

# Two-Stage Weaning

Strategy employs anti-nursing nose flaps.

by Troy Smith

For the last several years, Ed Donley, of Clay Center, Kan., has been using the two-stage weaning strategy. When the calves out of Donley's commercial and registered Angus cattle are corralled for their late-summer preweaning vaccinations, an anti-suckling device is placed in the nose of each calf. That's Stage One. Cows and calves are then paired up and returned to pasture for several days before the calves are actually sent to the weaning pen. That's Stage Two.

The logic behind the two-stage strategy is to reduce the stress of weaning by addressing separately two stressors associated with the weaning process — a shift to a diet without milk and the breaking of the social bond between cow and calf. The calf still has the cow's companionship while wearing the anti-suckling device, which hangs from the calf's nostrils and prevents it from nursing its mother.

While two-stage weaning is a relatively new strategy, the anti-suckling device concept is not new. For many decades, various designs have been employed to prevent dairy cows from robbing milk from one another, as well as to keep calves from nursing cows. Most early versions were rather grisly-looking metal contraptions with spikes that made nursing pretty uncomfortable for the cow. The more modern design is a plastic nose flap that resembles a tab used to fasten a bread wrapper — only giant-size — and rather than inducing the cow to kick the calf away, it keeps the calf from getting an effective hold on the spigot.

## Learning from experience

At the suggestion of a veterinarian, Donley tried the two-stage weaning method. Pleased with the results, he decided to become a distributor for a manufacturer of anti-suckling nose flaps.



PHOTO COURTESY OF DEREK HALEY

► “We thought it worked pretty slick,” says Ed Donley, Clay Center, Kan., of using a two-stage weaning process during which calves are prevented from nursing prior to being removed from the cow. “Calves don’t worry, walk the fence and bawl like they did when weaned ‘cold turkey.’ They don’t shrink up and lose weight, and they seldom get sick. And you can clean up the nose tabs and use them year after year.”

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Experience did teach Donley that small calves are more apt to lose their nose flaps. He says lost flaps are rare when calves weigh at least 450 pounds (lb.) but he doesn’t recommend them for lighter calves.

Retention hasn’t been a problem for the Wilson outfit, even when calves fitted with nose flaps run among trees and brush on their range near Carrizozo, N.M. According to Kendal Wilson, several hundred calves are weaned annually; only one or two nose flaps are lost.

“It is a little more labor-intensive, because you have to put (the nose flaps) on the calves and remove them later,” Wilson states, “but it has made a big difference in the level of stress and resulting sickness in calves. We think it’s worth the extra effort.”

Two-stage weaning, utilizing nose flaps, has been applied to calves raised at the University of Missouri’s (MU’s) Forage Systems Research Center (FSRC), near Linneus, Mo. It hasn’t been part of any of their research studies, but superintendent Dave Davis says the method does appear to reduce anxiety in calves.

“The cows still bawl after separation, but the calves don’t seem to care very much. They’re pretty quiet,” Davis says. “We did learn that you can leave the nose tabs in too long, and make the calves’ noses sore. Leaving them in for only five days worked better.”

## Put to the test

There have been a number of formal studies of two-stage weaning, with the initial work done in Canada and led by Derek Haley, assistant professor of applied ethology and animal welfare at the Ontario Veterinary College, University of Guelph. Haley found that, compared to calves weaned by the traditional method of abrupt separation,

two-stage weaning reduced bawling among calves by 95%. Time spent walking and searching for their mothers was reduced by 60%, and the time spent eating was 30% greater than for abruptly weaned calves.

After being physically separated, two-stage cows and calves exhibited less stress behavior than pairs from the control group — those that underwent abrupt weaning. This was true even though two-stage animals were penned together with control animals that exhibited all the fuss that's typical of abrupt weaning.

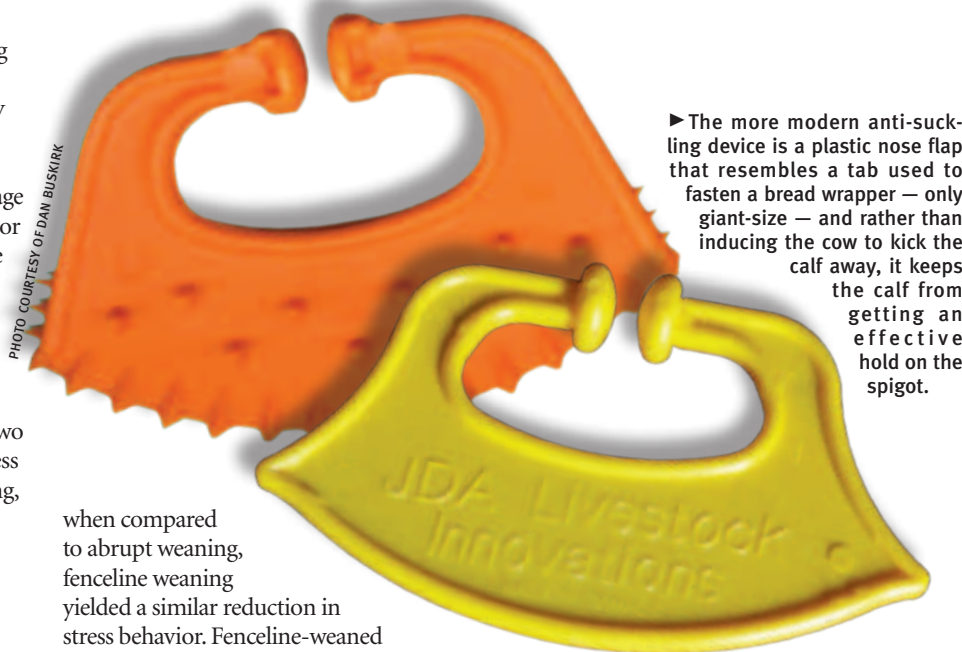
“Cows and calves that were weaned in two stages were clearly having a different and less stressful weaning experience, and the calling, walking and commotion of the control animals did not seem to influence their response,” says Haley.

Haley recommends implementing two-stage weaning by having calves wear nose flaps a period of four to seven days prior to separation. He says a study comparing the behavior of calves wearing nose flaps for three days to calves wearing them for 14 days showed no significant difference. There was no advantage in having calves wear the flaps longer, and wearing them for two weeks resulted in some calves developing pressure sores in their noses.

“That didn't set calves back any, based on our measures, but we decided that if you get the same result from having calves wear flaps for a short period of time, without the potential for raw noses, then that would be the better way to go,” Haley offers.

After reviewing research conducted in Montana and Virginia, as well as Canada, Boone Carter, Clay Mathis and Clint Loest co-authored a New Mexico State University (NMSU) report summarizing the results. They noted how conventionally weaned calves bawled 20 times more often than calves weaned in two stages with anti-suckling devices. Walking by two-stage weaned calves increased by about 15% while calves wore nose flaps during the first stage. However, after separation from their dams, conventionally weaned calves walked far more, taking about twice as many steps as calves weaned in two stages.

The report also noted how Virginia researchers compared two-stage weaning with conventional abrupt weaning and fenceline weaning. Results suggest that while two-stage weaning reduced stress behavior



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when compared to abrupt weaning, fenceline weaning yielded a similar reduction in stress behavior. Fenceline-weaned calves also exhibited superior performance during the first seven days postweaning. This prompted speculation that nose flaps may have caused enough soreness or sensitivity that feed intake was reduced. No long-term weight gain comparisons for the various weaning methods were made.

Michigan State University (MSU) researchers also looked at three weaning methods to determine what effects each method might have on postweaning weight gain, blood concentrations of haptoglobin (an indicator of stress and immune status), finishing performance and carcass merit. According to Dan Buskirk, Michigan Extension beef specialist, the two-year experiment involving calves at two different experiment stations compared abruptly weaned calves with calves weaned across the fence from their dams for five days (fenceline weaning) and to calves that wore nose flaps

for five days before being separated from the cows.

Buskirk says fenceline weaning offered a brief performance advantage, but by three weeks after weaning, calves from all treatments showed similar rates of gain. The performance of abruptly weaned calves took an expected dip early on, but the calves bounced back quickly. Calves weaned by the two-stage method spent more time grazing while wearing nose

flaps and running with their dams. They looked like they were eating more, but that wasn't reflected in performance.

Haptoglobin concentrations were highest among calves weaned in two stages, after wearing nose flaps for five days. Relative to weaning method, there were no significant

differences in the percentage of calves that received medical treatment. Finished body weights were not significantly different, nor were average daily gains in the feedlot. Weaning method appeared to have no effect on carcass traits, including quality grade.

“Two-stage weaning did affect behavior. Those calves didn't bawl, but that didn't translate into a performance advantage. The nose flaps put a nasty little lesion in the noses of most calves, and there is some evidence that sore noses caused some amount of stress,” Buskirk says.

“Two-stage weaning has merit. It probably does reduce stress, but a sore nose adds some back,” Buskirk adds. “I do think people should know, up front, that lesions are possible. Normally they should heal quickly. But, could causing a lesion potentially decrease immunity? I'd have to say 'yes.'”

For the last four years, Mark DeBoo and family have tried to reduce the stress of weaning by combining the advantages of two-stage weaning and fenceline weaning. The Valier, Mont., seedstock operation fits calves with nose tabs when preweaning vaccinations are given and returns them to their mama's company while the calves become accustomed to a milk-free diet. When implementing Stage Two, they also try to ease the breaking of the social bond.

“In about a week, we separate them, leaving calves and cows across the fence from each other for another few days,” DeBoo explains. “We can wean on grass this way. We think we're creating the least change in the calves' environment and making it as easy as possible for them. It really does seem to reduce stress for the calves, the cows and for us.”

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