SOP No: ATT 075  
SUBJECT: Disbudding and tipping cattle  
DATE ISSUED: 16.07.2014  

POLICY: Minimum number of two operators required.  
Demonstrator: experience in this procedure  
Students: competence in handling cattle; students should practice heating and applying the hot iron to a suitable inanimate model before using this technique on live animals.  
Veterinary supervision: the drugs recommended in this procedure must be given under veterinary supervision.  
Animal welfare considerations: The Code requires that animals are protected from undue pain and distress and the analgesia described in this SOP is designed to address this requirement. Commercial practice may differ from this in that no analgesia is used. However, practice is changing and commercial animal managers are encouraged to adopt the procedure described in this SOP.

PRECAUTIONS: Wear sturdy footwear and sun protection  
Cattle should be handled quietly before, during and after the procedure  
Understand the flight zone of the animal  
Cattle should not be overcrowded in yards  
Be aware that cattle may attempt to turn in the race leading to the crush, and may back away from the head stall.  
Cattle which respond aggressively to yarding or restraint in a crush should not be used for teaching.  
Wash hands and exposed body parts thoroughly with soap and water after handling animals

EQUIPMENT: yards, crush, ear tagging pliers, ear tags and buttons.

PROCEDURE: Restrain calves and adult cattle in a crush, using a head bail.

A. Disbudding of Calves:

The removal of the tissue from which the horn will grow as the animal matures. This must be done before the horn bud attaches to the skull, i.e. before the calf reaches 2 months of age. Prepare the calf for the operation by giving an injection of 3 mg/kg liveweight of ketoprofen (Ketofen 10%) into the jugular vein. Then give a subcutaneous injection of 5 mL of 2% lignocaine hydrochloride around each cornual as follows:

- Locate the injection site (see point X in the figure) for the local anaesthetic by putting your thumb on the skin just beside the outside corner of the eye. You will feel a soft depression at this site. Now, move your thumb backwards toward the horn. You will feel a small groove that runs in the bone of the skull. The nerve runs along and under this groove. The injection site is in the upper third (closer to the horn bud) between the corner of the eye and the base of the horn.
- Disinfect the site with an alcohol swab.
• Use a 20- or 18-gauge, 25 to 30 mm needle.
• Use a 10 mL syringe.
• Use from 3 to 10 mL of 2% lignocaine hydrochloride with epinephrine for each horn. The volume depends on size of calf.
• While holding the head steady and with the needle on the syringe, push the needle through the skin at the injection site. The needle should penetrate perpendicular to the skull at the site. Once you are through the skin, pull back on the plunger to be sure the needle is not in a blood vessel; then inject about 1.5 mL of lignocaine. Push the needle in about 5 mm and inject another 1.5 mL. Push it in about another 5 mm and inject the remaining lignocaine. Then withdraw the needle. If you hit the bone with the tip of the needle, withdraw it slightly and give the last of the lignocaine.
• Repeat on the other side of the head.
• You may need to wait several minutes for it to take effect. The upper eyelid usually droops with correct injection techniques. Failure may occur if the injection went too deep at the site.

(Figure from Ontario ministry of Agriculture and Food, 2013)

(b) Disbudding: with the calf firmly restrained and the iron heated to a cherry red colour, apply the cautery iron firmly over the emerging horn bud. Do not apply the hot iron for more than 10 to 15 seconds as damage to the brain may occur. Roll the hot iron over the horn bud several times so that a ring of tissue at least 1 cm wide around the bud is burnt through the full thickness of the skin. Heat must be transferred evenly all the way around the horn bud to ensure that the horn growth tissue is destroyed. In due course the horn bud will drop off.

After disbudding, calves should be inspected at least once daily for the first 10 days, and any infected wounds treated. In those situations where flies are a problem, a suitable fly repellent
should be applied at the time of dehorning. If a calf appears to have suffered injury to the brain (see dot point 2, below) obtain immediate veterinary assistance.

**Tipping Horns of Adult Cattle:**

The removal of the sharp points of the horns of adult cattle is known as horn tipping. This procedure is used to relieve the irritation caused when a curled horn grows back into the head. It is of little use in preventing bullying or hide or muscle damage when applied to cattle with normal horns. Only the tip of the horn, i.e. the last 4 or 5 cm, is removed. Because the mature horn in cattle is not innervated there is no pain sensation and no need to use an analgesic. However, the animal may react adversely to the pressure and restraint which must be applied in order to remove the tip. If necessary, consult a veterinarian to obtain restraint by anaesthetic.

If possible (i.e. the horn is not too large in diameter) use large dehorner’s to remove the horn tip. Where this is not possible, embryotomy wire (ensure that the wire is not rusted or frayed and has suitable handles) or a bone saw is used to saw through the horn tip.

With the calf firmly restrained and the iron heated to a cherry red colour, apply the iron firmly over the emerging horn bud. Roll the hot iron over the horn bud several times so that a ring of tissue at least 1 cm wide around the bud is burnt through the full thickness of the skin. Heat must be transferred evenly all the way around the horn bud to ensure that the horn growth tissue is destroyed. In due course the horn bud will drop off.

After dehorning, cattle should be inspected regularly for the first 10 days, and any infected wounds treated. In those situations where flies are a problem, a suitable fly repellent should be applied at the time of dehorning.

**Note that:**

- The benefits of hot iron (cautery) dehorning are that it can be carried out at any time of the year. There is no loss of blood and no wound to become infected.
- European practice, and the procedure recommended by the NSW Agriculture, is that disbudding should be carried out under veterinary supervision.
- Tipping: The removal of the sharp points of the horns of adult cattle is known as horn tipping. This procedure is used to relieve the irritation caused when a curled horn grows back into the head. It is of little use in preventing bullying or hide or muscle damage.
- Only the tip of the horn, i.e. the last 4 or 5 cm, is removed. Because the mature horn in cattle is not innervated there is no pain sensation and no need to use an analgesic. However, the animal may react adversely to the pressure and restraint which must be applied in order to remove the tip. If necessary, consult a veterinarian to obtain restraint by anaesthetic.
- Poor technique can cause damage to the brain if the iron is applied for too long, or regrowth of a scur (a malformed horn) if the horn bud is not completely destroyed.
- If possible (i.e. the horn is not too large in diameter) use large dehorner’s to remove the horn tip. Where this is not possible, embryotomy wire (ensure that the wire is not
rusted or frayed and has suitable handles) or a bone saw is used to saw through the horn tip.

RECOMMENDATIONS:

REVISED:

REFERENCES