

Disbudding Calves

Preventing horn growth in cattle is an important farm safety practice because it prevents injuries to people and cattle. Horned cattle are discounted in beef markets. Using polled genetics is the best way to avoid having to remove horns. Beef genetics are often polled, but cross breeding with dairy cattle may result in horns. Monitor beef or beef x dairy crossbred calves during their first six weeks of life for the growth of horn buds and disbud immediately as they are identified. Acceptable methods for disbudding calves of all breeds include application of caustic paste or an electric/gas hot iron to destroy the horn producing cells of calves less than eight weeks of age (1). Both methods require proper training and oversight so that disbudding is complete. Beef cow-calf producers usually do not use caustic paste due to the risk of injury to the dam when grooming the calf's head to which paste has been applied.

In young calves, the use of a hot iron requires greater labor and restraint than does the use of caustic paste and is associated with the smell of burnt hair. Caustic paste should be applied within the first few days of life and is less effective and discouraged after the calf is two weeks old. There is potential for damage to calves' eyes and skin from caustic paste and improper application or run off can cause incomplete disbudding, requiring dehorning at a later age.

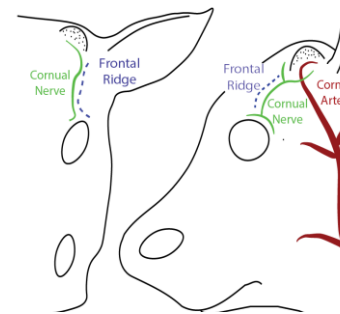
Disbudding Procedures are Painful

Pain can be minimized by disbudding cattle at a young age with proper pain management. Ideally, disbudding should occur prior to six weeks of age, and no later than eight weeks of age. Dehorning performed after eight weeks of age is considered a surgical procedure and should be done by a licensed veterinarian. In addition, for disbudding at any age, a pain-control protocol created in consultation with your veterinarian is expected.

(1) Pain control is considered the standard of care when disbudding/dehorning calves, according to the American Association of Bovine Practitioners (AABP). (2)

Steps for Using a Hot Iron

1. Restrain the calf's head using a halter or head restraint. Meanwhile, preheat the butane or electric calf dehorner. As the dehorner is preheating, keep it away from all flammable material.
2. Clip the hair to expose each horn bud.
3. Inject local anesthesia utilizing a cornual nerve block on both sides of the head to reduce the acute pain and discomfort associated with hot iron disbudding. The cornual nerve is located between the lateral aspect of the eye and the base of the horn bud just below the bony ridge formed by the frontal bone. Palpate the ridge between the eye and the horn bud. Slide a 20-22 gauge, ½" needle below the ridge at the midpoint between the eye and the horn bud, injecting 2% buffered lidocaine subcutaneously. Lidocaine is available with a VETERINARY PRESCRIPTION. Using lidocaine results in a 4-day meat withhold. The injection should be done 5-20 minutes before application of the hot iron. Test the effectiveness of the block before proceeding by pricking around the base of the horn bud with a



To ensure proper placement and dosage, CONSULT A VETERINARIAN within the context of the Veterinarian/Client/Patient Relationship



needle. If the calf responds, wait a bit longer or inject additional lidocaine. **CONSULT YOUR VETERINARIAN** for proper dosage and practice the injection technique with them.

4. Non-steroidal anti-inflammatory drugs (NSAID) are recommended in addition to local anesthesia to reduce the inflammation and associated pain following disbudding.
 - Meloxicam is an oral tablet available with a **VETERINARY PRESCRIPTION**. Meloxicam for pain management in animals is considered extra-label drug use through the VCPR. **CONSULT YOUR VETERINARIAN** for proper dosage. Use of oral meloxicam results in a 21-day meat withhold.
 - Flunixin is an anti-inflammatory drug that helps alleviate pain by reducing the inflammation caused by disbudding. Repeated dosing of flunixin is needed to alleviate pain following the disbudding procedure. This drug is given **IV ONLY** and results in a 4- day meat withhold. **DO NOT USE INTRAMUSCULARLY OR SUBCUTANEOUSLY**. **CONSULT YOUR VETERINARIAN** for proper dosage. Because withdrawal times have not been established in pre-ruminant calves, flunixin should not be given to veal calves.
5. When disbudding calves with heat, use a device with a diameter just larger than the horn base, so as to cauterize the skin immediately surrounding the horn bud. Apply minimal pressure and rock gently back and forth until a copper-colored ring forms, approximately 5-20 seconds. Do not leave the hot iron in place for much longer, especially in young calves. There is little chance of regrowth when the cauterized skin is loose or movable when touched following the procedure. The horn bud will slough off in approximately 3 weeks. Complete healing takes 9 weeks. (4)

Steps for Using Caustic Paste:

1. Restrain the calf's head using a halter or head restraint.
2. Clip the hair to expose each horn bud.
3. Inject a cornual nerve block as described above.
4. Apply petroleum jelly in a ring around the horn bud to keep the paste within the correct area.
5. Apply paste with gloved hands.
6. To prevent smearing after application, cover each pasted horn bud with duct tape or vet wrap or keep calves separated for a least one hour and out of the rain for at least six hours after applying paste. Calves housed with cows will transfer paste to the udder of the cow causing a burn. Calves housed in groups are likely to transfer paste to each other
7. Vinegar may be used to neutralize caustic paste inadvertently applied to the calf or the handler. (3)
8. Use NSAIDs as described above.



Example of proper head restraint.

All drugs mentioned in this factsheet require a veterinary prescription and should be done only in the context of a valid Veterinarian/Client/Patient Relationship (VCPR). Organic producers should consult certifying agency for the list of approved products for local anesthesia and pain management for dehorning/disbudding.



References

1. National FARM (Farmers Assuring Responsible Management) Animal Care Reference Manual V 4
2. American Association of Bovine Practitioners:
https://aabp.org/Resources/AABP_Guidelines/Dehorning-2019.pdf
3. Winder, Charlotte. Using Pain Mitigation When Disbudding Calves. January 24, 2020. Progressive Dairyman Magazine. Retrieved August 2020. <https://www.progressivedairy.com/topics/calves-heifers/using-pain-mitigation-when-disbudding-calves>
4. Adcock, S.A., and C.B. Tucker. 2018. The effect of disbudding age on healing and pain sensitivity in dairy calves. *J. Dairy Sci.* 101:10361-10373.

Authors

Sandy Stuttgen, DVM, Associate Professor and Agriculture Educator, University of WI-Madison Division of Extension and Jennifer Van Os, Ph.D., Assistant Professor and Extension Specialist-Animal Welfare, Department of Animal and Dairy Sciences, University of WI-Madison

Update of *Disbudding/Dehorning Calves* fact sheet written in 2014 by Liz Binversie, MS, Agriculture Educator, UW-Extension Brown County, Sandy Stuttgen, DVM, Agriculture Educator, UW-Extension Taylor County, and Amy Stanton, Ph.D., Dairy Cattle Wellbeing Specialist, UW-Extension/UW-Madison

Reviewers

Sarah Adcock, Assistant Professor, Department of Animal and Dairy Science, University of Wisconsin-Madison.

Megan Nelson, Ph.D. Livestock Program Manager, University of WI-Madison Division of Extension