

GUIDE TO CAUTERY DISBUDDING CALVES

Hot iron disbudding destroys the corium by the short-term application of intense heat. The technique produces minimal pain because the heat also destroys the sensory nerves in the process and side effects, such as bleeding, infection and fly strike are rare.¹

The tip of the cautery iron must be large enough to entirely cover the horn bud of the calf. Aim to disbud your calves as soon as practicable and before two months of age, as this can prevent the problem of calves with oversized buds and minimise the size of the burn area. Test the tip size on the largest calf in the group before turning the burner on.

Thermal cautery (or hot iron) disbudding destroys the horn-producing cells at the base of the horn and prevents further growth

It is less painful than dehorning as it destroys the sensory nerves in the process

The procedure is bloodless and presents minimal risk of wound infection, haemorrhage or flystrike

Cautery is best used in calves up to 6 weeks of age, but can be used up to 8 weeks

Cautery should only be carried out by suitably trained personnel

This fact sheet describes how to successfully use thermal cautery (hot iron) units to disbud dairy calves.

Thermal cautery equipment needs time to reach operating temperature. This may only take a few minutes with a gas burner but can be up to 15 minutes for electrical units – especially on cold and windy days. It is important that the burner tip is allowed to return to operating temperature between uses.

Thermal cautery units present a fire risk and a risk of personal injury during operation. The hot iron must be secured whilst heating up and between calves to ensure safe operation. Place the hot iron into a dedicated stand or suspend from the calf crush between uses. Keep a bucket of water nearby in case of accidental fire.

Effective calf restraint is essential for safe, fast and effective operation. Adequate restraint provides better calf and operator safety, reduces animal stress and speeds workflow. The ideal restraint is a custom-built calf crush with inbuilt head restraint. This minimises movement of the calf's head during the procedure, reducing the risk of burn injuries to the calf and operator. It also allows the operator to work in a more comfortable standing position, as well as reducing fire risk.



The procedure should only be undertaken by or under the guidance of an experienced operator.

Disbudding will cause pain and discomfort to the calf. Local anaesthetics can be used to block the pain at the time of the procedure and for a few hours afterwards but are only available from or under the supervision of a veterinarian.

Ongoing pain relief for up to three days can be provided by the injection of anti-inflammatory drugs and are also

¹ Petrie N, Mellor DJ, Stafford, KJ, Bruce RA and Ward RN (1996). Cortisol responses of calves to two methods of disbudding used with or without local anaesthesia. *New Zealand Veterinary Journal* 44: 9-14.

only available by prescription from your veterinarian. Studies have shown that calves treated with local anaesthetics and anti-inflammatory drugs recovered better and had less growth rate check in the days following disbudding than those without.^{1,2}

Some veterinarians will also initially sedate the calves, which further minimises stress on calves and operators from handling. Spray-on gel solutions are available 'over the counter' through rural suppliers and veterinarians without prescription. They minimise pain, bleeding and infection following disbudding and are recommended if local anaesthetic nerve blocks and anti-inflammatory drugs cannot be used instead.

How to use a thermal cautery (hot iron) unit to disbud calves:

- 1 Ensure the disbudding iron tip is hot enough for the procedure.
- 2 Place the calf into the calf crush and restrain the head.
- 3 Place the iron tip onto the horn bud when the calf has settled. Ensure the leading edge of the iron tip makes firm contact with the skin around the base of the bud.
 - You may carefully rotate the iron to ensure effective cautery of the skin around the whole of the circumference of the bud. This may be necessary in calves with protuberant buds.
 - Removal of the actual bud using a scooping manoeuvre is not essential. The destruction of the horn-producing corium is the objective.
 - The process should be completed in six to eight seconds per side. Excess pressure and/or excess application time can result in damage to deeper tissues (including the brain).
- 4 Confirm that there has been effective cautery around the base of the horns. There should be no bleeding and a copper-coloured burnt margin in the skin should completely circle the bud. If you see residual white skin or pink underlying tissue you will need to re-apply the burner to ensure all corium has been destroyed.



Applying the hot iron to the horn bud

- 1 Petrie N, Mellor DJ, Stafford, KJ, Bruce RA and Ward RN (1996). Cortisol responses of calves to two methods of disbudding used with or without local anaesthesia. *New Zealand Veterinary Journal* 44: 9-14.
- 2 Stafford, KJ, Mellor DJ (2011). Addressing the pain associated with disbudding and dehorning in cattle. *Applied Animal Behaviour Science* 135:226- 231



Successful cautery disbudding. Note the copper-coloured burnt margin around the horn bud

- 5 Check the calf for distress or bleeding before releasing from the crush. Apply a gauze pad with pressure if bleeding is present.
- 6 Apply spray-on gel solution to the wound immediately after disbudding to help control pain, bleeding and infection. If not available, apply an antiseptic spray to the wound to minimise risk of infection and repel flies around the wound.



Apply gel topical pain relief products immediately after cautery disbudding. Photo credit – Linda Hansen

- 7 Observe the calves for distress or discomfort in the hours following disbudding.