RESEARCH ROUNDUP

Transition with training wheels

by Barb Baylor Anderson, field editor

Weaning calves without the right practices can be as challenging as teaching a child to ride a bike without training wheels. Researchers at Ohio State University (OSU) are hoping to change that. They have evaluated how adding a trainer cow, or social facilitator, in a pasture weaning setting may be the best way to put calves on a successful path.

Traditionally, the most common weaning method is to take calves away from their mothers at 5-8 months of age, says Kirsten Nickles, an OSU animal science graduate research associate advised by Tony Parker. Natural weaning takes place at 7-14 months. Shutting down the milk supply and removing calves early leads to walking and bawling during weaning. The stress can generate weight loss for calves and contribute to susceptibility to bovine respiratory disease (BRD).

Social facilitator cows may make weaning less stressful.

"Weaning calves and sending them to their next destination is stressful," Nickles says. "Growth rates decline because there is minimal dry-matter and water intake. Walking and vocalization compromise their welfare, and subsequent trucking adds to a decline in calf health."

What if producers could reverse those negative effects?

Nickles tested one theory as part of her advanced degree program, noting a void exists for weaning practices in pasture settings.

Under the influence

"Cattle are gregarious animals. They are raised in a cow-calf hierarchy where brood cows are the dominant figures calves follow. Calves will model their own behaviors after cows," she says. "Once that familiarity is removed, it increases calf stress. So, I wanted to evaluate using 'trainer cows' or 'social facilitators' to see if it would change the behavior of calves during weaning."

Known as allelomimicry, individuals in a population have the ability to influence the behavior of others. Nickles tested whether placing a familiar cow with weaned calves would make a difference in total distance walked and total time devoted to walking by calves during weaning. She hypothesized less walking would reroute energy expenditures by the calves so they might better address their nutrient requirements and experience less body weight loss.

"We found addition of a social facilitator numerically, though not significant statistically, decreased total distances walked on day of weaning in the pasture as compared to control calves abruptly weaned on pasture without a social facilitator," she says. "Calves weaned with a social facilitator also devoted less time to walking on the day of weaning compared with the control calves."

GPS collars were placed on calves on days 0, 7 and 14 to measure total distance and time walked. Body weight and blood samples were also taken. Nickles found calves with a social facilitator walked 4.5 miles on the first day compared to 5.6 miles in the control group. Walking time was 2.46 hours in the facilitator group and 3.11 hours in the control group.

"While negative stereotypical walking behaviors were decreased in calves placed with a social facilitator, we did not have any observable differences in body weight," she says. "We concluded that as an alternative weaning method, the use of a trainer cow is a noninvasive, non-labor-intensive management strategy that is a viable option for any producer to implement."

Calves will walk the fenceline when they are weaned. This photo was taken three days after calves in the control treatment were abruptly weaned and separated without a trainer cow.

Heifer calves hang out with the trainer heifer after the calves were abruptly weaned. The calves were outfitted with GPS collars to monitor their walking behavior after weaning.

The right role model

The first step is to select the right trainer. If a cull or nonpregnant cow is used, producers must control the estrous cycle. Walking behaviors in bull and steer calves, especially, increase if they are following a cow in heat, and that can negatively affect their weight gain.

"If you are putting only heifers in with the trainer on pasture, I don't think it matters. But if you are weaning steers and/or bulls, I recommend either using a bred heifer or controlling the estrous cycle. We used a bred heifer in our research," she says. "There have been studies done with steers as trainers in feedlots that did not show a difference in performance in those settings."

Bunk space is another consideration. Whether weaning calves in a feedlot or supplementing calves and the trainer cow on pasture, producers must provide enough bunk space so calves are not intimidated by the trainer cow at the bunk. If insufficient bunk space is provided, the mature

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Accustomed to being fed this way, the trainer heifer follows the feed buggy (far left). All 10 calves placed with her, though at the other end of the pasture in the shade, follow.

The same group of calves all came up to the bunk and were eating with the trainer heifer. Says Nickel: "There is merit to picking a good trainer."

trainer cow may prevent calves from accessing the bunk and affect their eating behaviors.

"It is important the trainer knows where the bunk is and is comfortable eating from it, whether in a feedlot or on pasture. If you can creep-feed calves and get them somewhat accustomed to eating a weaning pellet, they will most likely follow the trainer to the bunk faster than abruptly weaned calves," she says. "We weaned our calves on pasture and provided a weaning pellet, but I should note, we did not see any differences in weight gain the first two weeks after weaning."

As far as timing goes, Nickles brought the bred heifer into the rest of the cow-calf herd two to three weeks before starting the study. Previous work has shown cattle do recognize herdmates, but she did not address the question of how long they need to be with one another to be "familiar."

Unknowns

"It is possible we could incorporate docility EPDs (expected progeny differences) or mothering abilities in the future to choose the best trainers," she says. "We observed within different replications that some heifers are just more well-suited to be trainers, staying with the calves and leading them up to the feedbunk."

The trainer-cow method can effectively be used in both pasture and feedlot settings, depending on what a producer has available.

Nickles says additional research might reveal an ideal ratio of trainer cows to calves. In her work, she used one facilitator per 10 calves. She is not aware of any studies having used two or more trainers in the same pasture or pen. She also does not have recommendations for an ideal pasture size for weaning, but believes calves would likely walk any size pasture.

"All cattle will, however, perform exploratory behaviors when they are put into a new pasture or pen," she says. "To avoid this exploratory behavior where cattle walk the fenceline, I recommend weaning into a pasture familiar to the calves and not an excessively large pasture, as calves will typically walk the entire fenceline to attempt to find a way to get back to the cows."

Adding value

While the biggest advantage may be the easy-to-implement management practice, there also are economic benefits. A cull cow controlled for estrus can run with the calves while adding some weight or body condition to her own frame. That will add value in the cull-cow market.

"Nearly everyone has a bred or cull animal at that point in the season that could be used as a trainer," she says. "There is no up-front cost like there is with fenceline weaning. That requires investment in good fence to keep calves from getting hurt trying to get back to their mothers."

Nickles also believes the practice adds value to calves, as trainers can help calves find feedbunks faster. Doing so may step up the low dry-matter intakes usually seen right after weaning and could potentially add calf value through a preconditioning program.

"There is merit to picking a good trainer," she says. "Less docile or less maternal cows seem to shove calves out of the feedbunk. The good news is cows that pick on calves can be easily removed from the pasture since there is no money invested in their service as trainers."

Nickles sums, "The trainer-cow method can effectively be used in both pasture and feedlot settings, depending on what a producer has available. Bottom line, this is a simple management practice for reducing stereotypical walking behaviors at weaning to improve calf welfare."

Editor's note: Barb Baylor Anderson is a marketing communications consultant, specializing in writing, editing, public relations, media relations, audio/visual and economic analysis.