

CASTRATION IN BEEF CATTLE

HOW TO PREVENT PAIN AND STRESS

BACKGROUND

Castration is a common, and often necessary, management practice in the beef industry. Aggressive behaviour and lower meat quality (tougher, darker coloured meat) of intact males are some of the reasons for performing castration. The current methods of castration include the use of:

- Rubber Ring (Elastrator) or Band
- Burdizzo (Clamp)
- Surgical Knife

When performed without anesthesia or analgesia, all methods of castration have consistently been shown to be acutely painful and stressful^{1,2,3,4}.

In North America, bulls are castrated at anywhere between 1 day of age to well past weaning age and sexual maturity, normally without any pain mediation.



In many European nations, and recently in New Zealand, castration techniques are regulated, with the goal of minimizing animal pain and stress through the use of anaesthetics and analgesics.

TECHNIQUES AND WELFARE CONCERNS

Each method of castration has benefits and drawbacks, which should be considered when selecting a method.

A veterinarian will need to be involved in this process and may be the best source of advice for how to incorporate these procedures into regular management practices.

- Surgical castration
 - Shortest healing time of any method⁴
 - Acutely painful without pain mediation^{1,2,3}; short-term risk of infection after procedure
- Rubber band / ring castration
 - Less painful than surgery at the time of the procedure without pain mediation
 - Long healing time, with a possibility of severe swelling, infection, and chronic pain⁴
- Clamp (burdizzo) castration
 - Less painful than surgery at the time of the procedure without pain mediation
 - Long healing time as with band/ring methods; complete castration not always achieved⁵

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MINIMIZING PAIN

During the Procedure: administering a **local anesthetic** such as Lidocaine numbs the area and prevents the animal from feeling the procedure.

After the Procedure: administering an anti-inflammatory **analgesic** such as Ketoprofen relieves pain that endures for several hours after the procedure.

SPCA CERTIFIED REQUIREMENTS

Preventing Pain and Stress

- The SPCA Certified Standards require the use of methods for pain mediation during castration for all cattle over 7 days of age.
- At this time, all methods of castration are permitted. When castration is performed after the first week of life, steps must be taken to minimize the pain and stress experienced.
- The goals of applying pain mediation are two-fold:
 1. Eliminate the pain experienced during the procedure by using a **local anesthetic** such as Lidocaine.
 2. Minimize the pain that endures after the procedure by using an **analgesic** such as Ketoprofen.

OTHER CONSIDERATIONS

Reducing Healing Time

- Healing time is an important factor to consider, but it is not part of the current SPCA Certified Standards.
- Animals castrated using a ring, band, or clamp (Burdizzo) take much longer (by 1-2 months) to heal completely, than those castrated surgically. For this reason, we *recommend* the use of surgical castration over other methods.

Age at Castration

- No matter which method is used, the younger a calf is at castration, the more quickly the wound will heal.
- In contrast to common beliefs, current research suggests that there is little advantage in delaying castration in order to achieve higher weight gains¹.
- The National Organic Standard of Canada (CAN/CGSB-32.310.-2006) states that castration shall be done at the youngest age possible (< 2wks), and that surgical procedures shall be done in a manner that minimizes pain, stress and suffering, with consideration to the use of anesthetics and sedatives.

¹ Livestock Production Science. 2005. Effects of age and method of castration on performance and stress response of beef male cattle: A review;

² Journal of Animal Science. 2002. Effects of ketoprofen alone or in combination with local anesthesia during the castration of bull calves on plasma cortisol, immunological, and inflammatory responses

³ Applied Animal Behaviour Science. 1995. Assessment of acute and chronic pain after different methods of castration of calves;

⁴ Research in Veterinary Science. 2002. Effects of local anaesthesia or local anaesthesia plus a non-steroidal anti-inflammatory drug on the acute cortisol response of calves to five different methods of castration.

⁵ Veterinary Record. 1996. Castration of calves: A study of methods used by farmers in the United Kingdom.

Copies available upon request.

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