PHOTO BY BETH MACKENZIE

Step Up

Research proves lameness can be a problem in the beef industry; Zinpro launches a new program to help cattlemen with early intervention.

by ***Sara Gugelmeyer***

Lameness in beef cattle is more of a problem than previously thought. Now, Zinpro Corp., along with the Beef Cattle Institute at Kansas State University, is drawing producers' attention to beef cattle lameness; stressing early intervention is key to reduce losses and to improve animal well-being.

"It all started out of needing some incidence data," says primary investigator Dr. Shane Terrell, veterinarian, of his research project. Terrell is working on his doctorate through the Beef Cattle Institute, where Dr. Dan Thomson, veterinarian, is his major advisor. "In the last 10 to 15 years, outside of true foot rot diagnosis in the feedyard, we don't have any good incidence data for other causes of lameness. What we wanted to do was be able to classify risk by severity across the different diagnoses," Terrell continues.

Locomotion scoring

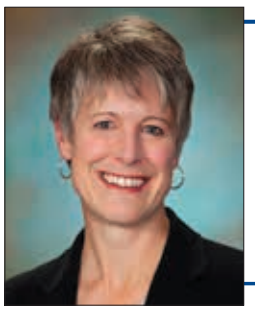
So first, Terrell needed to develop a locomotion scoring system for the research project, quantifying lameness on a number scale. In the dairy industry, the locomotion scoring system used most prevalently is the 1 through 5 score, he explains, but it needed to be adjusted for use in a feedlot situation.

"They look at those (dairy) cattle twice a day as they go through to the parlor, so we decided to simplify it to something they could use at the feedyard," Terrell says.

What he ended up with is a 0 through 3 locomotion scoring system, which Zinpro has made the cornerstone of its "Step-Up™ Management Program for Beef Cattle."

Zinpro's ruminant research and nutritional services manager, Connie Larson, Ph.D., explains, "Locomotion scoring is based on the observation of cattle walking, or their gait, with emphasis on head movement or head bob, stride length and symmetry."

A normal walk is scored 0, with 1 denoting mild lameness, 2 moderate lameness and 3 severe lameness. (See "Step Up" graphic.)



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Terrell validated the scoring system as part of his research project by training and testing feedlot cowboys and other employees on the system. Terrell was able to statistically prove that it was a valid system and easy to teach.

"Until recently, there was no systematic approach to identifying and managing lameness across the beef industry," Larson explains. "The critical aspect about this locomotion scoring system is that it's a simple and effective way to identify cattle that need to be evaluated for treatment of lameness. The system helps train animal-care personnel to visually assess locomotion in order to determine the prevalence and severity of lameness, and then assign cattle to different categories for treatment."

Research findings

Although the study is still being peer-reviewed before publishing, what Terrell found as part of his research into the incidence of lameness in beef cattle was that it's more prevalent and more treatable than often thought. His study encompassed six different feedlots over a year's time, which added up to more than 200,000 head. The cowboys used the locomotion scoring system, and then they pulled and diagnosed cattle into eight different causes of lameness.

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"What we found in our research, which was consistent with all other lameness research, is that we consistently under-diagnose hoof lesions and over-diagnose upper limb lameness. Many times cattle that look like stifles are sole abscesses or hoof lesions," Terrell explains. "It all comes down to early intervention."

Using the scoring system, even score 1, or mildly lame cattle, need to be pulled and examined.

"The next step after early diagnosis of a problem is accurate diagnosis, so actually picking up feet, doing an exam on those hooves to identify those highly treatable, if intervened early, causes of lameness," Terrell says.

He says he believes what has been often treated as foot rot in the past, any swelling in the foot or below the fetlock joint, is likely caused by a sole abscess or lesion that was left untreated and became infected.

"Because we typically don't see swelling early on with sole abscesses, toe abscesses or small lacerations, we don't intervene at that point," Terrell explains. "What happens is those become areas of entry for bacteria. Bacteria can move up into the joint and become septic joints, not foot rots. If we intervene early, when we see early signs of lameness, we can open up those sole and toe abscesses, establish proper draining and treat with an antibiotic to prevent secondary infections from going up into the joint. Then treatment success rates go up significantly."

Early intervention is key

Larson adds that the emphasis is on early identification and intervention to help reduce losses and to be mindful of animal well-being.

She says, "The Step-Up locomotion scoring system allows us to identify cases of mild to moderate lameness where there is an opportunity to have an intervention. Ideally, animals in categories 1 and 2 can be treated, preventing them from becoming a category 3 or severe. Also, when lameness is recognized early, the success rate of treatment is higher, and it is easier to mitigate the pain the animal is experiencing."

Terrell explains that when lameness issues go untreated before becoming severe (category 3), significant performance loss occurs as well as increased chance of the animal becoming a railer, or one sent to slaughter before finish. He says about 70% of all railers in the feedloot are the result of lameness. Also about 5% of all death loss in the feedlot occurs because of lameness. With early intervention and accurate diagnosis, those numbers can be significantly reduced, if not eliminated, he says.

This research and the Step-Up Management Program can be applied outside the feedlot most certainly, Terrell and Larson agree.

Practical application

"In pasture cattle, bulls and mother cows in particular, you are probably looking at some higher prevalence especially during the breeding season with upper limb lameness," Terrell admits. "But across all facets of the industry we tend to over-diagnose those. Even in lame grass cattle, when

we pick up their feet we tend to find lesions. We definitely underdiagnose lesions in the foot across the board."

Thomson says the scoring system can also help cattle handlers identify the various causes of lameness.

"Being able to communicate clearly across industry segments about the severity of lameness is critical not only to managing lameness, but also to preventing the injuries that cause it," Thomson adds.

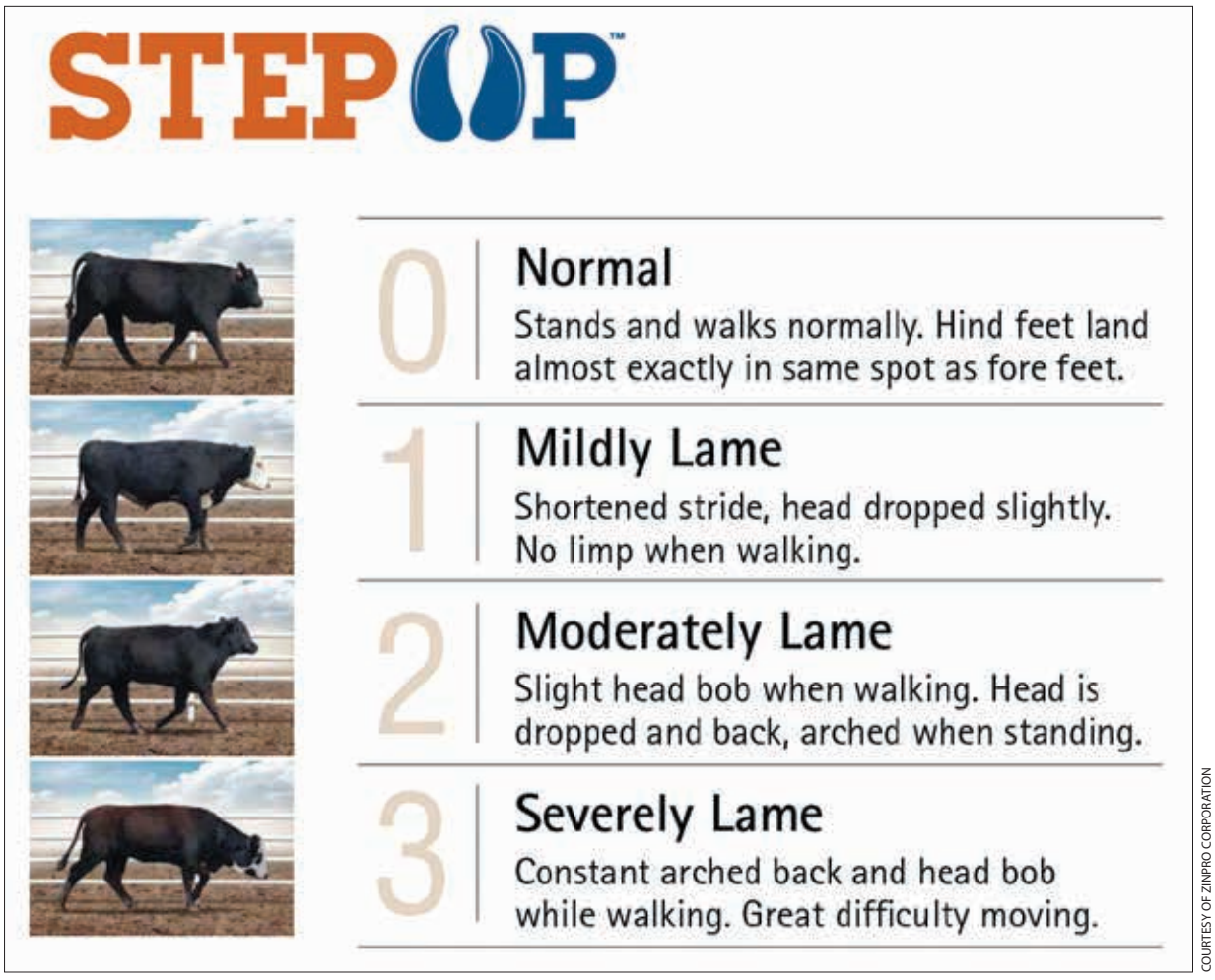
Toe abscesses and sole abscesses are often caused from cattle spending too much time on rough processing surfaces like concrete. Producers should be mindful of the surface the cattle are on and how much time they spend there, such as during processing or at auction markets. Another contributing factor, Terrell says, is weather.

"There are definitely predisposing factors for lameness," Terrell says. "Weather patterns affect our cattle. Wet conditions make their hooves soft and more likely to be injured. If cattle are shipped from a wetter climate, those hooves are softer and have higher chance of abscesses than cattle coming from a sandy environment. And cattle coming directly off a ranch are less likely to suffer an injury than those coming through livestock auctions just for sheer amount of time spent on concrete."

Regardless of the cause, though, Terrell emphasizes, whether it's cows, bulls, stockers or feeders, "if there's a head bob or they drop their head or raise their head significantly outside of their normal walking plane where I can identify an affected limb, that's enough for me to at least see what the cause of that lameness is.

"In the past, especially in the feedlot, but also in the cow-calf operation, our measure for pulling was either because they fell behind in the group and are no longer performing with the other cattle or they are significantly lame. Typically if we wait until we see either one of those signs we give up a chance for a successful intervention.

"Whether it's a cow or steer we need to examine at the first sign of a shortened stride, or category 1, mild lameness, because something is causing that. If we intervene early, we can prevent primary physical lesions of the foot from progressing into secondary infections and other complications in which the interventions are less successful."



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Improving animal welfare

One of the goals in developing the Step-Up program, Thomson says, is not only to diagnose and to treat lameness but also to prevent it from happening in the first place.

"Over the next five years, we hope to see a decrease in lameness because of the Step-Up program," he says. "That's better for the animals and comes back as money in the pocket of ranchers and farmers."

As animal caretakers in today's world of increased scrutiny on animal agriculture, it's more than just our pocketbooks that take a hit when we let lameness go too long.

"How we handle and manage cattle, and address issues such as lameness at all stages of production underscores that we are doing what we can to identify and correct situations that comprise animal well-being," Larson says.

"The Step-Up program addresses this by providing tools for beef producers, veterinarians and nutritionists to improve the well-being of beef cattle and elevate beef cattle lameness management through the industry."

Thomson adds, "Lameness is prevalent and it does cause losses. It is one of those issues we've seen for years; however, it hasn't received the credit or the blame it deserves for what it really costs us within the industry." **HW**

Editor's Note: *Terrell's research should be published in the next six months. To obtain more information and to request a free locomotion scoring guide and beef cattle lameness poster, log on to Zinpro.com/lameness/beef.*

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