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Damper Disease in Young Calves

Examining management practices can help prevent and minimize disease during calving season.

by Heather Smith Thomas

Many producers today are trying to build their herd numbers. With the price of replacement heifers at an all-time high, focus has been on keeping more heifer calves within the herd. The best place to start is preventing or minimizing losses and striving for a 100% calf crop with live, healthy calves.

Reducing scours

The most common illness in young calves is scours. According to George Barrington DVM, professor of food animal medicine and surgery at Washington State University, diarrhea results in the greatest economic loss from disease in this age group. In beef calves, a recent study showed that 5.5% of calves die from diarrhea during the first three weeks of life.

Some years are worse than others for disease. Bacteria, viruses or protozoa can cause intestinal infection and diarrhea. Whether or not calves get sick is often related to multiple factors including exposure (contact with pathogens and the “dose” of pathogens), level of immunity and stress. Good weather, clean ground and stress reduction, which includes shelter from bad weather and minimal confinement, can help reduce the incidence of scours.

The Sandhills calving method, in which the cows that have not

yet calved are moved to a new, clean pasture every two weeks, is one way to help prevent scours in young calves. “You want to keep the pathogens away from the youngest calves, and keep these babies away from the pathogens,” Barrington explains.

Mark Hilton DVM, clinical professor of beef production medicine at Purdue University, says that if producers follow best management practices like the Sandhills calving system to keep the calving environment clean, potential for calf disease problems will be greatly minimized.

“If you routinely have calves that get diarrhea or pneumonia, you need to find out why because this is not normal,” Hilton says. “I have herds that I’ve been working with here for 16 years that have never had a calf with scours, a young calf with pneumonia or a case of navel infection. These clients are proving that excellent management, clean environment and good nutrition are effective in disease prevention.”

Avoiding contamination

Disease is usually a reflection of errors that happen somewhere during a calf’s life. Hilton says disease often occurs as an accumulation of errors and the goal is to pinpoint the two or three things causing disease and prevent them the next year.

“Realizing that calves will get exposed, it’s a matter of controlling the level of infection in a calf’s environment,” Barrington explains. “We know the pathogens are there, so we try to spread the calves out and minimize grouping them in small areas,” he says.

Feeding is often necessary when winter and early spring pastures are not nutritionally adequate, but feeding concentrates cattle in a smaller area. “We can feed in a strategic manner, however, to promote more dispersal of the animals,” Barrington says. “If our feeding pattern can help spread them out, this can minimize problems. Sometimes a feeding area becomes contaminated quickly when space is limited or the ground is wet, and in other conditions more slowly. But in general, we know that contamination occurs in less than two weeks.”

Barrington suggests moving feed bunks or round bale feeders often, and if feeding on the ground, producers should also keep moving to new areas. He also says feeding some distance away from the water source helps to reduce manure build up around a small area, but the most important thing is to never calve in your winter feeding area because it is highly contaminated.

One rancher Hilton worked with could not remember a year without calf scours. “Every year for the past 20 years, about halfway through the season they’d start treating calves,” he says. Hilton took students to visit the rancher in order to determine ways to remedy his problem. They drew a diagram of all pastures and facilities and used photographs to brainstorm and to examine options.

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— George Barrington DVM

“He’d tell us what might work and what wouldn’t work, and we set up a Sandhills calving system for him,” Hilton says. “It wasn’t exactly like the one that David Smith and Dale Groteluechen helped originate, but it seemed workable. The next year, the rancher had no calf scours. He kept expecting to see some sick calves at some point, but it didn’t happen.”

Preventing scours can be more challenging in some operations than others, especially if a producer is locked into a calving

season that puts newborns in bad weather and bad environmental conditions. This difficulty happens when cattlemen must calve in January and February to have yearling bulls old enough to sell or when Western ranchers depend on public land grazing and need to have the cows calved out and possibly bred again before they go to summer pasture.

“The rancher we worked with was calving too early for good conditions, because he is a seedstock producer needing bull calves old enough to sell as yearlings,” he says. “We were still able to set up a system for him that worked. It was more of a challenge than for a producer who can calve in May,” he says.

The ranch went from a yearly 50% scour incidence to none in one year, and the rancher is now expanding his herd. He was reluctant to do so in the past because he dreaded calving season but is now looking to purchase 40 additional cows.

“I know a herd in Nebraska that calved in February and March because they were selling seedstock and fought scours and pneumonia. They finally decided to calve in August and September when weather was better. Instead of selling bulls at 14 months of age they are now 18-months-old, and it’s working great. Their cost of production went down. They are no longer fighting nature.”

Vaccinating

Certain vaccines, given at the appropriate time during pregnancy, stimulate the cow to produce antibodies against some of the pathogens the calf will encounter. The calf receives this “instant immunity” by nursing her colostrum. Even if vaccinating pregnant cows enables them to produce a high level of appropriate antibodies for their colostrum, a calf must nurse on time to absorb those antibodies.

“We can address specific immunity through vaccination,” Barrington says. “There is no one vaccine that will halt all problems, however, and trying to depend too much on vaccines won’t resolve a scour problem. No vaccine will make up for poor management, but vaccination can augment good management in a prevention program. The most time and effort should always be put toward proper management versus dependence on vaccination. It’s a mistake to skimp on management practices thinking you can cover yourself with the vaccine.”

Hilton agrees. “We can’t rely on a vaccine to prevent scours or pneumonia,” he says. “The important thing to consider is the calf’s environment. Yet once in a while you do everything right and still get a sick calf that you can’t prevent. For these instances, you

need electrolytes on hand. If it sits there for 10 years and never gets used, that's great, but any calf with diarrhea needs fluids, no matter what the cause."

Asking for help

Hilton says it may take making two or three minor changes to see improvement. If that is not the case, call other resources such as Extension beef specialists or veterinarians and seek their input.

"They can all look at it from a little different angle and help find a way to make it work," he says. "They might come up with some ideas you haven't thought about or it may be a combination of what all of these people say. Sometimes the rancher comes up with a solution because they got him thinking about something he'd overlooked. Two or three heads are better than one."

Scours is highly contagious, and if one calf has it, more will be getting sick. "There is value in having the veterinarian come onto the farm to not only suggest proper treatment for that first one but he/she might be able to help you prevent the next 20 or 30 or 100 calves from having scours," Hilton says. "If we can find out why that calf got sick and prevent the next ones from getting scours, that's what's important. Assessing the environment is key."

Sometimes it just helps to bring a fresh set of eyes to look at possible

Biosecurity

Barrington emphasizes two major strategies for disease prevention:

1) External biosecurity — reducing the likelihood of introducing an infectious disease agent into the herd such as being careful not to bring cattle into the herd that might expose your cattle to new pathogens — and **2) Internal biosecurity** — reducing the likelihood of transmitting a disease that is already present.

An example of the first strategy would be to avoid bringing home dairy calves to cows that lose their calves. A dairy calf might bring salmonella, cryptosporidium, or even Johne's disease into a beef herd. For the second strategy, make sure your cows calve on new, clean ground rather than in your winter feeding area to minimize newborn calves' contact with fecal material and contamination.

The most common disease agents causing diarrhea in young calves are normal inhabitants of the GI tract of most healthy mature cattle. These organisms exist in low concentrations and without clinical signs of infection, according to Barrington.

"Most cattle are exposed to continuous, low doses of these pathogens, shed by subclinically infected or immune herdmates," he says. "When young, immunologically naïve calves are exposed to low doses, they too can develop immunity and not show signs of disease. However, if young calves are exposed to high doses, they

typically develop clinical disease and become 'super shedders' and release millions of pathogens per gram of feces. This super shedding contaminates the environment very quickly and puts other calves at a much higher risk for disease," he explains. Younger calves that have less resistance, or that become exposed to a high level of pathogens, are most at risk.

"There are some nasty bacteria like Salmonella that you don't want to bring into your herd, but most of the others are already there," he says. "Most of the viruses (rotavirus, coronavirus), protozoa (especially coccidia, and sometimes cryptosporidium) and even many E. coli are usually present in the herd. Preventing scours in young calves is mainly a matter of minimizing the exposure of young, immuno-naïve calves to these pathogens."

Barrington says it doesn't hurt to have some exposure, because this stimulates the young calf to start building immunity, but calves become sick when they are exposed to an overwhelming level. "Since most of the pathogens that we're concerned about are passed in feces — from adult cattle and from older calves that have come into contact with these pathogens — we want to keep young calves in a relatively clean pasture." **HW**

ways to improve the environment for calves with just a few management changes. It might mean taking all the cows that are left to calve and putting them in a new, clean pasture and giving those babies a chance to be born in a clean environment.

Treating disease

If a calf gets sick and needs fluids, providing timely treatment and isolating that calf and its mother can reverse the disease process quickly before disease pathogens are spread throughout the pasture.

Hilton feels that an esophageal

feeder is something every producer should have. "Pour boiling water through it after use, and clean it up really well before the next use. We don't want to put something down a calf's throat that's full of bacteria."

He advises having a couple on hand — one for giving colostrum to newborns and another for treating sick calves — and prefers the kind with a slightly smaller bulb on the end of the probe. He says it is less abrasive to the throat tissues, especially if the calf needing treatment is small.

It's also a good idea to keep a few packages of colostrum replacer. "Make

sure it's a high quality replacer and not just a colostrum supplement," Hilton suggests. "Ask your veterinarian which one is best. Then you'll have it for an emergency if you ever have a heifer that tries to kill her calf or a cow that has a problem and there's no colostrum for the calf."

Considering prevention of disease over treatment can lead to more live, healthy calves that will help you reach your production goals. **HW**