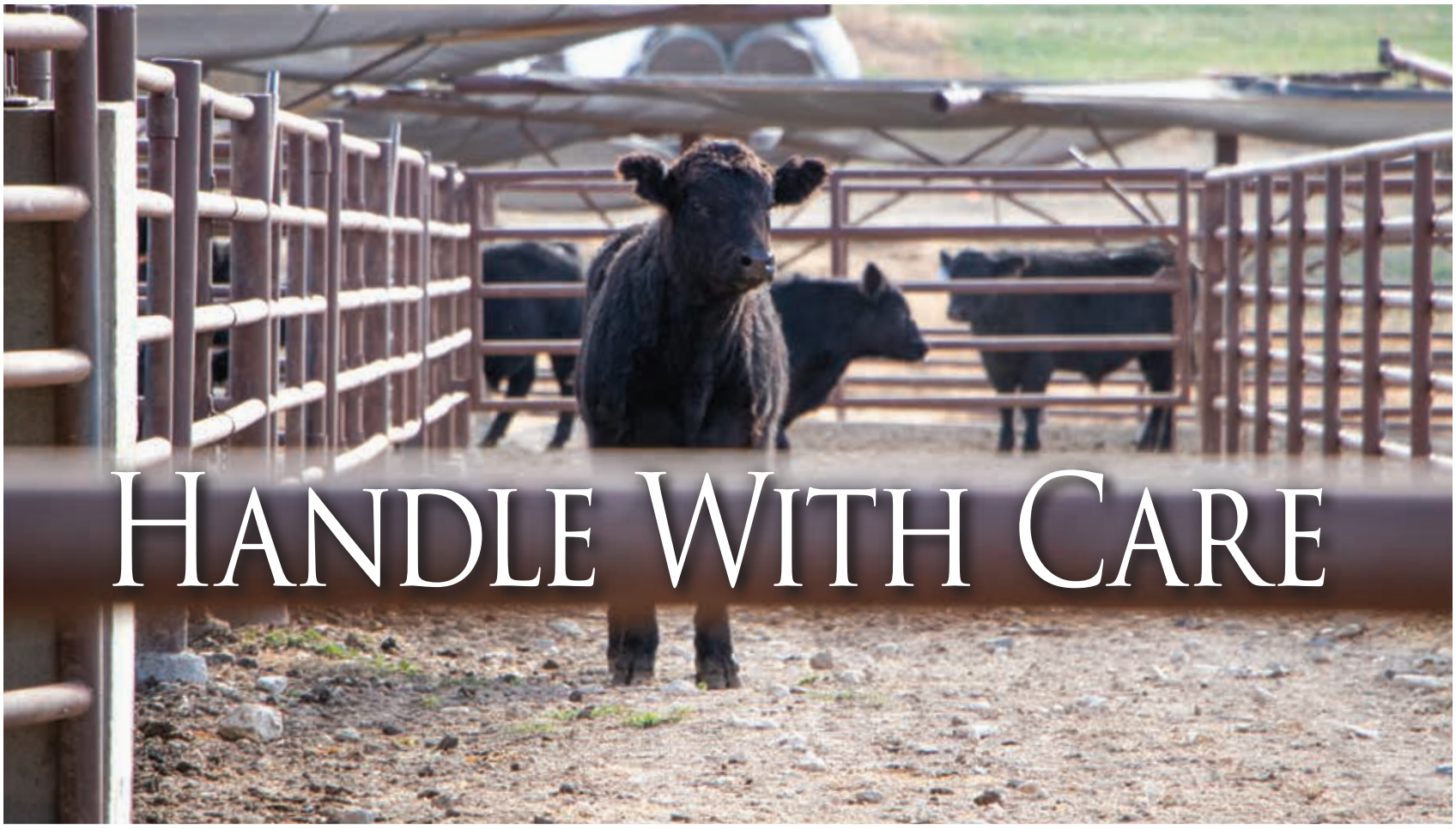


PHOTOS BY HEATHER NEWELL

Handle With Care

Veterinarian explores ways to manage high-risk calves.

by Troy Smith, field editor

According to veterinarian Dan Thomson, there are a lot of similarities between efforts to manage the COVID-19 pandemic and the efforts applied to managing bovine respiratory disease (BRD) in feedyards. Just like public health officials and politicians, feedyard managers want a solution to make the sickness stop. They push for new or better vaccines. Dissatisfied with their advisors, they may hire and fire a succession of consultants. They may even resort to gimmicky treatments.

"The public health strategy has been to flatten the curve and not overwhelm hospitals. It's the same in feedyards," said Thomson in a presentation included in the "Calf Health Management on Arrival" webinar series offered by the University of Nebraska–Lincoln. A former feedyard veterinarian and currently the animal science department chair at Iowa State University, Thomson talked about procedures for reducing stress and promoting health among calves newly delivered to feedyards.

Citing another similarity to the COVID-19 situation, Thomson said feedyard managers also struggle to control disease while keeping the economy open. In order to keep pens occupied and the operation running, many feedyards handle "high-risk" calves.

Benchmarks of SUCCESS
HEALTH STRATEGIES

Available and cheaper, these calves typically are lightweights, not vaccinated and weaned onto a truck or trailer. They've been commingled and hauled long distances to a yard where they are commingled again and exposed to new pathogens and unfamiliar feedstuffs.

Due to those multiple stress factors, such cattle are considered to be more at risk of contracting disease, particularly BRD. And high morbidity rates often lead to high mortality rates.

Thomson offered tips for reducing morbidity by mitigating stress and applying practices that promote healthy outcomes. It starts with providing the healthiest and most welcoming environment possible for new arrivals.

Welcoming environment

Noting that he frequently receives questions about pen size, Thomson said the optimum for high-risk calves may be 100-head pens with ample bunk space (a foot or so per animal) so that all animals can have access to the bunk. However, Thomson clarifies that he's talking about one-load pens that were acclimated and started on a ration as a single group.

One hundred-head pens are not optimal for all situations, especially when a pen is filled over time. Adding cattle to "build a pen" creates more commingling and likely increases morbidity. So, pen size is related to an operation's buying or receiving patterns.

"If it takes more than five to seven days to build a pen, a wreck is coming," warned Thomson, advising producers who buy smaller bunches of calves over longer periods of time to think about smaller pens.

Thomson recommended liberal bedding of pens with hay to provide comfort and warmth for incoming calves. One bale is seldom sufficient, so he advises producers to use enough hay to

make a difference. It's important because there is nothing a viral pathogen likes better than a hypothermic calf.

"We found that feeding cattle at night and putting down bedding to warm them up is no different than Mom giving you some hot tea and putting a blanket around you. It does remarkable things for the health of these cattle," said Thomson, also emphasizing the need to get quality hay inside newly arrived calves. "Get their bellies full; get some energy in them."

A smooth transition to an appropriate starter ration is favorable for calf health, and Thomson claims calf feed intake is a sensitive predictor of health status. He cited the "percent and a half by a week and a half" rule of thumb, meaning calves should be consuming an amount of feed equal to 1.5% of their own body weight within 10 days. If they are not, expect trouble.

Processing tips

Regarding timing of processing high-risk calves, Thomson recommended allowing an hour of rest for every hour spent on the truck. So, after a 24-hour haul, wait a day. That much delay should allow sufficient time for calves to rest, get their energy levels up and rehydrate. Still, process within the first 24-48 hours. A longer delay for yearlings or longer-age, preconditioned calves is acceptable, but processing of high-risk calves should be a priority.

Thomson cited results of a survey of 23 consulting feedyard veterinarians. It suggests a standard vaccination protocol should include a five-way modified live virus (MLV) product for immunization against infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD) types 1 and 2, parainfluenza-3 (PI_3) and bovine respiratory syncytial virus (BRSV).

About 75% of consultants recommended vaccination against *Mannheimia haemolytica*, and half of the consultants included use of a clostridial vaccine as standard procedure. Thomson's personal recommendation for high-risk calves includes all of the vaccines mentioned plus protection against tetanus for bull calves being band-castrated.

In Thomson's opinion, perhaps more important than particular products administered at processing is the way cattle are handled. Insisting that low-stress handling is more than a catchphrase, he considers it a cornerstone of stewardship. The kind of processing facility used matters less than the attitudes and skills of the people involved. Whether using a regular tub, a Bud Box or a Bud Tub, it is critical cattle handlers understand the system and the principles of low-stress stockmanship.

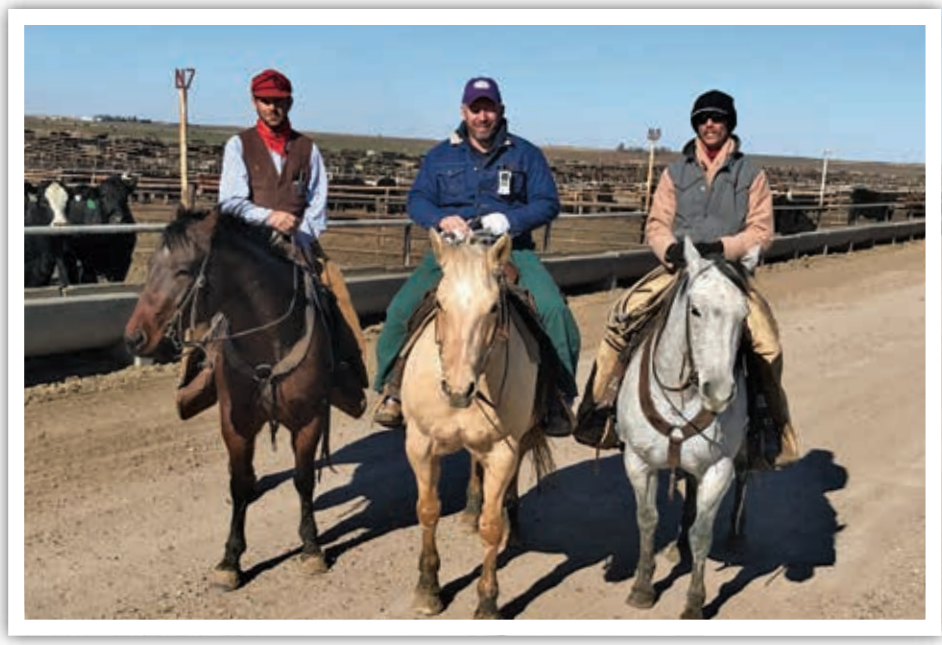


PHOTO COURTESY DAN THOMSON

Insisting that low-stress handling is more than a catchphrase, Dan Thomson (center) considers it a cornerstone of stewardship. The kind of processing facility used matters less than the attitudes and skills of the people involved.

> **"If it takes more than five to seven days to build a pen, a wreck is coming."** — *Dan Thomson*

"It does matter," insisted Thomson. "Data shows improved immune response when cattle are handled the right way."

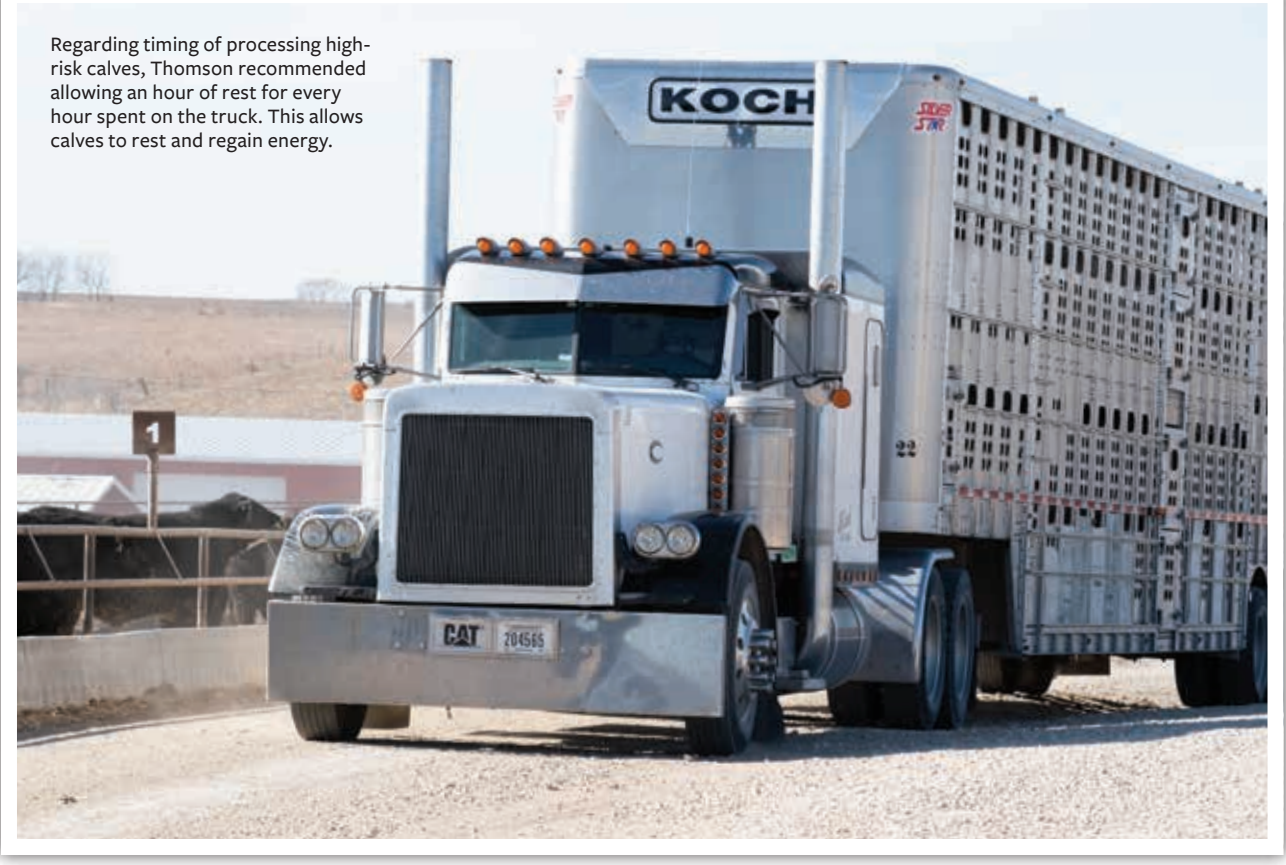
Without a doubt, Thomson believes in metaphylaxis, or mass treatment with an antibiotic, right after the arrival of highly stressed calves. In his experience, the practice typically decreases morbidity by 50%.

"If you're expecting 40% morbidity, you'll have 20, and if you're expecting 20% morbidity, you'll have 10," said Thomson. "To me, metaphylaxis is key to managing high-risk calves. Period."

Detecting illness

Thomson said successful management response to calf health problems often depends on early detection. He praised the cattle acclimation concepts taught by fellow veterinarians and

Continued on page 78



Regarding timing of processing high-risk calves, Thomson recommended allowing an hour of rest for every hour spent on the truck. This allows calves to rest and regain energy.

colleagues Tom Noffsinger and Kip Lukasiewicz, echoing their premise that acclimation of newly arrived cattle helps the animals become more comfortable with their new surroundings and supports communication between the cattle and their caretakers.

The human touch

Thomson urged more human-animal interaction by getting into the pens and among the cattle. Using low-stress handling principles to move the cattle, stop them and move them again with purpose. It can be done by moving cattle out of their pen and into an alley, and back again, or it can be done within the pen.

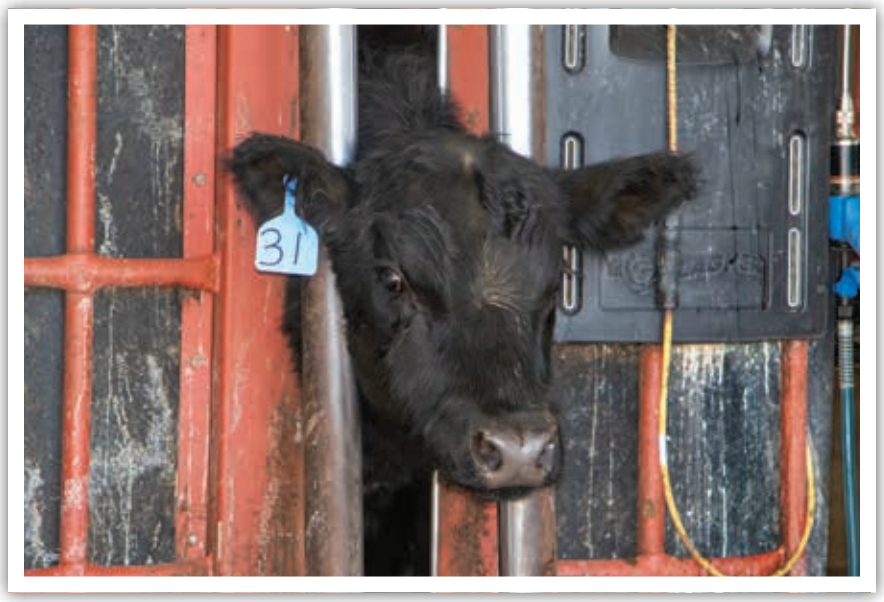
Through this process, handlers can help calves get over their fear and let down their guard. They develop trust in the handlers. It makes sick calves easier to spot, or, as Thomson put it, "that's when they tell you their secrets." He recommended starting on Day 1 by getting in the pen and easing newly arrived calves to hay-filled bunks.

While some feedyards prefer to ride pens twice daily, Thomson said thoroughly checking cattle once per day ought to be enough. Early in the day is best. With calves, he advised checking when the hay or starter ration is delivered to the bunk, then see what is left standing at the back of the pen.

When sick cattle are found, Thomson recommended a sensible, disciplined approach to treatment. Use appropriate medications according to directions. Do not combine antimicrobial products. Remember that an intravenous administration of an antimicrobial is seldom better than subcutaneous injection, so keep things simple.

The timing for administering a second treatment depends on the specific product. Read the label. Regarding whether to switch to a different class of drug for subsequent treatment, Thomson said changing products probably won't make a significant difference, compared to using the same drug for the first and all follow-up treatments. When using drugs that can be administered through multiple low-dose treatments or a single large dose, Thomson recommended a large dose on Day 1 to avoid the stress associated with handling animals multiple times.

"We found that feeding cattle at night and putting down bedding to warm them up is no different than Mom giving you some hot tea and putting a blanket around you. It does remarkable things for the health of these cattle." — *Dan Thomson*



When sick cattle are found, Thomson recommended a sensible, disciplined approach to treatment. Use appropriate medications according to directions. Do not combine antimicrobial products.

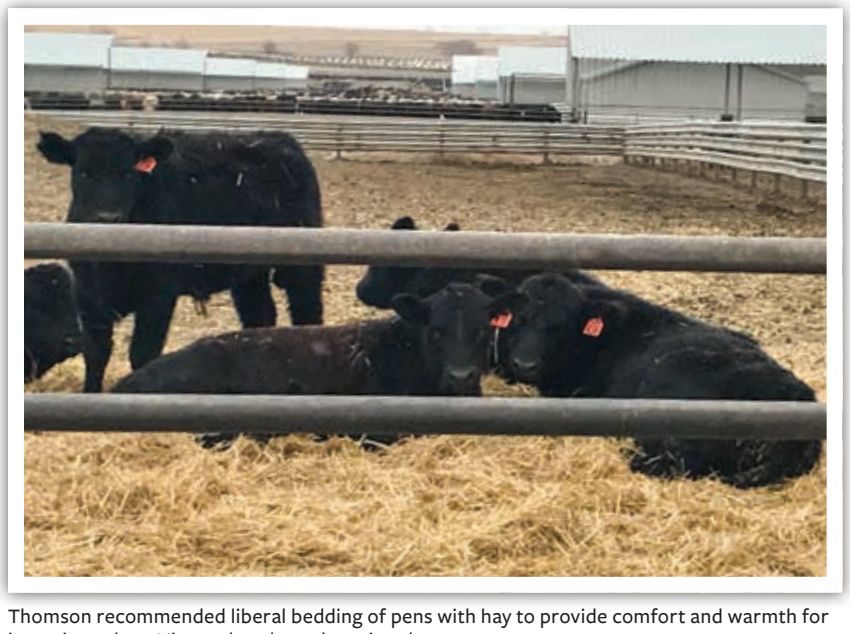


PHOTO COURTESY DAN THOMSON

Thomson recommended liberal bedding of pens with hay to provide comfort and warmth for incoming calves. Viruses love hypothermic calves.

Thomson said he's often asked what is a normal success rate when treating cattle for BRD. Based on his experience, an 80% success rate after one treatment is normal. Among animals brought back for a second treatment, the success rate is 50% percent. Among animals treated three times for BRD, there is a 50% chance of recovery. The other half of thrice-treated calves will be chronics or deads.

The 30-day peak

While careful attention to management of high-risk calves can help flatten the curve of exponential disease spread, Thomson reminded producers that their own buying habits often make it more challenging.

Typically, high-risk calves that break with BRD will start showing clinical signs within two weeks after arrival. Somewhere between 14 and 30 days on feed is when morbidity peaks.

Most calves that die as a result of BRD don't do it right away. On average, that happens about 30 days after treatment began. So, from the time morbidity peaks, it can take another 30 days to reach a peak in death loss. That means death loss can occur for as long as 60 days on feed.

Therefore, if calves purchased around Labor Day broke with BRD, peak death loss would occur near the end of October. But if the producer had continued to buy high-risk calves during that time, halting purchases on Halloween won't end the game.

"That's halftime," said Thomson. "If you've been buying cattle for 60 days, you can expect death loss for another 60 days."

Not all high-risk calves present the same health challenges, but they are unpredictable, compared to preconditioned, ranch-weaned calves. Thomson favors the latter because they are better prepared for the transition through marketing channels. They carry less risk from a health standpoint and economically.

Editor's note: Troy Smith is a freelance writer and cattleman from Sargent, Neb. Recordings of the University of Nebraska–Lincoln's "Calf Health Management on Arrival" webinar series can be accessed at *beef.unl.edu* under "videos and webinars."