

More On Two-Step Weaning

The November 2001, BEEF carried Canadian researchers' first report on their success with two-step weaning, a practice that weans calves while still on their mothers and minimizes stress on both calves and cows. Here's a follow-up report.

By Derek B. Haley, Joseph M. Stookey and Derek W. Bailey

Every cattleman knows that cows and calves show a strong reaction to the traditional method of weaning. The response is almost immediate after the mother and her young are separated.

The observable changes include an increase in calling and walking, and a decrease in the time the cattle spend eating and ruminating. The stress of weaning reduces weight gain and is likely an important factor contributing to the number of calves that get sick after weaning.

We began our research by trying to determine if the stress at weaning was related to the end of the nursing or due to the loss of social contact between the dam and calf. Traditional weaning imposes these two stressors simultaneously, but experimentally we were able to isolate these two factors.

A Two-Stage Experiment

- In stage 1 of our study, calves were fitted with an anti-sucking device for four days. It prevented nursing but still allowed calves to graze, drink and additionally ensured that calves could engage in all other aspects of social interaction with their mothers. The behavioral response to this situation was almost undetectable. Pairs stayed close together for the first couple of days but otherwise their behavior was virtually the same as control pairs that were still nursing.

- For stage 2 of the investigation we separated the cows and calves after they had been deprived of nursing for four days. The anti-sucking devices were removed at this time. Since pairs didn't react when nursing was prevented, we were confident that typical weaning behavior would be shown after pairs were separated. However, behavioral response to separation was minimal as well. For example two-step



A calf fitted with the anti-nursing device avoids separation stress.

calves barely called and spent more time eating after separation (See figures 1 and 2). Thus, we discovered a brand new low-stress way to wean cattle.

Verifying The Benefits

In a series of experiments, we've examined the effects of two-stage weaning and have taken various measurements to verify the benefits.

- In one study (Figure 3), we strapped pedometers to the legs of calves to record their walking behavior. Calves pastured with their mothers walked about three miles/day whether they were wearing the anti-sucking device or not.

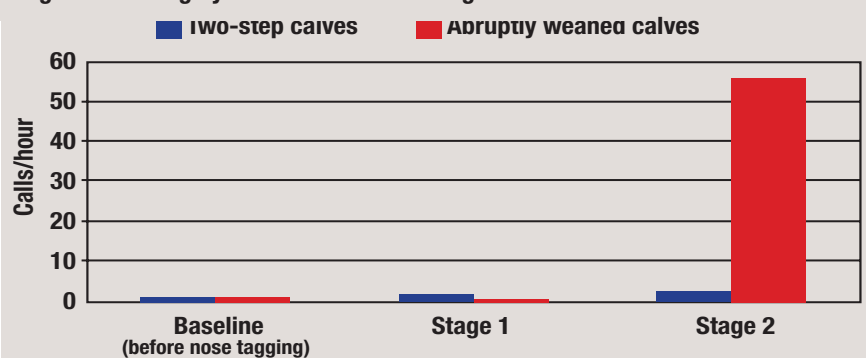
After pairs were separated, calves were moved into a feedlot pen. Calves weaned in two stages increased their mileage and walked 4.9 miles/day. However, the control calves (weaned abruptly), and housed in the very same pen, walked 12.6 miles/day during the same period. Just as in previous studies, the differences between two-stage weaned calves and traditional weaned calves were dramatic.

- Two-step weaning was then compared to weaning by separating cows and calves across a fence line. Weaning with fence-line contact has been shown to reduce the behavioral response of cattle compared to remote separation (moving cows and calves far away from each other).

The results of our study conclusively favored two-step weaning. Calves weaned in two steps called less, walked less and spent more time eating than calves weaned across a fence.

Another advantage of two-step weaning over the fence-line method is

Figure 1. Calling by calves around weaning



that two-step calves can be shipped, if necessary, on separation day. In one study, we transported calves on the day of separation and, despite any transportation effects, two-step calves settled far faster (called and walked less, and spent more time eating and resting) than traditional, abruptly weaned calves.

Some Common Questions

- How long should calves wear the anti-sucking device prior to separation? Preventing nursing for as little as four days is enough to greatly diminish the behavioral response of calves to separation. Even if the duration of this stage is doubled or tripled, calves behave quite similarly.

While the benefit to calves appears to be gained after nursing has been deprived for just a few days, cows may actually benefit if the pairs are kept together without nursing for a longer duration. We found cows prevented from nursing for eight days were less disturbed after separation than cows prevented from nursing for four days.



The anti-nursing device prevents calves from nursing but they can still graze, drink and engage in normal herd behaviors.

However, even cows in the four-day treatment still showed a greatly diminished response after separation compared to cows weaned the traditional way. We recommend that calves wear the anti-sucking device for four to seven days or up to 10 days to have an even greater calming effect on the cows after separation.

- Can the extra handling required to attach and remove the anti-sucking device from calves offset the benefits of two-step weaning? First of all, many producers are finding that other necessary chores (e.g., vaccinations, tagging, weighing, etc.) can be done when the

devices are inserted or removed. In addition, the handling time required for this procedure is very minimal as the device can be fitted or removed in five seconds.

Along with low-stress weaning, we also believe in low-stress handling in every situation and we always take care to move cattle calmly and quietly.

Our feeling is that any extra stress calves may endure due to handling is more than recovered by the tremendous reduction in weaning stress from two-stage weaning.

The benefits of two-stage weaning are entirely dependent on preventing nursing between cow-calf pairs before separation. Feedback from producers, as well as our own results, suggest the retention rate of the anti-sucking device is greater than 95%.

However, we've observed a few calves that were able to learn to nurse while wearing the device – a “skill” that seems to vary from herd to herd. We're currently designing and working with a manufacturer of the device to try and maximize its dependability. Even if no design improvements can be found, we ultimately feel that a dramatic reduction in weaning stress for 95% of the herd when weaned in two stages is far greater progress than weaning 100% by the more stressful traditional way.

The lightweight plastic anti-sucking devices we use currently retail for a little more than \$1 each. After being washed and disinfected, however, they can be reused.

The anti-sucking device simply acts as a physical barrier that prevents the calf from getting the teat into its mouth, but doesn't prevent it from grazing, eating or drinking. ♦

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Figure 2. Eating by calves around weaning

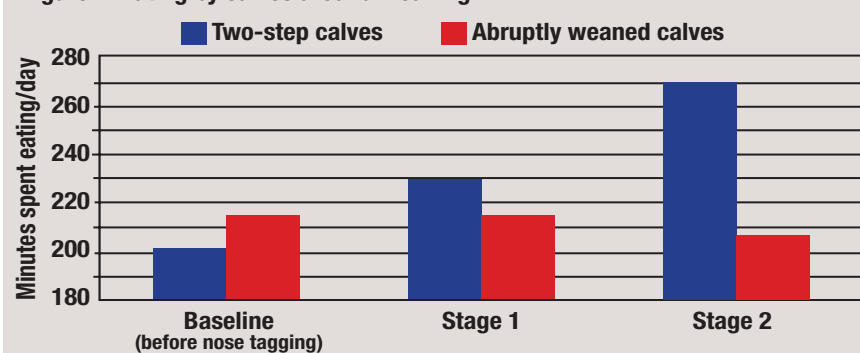


Figure 3. Distance walked by calves after separation from their dams

