



Pain Control in Beef Cattle

Common production practices such as branding, castration, or dehorning are often necessary on beef operations, however they do cause pain to the animal. *Acute* pain generally lasts for a few hours, but is often quite intense. *Chronic* pain is less intense, but can last for days or weeks.

Cattle are considered to be a prey species, meaning they try to hide signs of pain so they don't appear weak to their predators. Researchers are able to monitor and measure pain using physiological responses, such as amplified brain wave activity or increased cortisol levels, during and after certain painful procedures. The way an animal acts or behaves may also demonstrate that an animal is in pain. An animal displaying signs of tail-flicking, head-shaking, pacing or kicking can be subtle indications that an animal is in pain.



Producers may feel a moral obligation to prevent or minimize pain in animals under their care, however there are also production benefits to providing effective pain mitigation. Fortunately, there are several measures that producers can take to minimize pain associated with these practices. Pain control products are now available for producers to use on livestock and there are also many best practices, including performing painful procedures at an early age, which are easy to adopt. Also, through the recent National Code of Practice for the Care and Handling of Beef Cattle, Canada recently established pain control requirements for different procedures.

Producers should seek advice from their veterinarians prior to undertaking painful procedures in their animals to ensure they are using optimum methods, timing, and pain mitigation techniques.

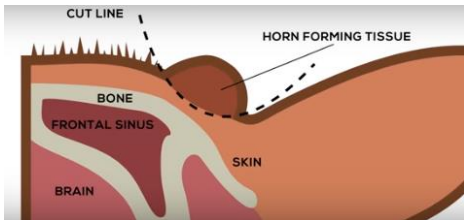
Routine Painful Procedures

Castration, whether by surgical, banding, or burdizzo methods, all cause pain to the animal. Some methods, such as surgical castration, cause acute pain, whereas banding, for example, is more likely to cause chronic pain. **It is important to castrate animals at the earliest age possible.** This reduces the amount of tissue impacted, reduces pain, improves gain during the feedlot phase, reduces marketplace discounts, and lowers the risk of further pain or complications later in life.

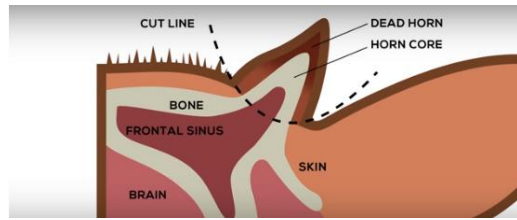
Dehorning can easily be accomplished using polled genetics. Very young calves can be disbudded using caustic paste or hot iron disbudding before the horns have attached to the skull (i.e. 2-3 months of age). Older animals can be dehorned using scoops or saws, but these practices are more painful and risky. Tipping, which removes the end of the horn but leaves most of it intact, is a less risky method of dehorning older animals than complete horn removal.

As of **January 1, 2016**, the National Code of Practice requires the use of pain control when castrating bulls **older than 9 months**. As of **January 1, 2018**, pain control is required for castrating bulls **older than 6**

Figure 1. Dehorning cattle at different ages



Hornbuds on a calf less than 2-3 months of age



Developed horns on an animal older than 2-3 months of age



A corneal nerve block may be employed on older animals to be dehorned

As of **January 1, 2016**, the National Code of Practice requires the use of pain control when dehorning after the horn bud has attached.

Branding is one of the few, permanent and visible ways to mark or identify cattle. Many lending institutions and community pastures require cattle to be branded and it is often also an export requirement. Branding does cause pain in cattle, however producers can help to reduce unnecessary pain by using proper tools and techniques, avoiding branding sensitive areas, and ensuring hides are clean and dry prior to applying a brand.

When undergoing routine painful procedures, ensure they are performed as early in the calf's life as possible, by a competent operator using clean, properly maintained tools.

Pain Control Products

Pain control drugs are available for cattle through a veterinary prescription. Analgesics, such as non-steroidal anti-inflammatories (i.e. NSAIDs), are a type of drug that will temporarily reduce the effects of pain but not all sensation. Analgesics can be administered intramuscularly, intravenously, or orally, making them a practical option for producers. Local anesthetic drugs can be used, which temporarily block feeling or sensation in a localized area. General anesthetics can also be administered, rendering an animal temporarily unconscious. Special care needs to be used when administering anesthetic drugs, however, and only properly trained personnel should use these drugs.

Producers have options for reducing or minimizing pain in cattle during routine procedures as well as in unusual circumstances such as *injury* or *difficult labour*. Producers should consult with their veterinarian to ensure they are undertaking the appropriate procedure, using the proper tools, and using correct medication where necessary to support the welfare and productivity of their herds.

A combination of **anesthetic** and **analgesic** drugs provides the best pain control for animals.

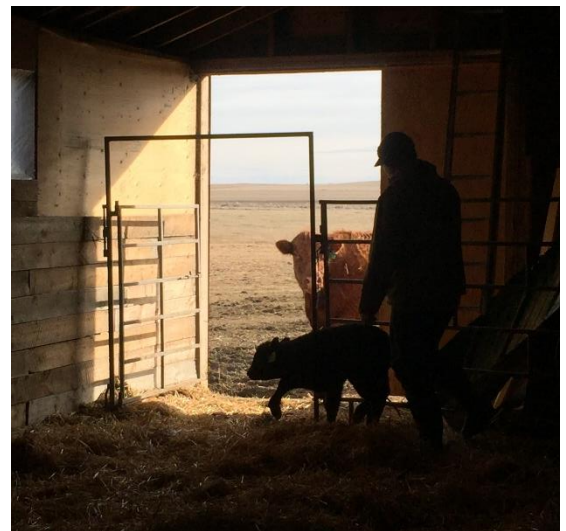


Table 1. Pain Control Products Licensed and Available for Beef Cattle in Canada*

Drug	Brand Name (and Route of Administration for Beef Cattle)	Route of Administration for Beef Cattle	Label Claim in Beef Cattle
Meloxicam	Metacam® 20 (subcutaneous or intravenous injection); Meloxicam Oral Suspension (oral)		Pain relief following de-budding in calves less than 3 months of age. Symptomatic treatment of inflammation and pain due to acute clinical mastitis. Relieves pain and inflammation following surgical and band castration in cattle.
Ketoprofen	ANAFEN®, KETOPROFEN V (both intravenous or intramuscular injection)		Treats symptoms of fever, pain and inflammation due to respiratory tract infections, mastitis, udder edema, downer cow syndrome, endotoxemia, gastrointestinal disorders, arthritis and traumatic injuries
Flunixin meglumine	Banamine®, CRONYXIN®, Flunazine®, Flunixin Injection (all intravenous)		Controls fever due to endotoxemia and acute bovine mastitis, and inflammation due to endotoxemia
Acetylsalicylic Acid	Acetylsalicylic Acid Bolus, ASEN P Powder, ASEN 240 Bolus (all oral administration)		For use as an aid in the symptomatic relief of pain
Lidocaine	Lido-2, Lidocaine HCL2% (alone or with epinephrine), Lidocaine Neat, Lurocaine (all injectable administration)		For epidural, nerve block or infiltration anesthesia

* Every effort has been made to ensure the accuracy of the information above. However, it remains the responsibility of the readers to familiarize themselves with the product information contained on the product label or package insert. Ensure label directions and veterinarian instructions are followed when using any veterinary product.

The Beef Cattle Research Council, a division of the Canadian Cattlemen's Association, sponsors research and technology development and adoption, in support of the Canadian beef industry's vision to be recognized as the preferred supplier of healthy, high quality beef, cattle and genetics.

For More Information Contact:

Beef Cattle Research Council
 #180, 6815 – 8th St NE
 Calgary, AB T2E 7H7
 Tel: (403) 275-8558 Fax: (403) 274-5686
 info@beefresearch.ca

For More Information, Visit:

www.beefresearch.ca

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