

How to dehorn calves to minimize pain

There are things you can use that cause calves less discomfort when dehorned

By *Todd Duffield*

Removing horns reduces the risk of injury to handlers and other cattle. So choosing whether or not to dehorn calves isn't debatable. But how you dehorn calves is open for criticism and discussion.

Agricultural practices, such as keeping hogs in farrowing cages, are under increasing public scrutiny. Nonfarmers may view common management practices such as dehorning negatively and lower their opinions of dairying.

So it behooves all those within the industry – advisers and farm personnel – to choose a dehorning protocol that minimizes pain. A recent survey conducted in the Ontario dairy industry shows the following realities about dehorning in the province:

- Producers in the province dehorn 78% of dairy calves; veterinarians the other 22%.

- 23% of producers who dehorned their calves used lidocaine nerve blocks for reducing acute pain at dehorning. Of the veterinarians surveyed, 92% used local anesthetics for dehorning.

Putting these two figures together indicates that only 35 to 40% of dairy calves in Ontario receive the benefit of a local anesthetic at the time of dehorning. There is room for improvement. How does your farm compare?

When asked why they didn't use local anesthetic, survey respondents' reasons included cost, time, lack of awareness and an unnecessary practice. Producers who used lidocaine did so primarily for pain management. They considered it cheap and a way to enhance the safety for both the handler and the animal.

- The most common age in Ontario for dehorning dairy calves was 4 to 8 weeks old.

- The most common dehorning method was a Rhinehart (electric) dehorner.

Pain control strategies

Here are five suggestions for making dehorning less painful and, possibly, more socially acceptable.

1. Age. It's generally accepted that the younger

the animal, the less painful dehorning is. Whether this is a function of a physiologic age response or simply the effect of dehorning a smaller horn bud is difficult to say.

We conducted experiments at the University of Guelph where we dehorned calves younger than 4 weeks of age and at 6 to 10 weeks old. The younger calves dehorned with a butane dehorner had substantially fewer head shakes, head rubs and ear

Three steps for better dehorning

1. Consult your veterinarian for help in devising a calf dehorning protocol and learning the technical skills, such as administering a local nerve block.
2. Dehorn calves at a young age (less than 4 weeks old).
3. Choose one of two tools: a small dehorner, such as Portasol or Buddex, plus a nerve block, or caustic paste, which requires no nerve block.

flicks – behaviors associated with dehorning pain – in the hours following the procedure compared to older calves dehorned with an electric dehorner (Rhinehart).

The older the calf and the larger the horn, the more painful the procedure becomes. Instead of waiting to use gougers, keystone or wire on larger horns, it's best to dehorn calves at a younger age.

2. Method of dehorning. Even within the options for burning horns, the smaller devices – Buddex, Portasol, etc. – are a better choice and inflict less post-surgical pain than the Rhinehart or similar device.

Since butane won't burn or light under 50 degrees, in cool or cold weather we fill the portosol when we arrive on a dairy and put it in our pocket with the can of butane inside our down vest.

Always use butane with zero impurities since they can ruin the iron in about a week.

Caustic paste is another dehorning option. Research indicates that a local anesthetic block is unnecessary when using caustic paste and the pain response following dehorning minimal.

FYI

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There are two main reported problems with caustic paste: Either applying too much which can lead to eye loss in severe cases or applying too little which results in horn regrowth.

In a study we conducted at a custom heifer rearing facility, we observed no regrowth or eye problems in over 200 calves dehorned with caustic paste or caustic stick. The caustic paste formulation and application device have improved over time.

3. Pain management. Routinely administering a lidocaine block isn't that difficult and becomes part of the dehorning routine once you decide to use the block. Talk with your veterinarian about the procedure.

We use 5 mL of 2% lidocaine on each side injected with an 18-gauge 1.5-inch needle. The injection is usually one-third of the distance from the edge of the eye to the horn and at the approximate level of the eye, below the frontal crest bone. (See photo.) This is the ridge of bone running toward the horn.

It's helpful to fan the lidocaine out by slightly angling the injection in different directions. Depositing approximately 1 mL as you withdraw the needle appears to improve success.

Many people object to using a block particularly with smaller calves because they say they can't tell if the block worked. We conducted a study in 27 calves, where nine received lidocaine and the others received saline. The technician administering the blocks was blinded to the treatments and yet was able to correctly identify all nine calves that were blocked.

We recorded the behavior of these calves at the time of dehorning. Calves not receiving a block stamped their feet 22 times on average during butane dehorning compared to an average of four foot stamps in the blocked calf group.

Other behaviors associated with pain not being blocked were vocalization, rearing, kicking and falling. Less than half of the non-blocked calves vocalized, but vocalization only occurred in this group.

Other options to manage pain include:

- Non-steroidal anti-inflammatory drugs, such as flunixin meglumine (Banamine), are similar to Advil, Tylenol and aspirin for people. These products help manage pain in calves following dehorning. The best way to avoid having a reason to use these products is to simply dehorn calves when they're young.

We saw reduced ear flicks and improved calf starter intake when the anti-inflammatory ketoprofen was administered in calves 6 to 10 weeks old, dehorned with the Rhinehart dehorner.

(Ketoprofen is similar to flunixin meglumine but not available in the United States.) But we haven't seen additional benefit beyond lidocaine of using ketoprofen in calves younger than 4 weeks old, dehorned with a butane dehorner.

- Sedation. Many people like to use sedation, usually xylazine (Rompun), for dehorning calves. The Ontario survey indicated that 44% of the responding veterinarians use xylazine for dehorning primarily to enhance safety, for restraint and to control pain.

In fact, there is little pain control benefit to xylazine. If calves aren't blocked, they won't always respond to the dehorning procedure because of sedation, but they will still feel it. Administering xylazine without using lidocaine is not an acceptable method of pain management for dehorning. ■



Correct placement of lidocaine block – behind eye and under frontal bone crest (ridge).



When dehorning with the butane Portasol dehorner, clip hair first with scissors or clippers. This helps identify the horn bud, and hair won't mat over the top of the wound, decreasing the risk of infection.



Following proper dehorning with the butane Portasol dehorner, the bud should be cut around the entire circumference and right down to the skull. The horn bud should be removed to improve the healing process.