Pain Management Chart

The following chart offers suggestions on pain management methods for procedures requiring pain management under the Certified Humane® program, as all animals with central nervous systems experience pain, which is not always directly observable.

*This document is meant to serve as guidelines for worldwide producers and their veterinarians. Therefore, suggestions may not reflect what is available in every area.*

Prior to using methods referenced below, producers in conjunction with a veterinarian must develop a pain management plan as part of their Animal Health Plan.

*See references below for supporting scientific literature.*

<table>
<thead>
<tr>
<th>Cattle</th>
<th>Castration</th>
<th>Dehorning/Disbudding</th>
<th>Supernumerary teat removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral meloxicam (crushed tablets cost a few cents, can administer orally with molasses); Flunixin meglumine (Banamine®) injection; Local anesthesia</td>
<td>Local lidocaine (lignocaine); Local anesthesia (bupivacaine) combined with anti-inflammatory drugs (ketoprofen); Cauterizing the wound under local anesthetic; Oral meloxicam; Other NSAIDs</td>
<td>Local anesthetic injection</td>
<td></td>
</tr>
<tr>
<td>Goats</td>
<td>Analgesics and local anesthesia combined</td>
<td>Analgesics and local anesthesia combined</td>
<td></td>
</tr>
<tr>
<td>Sheep</td>
<td>Topical anesthetic with lidocaine (lignocaine) and bupivacaine; Analgesics and local anesthesia combined</td>
<td>Analgesics and local anesthesia combined</td>
<td></td>
</tr>
<tr>
<td>Pigs</td>
<td>Local anesthesia only; Topical combination of local anesthetic and antiseptic; Analgesics combined with analgesics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Scientific Research Supporting Pain Management**

**Cattle**

- “All castration methods [in cattle] have been demonstrated to produce physiologic, neuroendocrine, and behavioral changes indicating pain and distress.” Coetzee, Johann F. “Assessment and Management of Pain Associated with Castration in Cattle.” *Vet Clinic Food Animal*. Elsevier. 2013.

- “Standard husbandry procedures” including tail docking, castration, mulesing, and ear tagging or marking cause pain in ruminant animals. The pain caused by these procedures can manifest physiologically, biochemically, immunologically, and behaviorally.” Egger, Christine M.; Love, Lydia; Doherty, Tom. “Pain Management in Veterinary Practice.” *Wiley Blackwell*. 2014.

- “Dehorning causes behavioral, physiologic, and neuroendocrine changes, indicating a stressful or painful response in cattle. Following dehorning, an acute painful response is observed within the first 30 minutes followed by a period of suggested inflammatory pain lasting up to 8 hours.” Stock, Matthew L.; Baldridge, Sarah L.; Griffin, Dee; Coetzee, Johann F. “Bovine Dehorning: Assessing Pain and Providing Analgesic Management.” *Vet Clinic Food Animal*. Elsevier. 2013.

- “Extensive research has shown that dehorning stimulates both an acute pain response and a delayed inflammatory reaction,” which are “measured through physiological, behavioural, and pain sensitivity responses.” Duffield, T. “Current data on dehorning calves.” *Proceedings of the 41st Annual Conference of the American Association of Bovine Practitioners, Charlotte, North Carolina, USA.* (25-28). 2008.


- “Calves that are knife-castrated and branded at the same time showed more physiological and behavioral indicators of acute pain than solely-knife-castrated calves, “suggesting that the combination of knife castration+branding was more painful.” Meléndez, D. M.; Marti, S.; Pajor, E. A.; Moya, D.; Gellatly, D.; Janzen, E. D.; Schwartzkopf-Genswein, K. S. “Effect of subcutaneous meloxicam on indicators of acute pain and distress after castration and branding in 2-mo-old beef calves.” *Journal of Animal Science 2018 Vol. 96 No. 9 (3606-3621).* 2018.

**Pigs**


- “Evidence shows that castration is painful and has a detrimental influence on pig health...Surgical castration has a negative impact on production in the suckling period because it causes an increase in pre-weaning mortality...and negatively affects the body weight at weaning in pigs.” Morales, Joaquin; Dereu, Andre; Manso, Alberto; de Frutos, Laura; Piñiero, Carlos; Manzanilla, Edgar G.; Wuyts, Niels. “Surgical castration with pain relief affects the health and productive performance of pigs in the suckling period.” *Porcine Health Management*. 2017.


**Goats and Sheep**

