattle will become jaundiced.

“The disease progresses rapidly,”
Grass tetany kills—and kills quickly. Commonly called grass staggers, wheat pasture poisoning or lactation tetany, this nutritional disease can lead to death in just two or three hours if left untreated, according to Ron Lemenager, Ph.D., PAS, professor of animal sciences at Purdue University.¹

The symptoms, caused by low magnesium blood levels, start with trembling and twitching muscles, excitability, lack of coordination, stiff gait and wild stare, and can progress to violent convulsion, coma and death.

“Often we find animals dead in the field, because the events of grass tetany often take place, from start to finish, within two or three hours,” Dr. Lemenager said.

Less serious forms of grass tetany are often slower to develop and show less severe, chronic symptoms. Suppressed appetite and milk flow are common in all forms of the disease.²

**When does it happen, who does it affect?**
- Older, lactating cows with young calves and in peak lactation are the most susceptible. Typically, grass tetany is not seen in first-calf heifers.
- Tetany usually occurs when cows are grazing on the lush early spring growth of cool-season grasses, such as fescue or orchard grass—usually in April and May.
- Fall-seeded small grains such as oats, rye or wheat can also be involved when grazed in early spring.
- Typically, grass tetany takes place 5-10 days after the onset of colder, wetter weather.

“What we typically see is reduced magnesium uptake in the plant when there are high potassium levels in the soil (because we have added a lot of potassium as fertilizer), when it is 55 degrees or less, and when there are high nitrogen levels in the soil, again because of fertilization,” Lemenager said.

He suggests it’s a delicate balancing act to apply adequate amounts of fertilizer to encourage spring growth without providing so much that you make conditions ripe for grass tetany.

Spring forage also creates a set of complex interactions that affect ruminant animals, he added.

“For example, magnesium absorption is reduced by high potassium intake, low sodium intake and higher fatty acid intake. All these things are characteristics of young, lush vegetative growth in early spring.”

Address grass tetany in a hurry.

Because of its rapid onset and serious consequences, any cases of grass tetany should be treated immediately. Treatment (by a veterinarian) includes an IV infusion of calcium and magnesium, typically in a dextrose solution. When found early, recovery is generally “pretty successful” with this treatment. But, Dr. Lemenager cautions, “Timing is critical because there is just a 2-3 hour window between the onset and death. Also, move or handle animals very carefully. They are very excitable and any extra excitement could cause sudden death.”

**The ultimate goal is prevention.**

Dr. Lemenager recommends supplements that contain high levels of magnesium, along with salt to improve magnesium absorption, palatability and intake. He said producers can also add energy in the form of corn or molasses to improve palatability of the mineral. And, finally, they should avoid adding high levels of nitrogen and potassium to the soil.

When supplementing, Lemenager advises producers to place feeders in the well-trafficked areas so that animals will use them, and to keep feeders fresh to reduce caking and enhance consumption.

Purina offers its Wind and Rain® High Magnesium Minerals, which reduce the concern for caking and reduced consumption due to the weather-resistant qualities. Wind and Rain High Magnesium Minerals are designed to be fed prior to any seasonal grass tetany concerns. Your Purina dealer can help you decide when to provide this product to your herd.

“Producers need to seriously consider year-round mineral supplementation,” Lemenager stated. “It’s important in terms of fertility, conception rates, weaning rates, milk production, immune support and overall health, gain and efficiency. And, for just 60 days in the early spring, the total cost for all the minerals you would need to add could be $5 or less per head.”

Purina Animal Nutrition offers a wide variety of mineral supplement formulations, which can be customized to meet the specific needs of your herd throughout the year. Our Wind and Rain® Storm® minerals contain special weather-resistant, non-caking properties that keep minerals palatable, regardless of the weather. For more information, contact your Purina dealer or Purina representative today.

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Ian and Kristin Tomlinson aren’t afraid of a challenge. They’ve taken on quite a few since they assumed ownership of the Vera Earl Ranch in Sonoita, Ariz., about ten years ago.

The ranch originally belonged to Ian’s great grandparents, who left a cutting horse and dairy operation in Indianapolis to buy and lease 22,000 acres for the Arizona cow-calf operation.

Ian grew up on the ranch until age seven, then relocated to Seattle with his parents, where he completed law school. When his grandmother passed away in 2000, he and his wife, Kristin, returned to Arizona where he passed the bar and practiced law. Their two daughters, Addison and Marin, were born after moving to Arizona as well.

They started running Vera Earl Ranch part-time, then went full-time in 2007. It wasn’t long before they decided to expand the cattle operation in size and in scope.

“We felt we needed to expand to get some economies of scale, rather than just running 300-400 head,” explained Ian, who now serves as part owner and manager of Vera Earl. “So, we acquired the Empire Ranch, then entered into a partnership with the Sands Ranch.”

Today they have about 2,200 cow-calf pairs on 180,000 acres in Arizona, using Hereford cows, artificially inseminated and field-bred to their own Brangus and Angus bulls. And, they operate yearling enterprises in Texas and Wyoming.

“We saw it as a way to diversify our business, rather than just run one segment of it,” Ian said. “There are benefits to moving cattle closer to markets and grazing them there.”

They calve the Vera Earl calves January 15 to March 31, the Empire calves March 1 to June 1, and the Sands calves from late March until July. The schedule is partly dictated by forage availability and quality, as well as the types of pasture on each range. Because all their replacement heifers are from Vera Earl, those heifers must calve first to reach maturity earlier for breeding.

Weaning occurs for 45-60 days from September through November. Their starter ration is Purina’s Precon® Complete feed, after which they blend over to total mixed rations for another 45-60 days.

“We strictly buy cattle for the out-of-state operations,” Ian commented. “We can pick up a margin between what we sell our cattle for and what we can buy similar cattle for, so in the fall we buy cattle for wheat and in the spring for grazing.”

“When we analyzed our business plan, we said we wanted to buy and sell nine months a year and be active in several segments of the industry,” he explained. “That reduces some of the market risk. If the cow-calf industry is not humming along, we can pick up the slack with our stocker operations.”

While they don’t mix their Arizona calves with their stocker/yearling operations, they do buy a lot of cattle in Arizona. They usually background them for 45-60 days, then ship them to Texas to graze winter wheat or to Wyoming for summer grazing. Ian said they also buy in Utah, Nevada, Texas and New Mexico, using an independent buyer who frequents auctions and sale barns.

In all his relationships — whether it’s land leases, cattle purchases or joint ventures — Ian says he develops business relationships that benefit both parties and emphasize long-term, rather than short-term outcomes. And, he considers his ranch “crew” a crucial element in his success.

“Without our crew — from our fence guy, to the day workers, to the foremen on each ranch — none of our success would be possible.”

As for Purina products, Ian says he has “used just about everything.” That includes Precon®, Accuration®, Range Supplement and Accuration® Range Liquid 28-12, Wind and Rain®, Storm® 7.5 Complete Minerals and Wind and Rain® Minerals with Altosid® for fly control in the spring and summer. They also use 50-pound Sup-R-Blocks® supplement in areas inaccessible to the liquid truck.

“We started last year with the Precon 5 and Accuration, and then started Sup-R-Lix and Wind and Rain, and we really liked the results,” Ian offered. “The cows were milking better and calves were healthier hitting the ground. Plus, we were able to space out where we put the liquid feed, so we could hold cows in pastures we were never able to before. This winter, for example, we were able to keep cattle to an area they had never used before, and a lot of that was the feed. It kept them from moving back to the easier, flatter terrain, which is the problem we were having before.”

“Plus, they were ½ to a full body condition score better than the previous year, and the rainfall amounts were fairly similar,” Ian continued. “Then, this year we had 93 percent breed up, compared with 78 percent last year, and our weaned calves were significantly heavier on all three ranches.”

Ian admits the Purina products that helped achieve these results are a little more expensive than what he used previously, but says it’s worth it.

“We have 330 more calves. That was money well spent. Everything we do is dictated by return on investment.”

Ian also likes the working relationship he enjoys with Purina nutritionist, Kelly Sanders, and sales representative, Stephanie McLean. He says he speaks at least twice each week with one or both of them.

“Our working relationship with Purina has been great,” he stated. “For instance, we were going to start using liquid feed everywhere. They encouraged us to wait until we had tested it further. They weren’t just pushing product; they wanted to make sure we were happy with it before we jumped in with both feet.”
Consider several angles to control pinkeye in your herd

By Larry Hollis, DVM, M.Ag.

There’s one thing you know for sure. Pinkeye—bovine keratoconjunctivitis—is going to happen. The bacteria that cause it are out there. And, there are usually herd carriers that keep it going from year to year.

Multiple bugs cause it. But the extent of the problem can vary substantially. When the classic bacteria (Moraxella bovis or M. bovis) is the only bug involved, problems are not nearly as bad as when M. bovis AND Moraxella bovoculi (M. bovoculi) are both present. Then, pinkeye can really go to town. And while there are commercial vaccines that protect against M. bovis, there are none effective against M. bovoculi.

Consider autogenous vaccines. If you have pinkeye problems, even after vaccinating with commercial vaccines, consider working with your veterinarian to develop an autogenous vaccine by culturing eye tissue of animals in your herd. When you make your vaccine strain-specific for your herd, the chances of success are greater.

Autogenous vaccines cost more than commercial vaccines, because there is often a 1,000-dose minimum. That can be a deterrent for smaller producers. To address this, you might consider pooling resources with neighboring operations. Their herds probably suffer from the same bugs as yours.

Early vaccination. Vaccinate against M. bovis before you start to see problems.

Fly control. Flies spread bacteria from animal to animal, and they irritate the eye, making it more susceptible to infection.

Fly tags are the easiest deterrent to use. However, timing is critical. With fly tags, wait until you start to see fly numbers build up—maybe even until you see that first case of pinkeye. Many producers put fly tags in too early, just because that’s when they are working the cattle (in the spring), but then the tags run out of gas by the time peak fly season hits. Of course, if you have a history of early pinkeye, you’ll want to put tags in early and plan to spray later when the flies build up.

If you decide to insert a second round of fly tags, be sure to alternate drug classes (pyrethroid or organophosphate) to keep cattle from developing drug resistance.

Dust bags, sprays and oral larvicides can also help reduce fly populations, as can the simple technique of moving cattle to pastures that are free of manure—and upwind of manure-laden pastures. Finally, it’s a good idea to keep pastures grazed or mowed so they don’t produce as many of the seed heads that can irritate eyes and cause tearing, which attracts flies.

Clearly, pinkeye isn’t a simple problem. But considering its cost to any cattle operation, it’s a challenge you must attack from several angles if you want to keep it under control.