

# Cattle Producer's Handbook

Management Section

750

## Dehorning Cattle

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Horns on cattle can, and do, cause bruises and other injuries to other animals, especially during transport, handling, and in confined feeding areas. Dehorned cattle look more uniform, feed better, and bring a higher market price. Horns on adult cattle also can be a hazard to humans and equipment. Hornless cattle require less space in the feedlot and at the feed bunk. Polled breeds should be used whenever possible.

When horned breeds of cattle are selected, dehorning (removal of horns) should be performed while the cattle are young and under the supervision of experienced persons using proper techniques. Dehorning subjects animals to short-term discomfort for long-term benefits.

The goals should be to have all calves dehorned in an effective, humane manner before 3 months of age. These young calves suffer less stress because they are more easily handled, and the preferred methods cause little or no bleeding, heal quickly, and do not result in any significant setbacks. The horn buds can be removed at birth or within the first month after birth by several means, including hot cauterizing irons, cauterizing chemicals, a sharp knife, or commercially available devices.

When necessary to remove horns from older cattle, strategies aimed at minimizing pain and bleeding and prevention of infection should be employed, and a person knowledgeable and experienced in the appropriate procedures should perform the dehorning. Appropriate restraint and local anesthesia to control pain should be used when cattle older than 1 month of age are dehorned.

Cattle should be monitored for hemorrhage and infection after dehorning. Adult cattle should be dehorned only if the individuals are aggressive toward humans or other herd-mates. Producers need to be aware that dehorning may temporarily reduce nutrient intake of cattle, thus depressing growth.

Tipping of horns (removing the insensitive tip only) can be done with little impact on the well-being of in-

dividual animals. Caution must be used when tipping horns not to cut too deep and enter the vascular tissue, potentially increasing hemorrhage. Upon shipping, cattle with tipped horns experienced similar amounts of carcass bruising as non-tipped cattle.

Cattle should be dehorned on dry, cool days to allow the wounds to dry quickly with the minimum risk of infection. The best time is late afternoon, when fly activity is low. Never dehorn cattle in wet weather, because the healing rate is decreased, and the risk of infection increases.

### Sanitation Precautions

Instruments used in dehorning must be kept clean, sharp, and disinfected thoroughly before each use (also see 615). This will help prevent infected wounds and the spread of infectious diseases. Operators should also keep their hands clean. Application of antiseptics to the calf's skin before dehorning is of little benefit, unless the hair is shaved and the area scrubbed with soap several times before the antiseptic is applied.

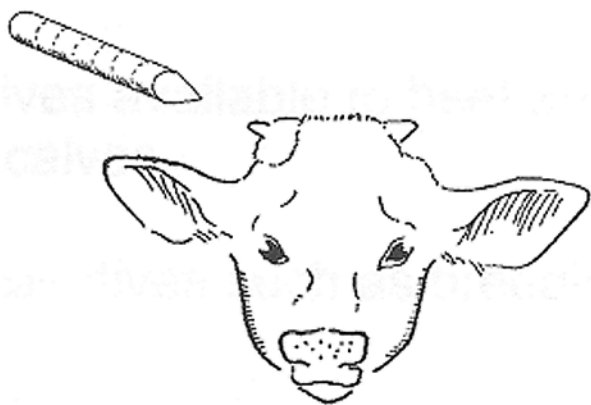
Several disinfectants are available on the market, such as chlorhexidine (Nolvasan), Lysol, and various quaternary ammonium preparations. Each has certain advantages and disadvantages. Iodine is a skin antiseptic but is corrosive to instruments. The local veterinarian should be consulted on specific disinfectants.

### Dehorning Methods

#### Bloodless Dehorning

The objective of these methods of dehorning is to destroy a small ring of skin encircling the horn button. Horn tissue is formed from specialized cells located in this area of skin. To be successful, these methods should be used before significant horn growth occurs.

Producers should place **caustic pastes** on the horn "button" and surrounding skin with a small applica-

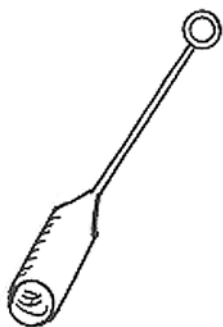


**Fig. 1. Example of application of caustic dehorning paste.**

tion device, such as a wooden paddle (Fig. 1). Caustic pastes require multiple applications. Allow the caustic to dry after each application. This will only take a few minutes. If applications are thorough, there will be no further horn growth. Several dehorning pastes are commercially available.

Precautionary measures should be used to prevent the paste from contacting other skin areas of either the calf or the applicator. The use of caustic pastes tend to be limited due to the fact that treated calves must be protected from rain for a few days after the treatment to prevent the caustic from washing onto the face area and causing chemical burns. There is also the potential for suckling calves to rub the caustic paste on the udders of their dams or other herd-mates and causing chemical burns on them as well.

**Hot iron or electric dehorners** have a cupped attachment that is heated and applied over the horn bud (Fig. 2). The horn forming tissue at the base of the horn bud is destroyed. Various hot iron tools are available, including wood fire heated, butane gas heated, and 12- and 24-volt electric models. This method is bloodless, but must be done when the calves are young and the horns very small.



**Fig. 2. A hot iron dehorner.**

The iron should be heated to a dull red, pressed onto the bud, and slowly rotated for about 10 seconds. The burning application must be liberally applied to destroy all potential new horn

growth. The iron should burn through the full thickness of the skin.

This method of dehorning both kills horn growth and controls bleeding by cauterizing the blood vessels while minimizing potential of infection. Burnt horn tissue can either be removed with blunt impact or left to drop off in due course.

## Mechanical Dehorners

This method surgically removes the horn and a small ring of skin encircling it. Horns may be surgically removed from any age or size of cattle, but the potential for complications greatly increases with the age of the animal. The instruments used must be kept sharp by filing or honing, especially when dehorning adult animals. Bone tissue should be cut and not just crushed or cracked. If crushing or cracking of bone occurs, infection is more likely to occur.

**Spoon dehorners** are used on small calves to cut or gouge out horn buttons. Some ranchers use a heavy knife to cut off the horn buttons, and then coat the edges with a caustic stick.

**Tube dehorners** are used on calves up to 4 months of age. Tubes come in various sizes. Producers should use one that fits over the base of the horn that is being removed. The horn is gouged out by a turning action. This is an excellent method for removing horn buttons.

**Cup and scoop type dehorners** are operated with a scissor-like movement. The operator may need an assistant to apply downward pressure on the tool to stop it from riding up the horn and leaving some horn-forming tissue behind. The scoop type dehorner is pressed down vertically on the horn as the operator spreads the leverage arms.

Both instruments are effective and easy to use. When removing the horn with either instrument the same principle applies as with the spoon and tube dehorners: at least a 2/5-inch (1 cm) ring of skin around the base of the horn must be removed.

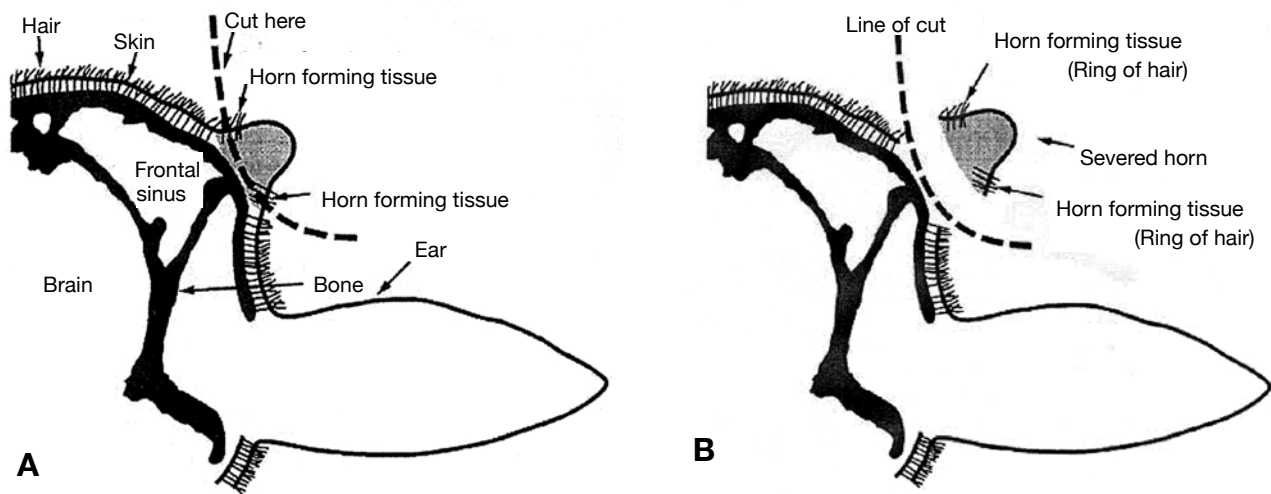
**Dehorning saws or embryotomy wire** should usually be used when mature animals are dehorned in order to avoid crushing or cracking the bones of the skull. The blade of the dehorning saw is especially designed for cutting bone and horn tissue. A fine toothed, stiff backed, carpenter's saw could also be used. The cut should be made about 1/2 inch below the junction of the horn with the skin to prevent horn re-growth. However, it must be noted that dehorning of mature animals increases risk of hemorrhage so practices must be implemented to reduce the amount of bleeding.

To reduce stress on mature animals, use of a local anesthetic is recommended to block the nerves that supply the horn area. Note these are prescription drugs and must be administered by a licensed veterinarian.

## Horn Tipping

The removal of the sharp points of the horns of adult cattle is known as horn tipping. This procedure is of little value in reducing the amount of severity of bruising on carcasses, but tipping can relieve the irritation caused when a curled horn grows back into the head.

This operation can sometimes be done using large dehorners to remove the tip. Where this is not possible,



**Figs. 3A and 3B. Examples of where and how to dehorn. The cut area is at left (A), and the severed horn is at right (B).**

embryotomy wire or a stiff carpenter's saw may be used to saw through and remove the horn tip. Proper restraint must be used to protect both the animal and the operator.

### Wound Treatment

The three special concerns with wounds produced by mechanical dehorning methods are hemorrhage, infection, and fly blow.

#### Hemorrhage

Hemorrhage (bleeding) is of little concern in young calves and would usually require no treatment, although many producers do apply "blood stopper" chemicals. Hemorrhage is a concern in older calves and adult animals. If not controlled, it can result in severe weight loss or death.

Bleeding of the two or three main arteries that supply the horn area should be stopped. Arteries can be pulled and twisted until they break under the subcutaneous tissues, which will then provide pressure and a base for clot formation. They can be cauterized with a hot iron, or a string can be tied around the horn base to apply pressure for 24 hours. Blood stopper chemicals should not be placed down into an open sinus as that may result in serious complications.

#### Infection

This is usually only a problem when the animals have matured enough to develop a "horn" (cornual) sinus. Dehorning then leaves an open hole down into the sinuses of the head. Providing adequate drainage for this area of the head is difficult. Once infection is established, it often results in a serious, long-term sinus infection. The open hole into the head can be covered with gauze or cotton to keep out debris.

Producers need to take great care to prevent hay from being thrown on the head of freshly dehorned cattle at feeding time. The cattle should also be protected from

rain and dust storms until the open sinus has completely healed. Blood stopper and fly spray must be kept out of the open sinus if they are used around the wound.

#### Fly Blow

Flies are of concern during the warm months of the year and can be guarded against by application of a fly spray or smear that will last for a week. In some areas, repeated applications may be necessary.

### Anatomy—Where to Cut and Apply

For dehorning to be done successfully, operators need a basic knowledge of the internal structure of the horn and how it develops. As shown in Fig. 3A, the horn grows from the skin around its base in much the same way as the wall of the hoof grows down from the skin of the coronet of the foot. In young calves up to about 2 months of age, the horn bud is free-floating in the skin layer above the skull. As the calf grows older, the horn bud attaches to the skull, and a small horn starts to grow.

Dehorning should be performed before this attachment to the skull occurs. At this time it is a much simpler exercise, and results in far less bleeding. To ensure that there will be no re-growth of the horn after dehorning, the operator must remove the horn-forming tissue. This is done by removing a ring of skin at least 2/5-inch (1 cm) wide with the horn bud (Fig. 3B).

The most common mistake when dehorning is to remove an incomplete ring of hair around the horn bud. This allows a scur to grow. Producers must take care to dehorn all calves and to dehorn them carefully and accurately, remembering the "1 cm rule." If the horn bud has an incomplete ring of hair, a second cut will be needed to remove all horn-forming tissue.

Once the horn bud attaches to the skull, the horn core becomes a bony extension of the skull, and the hollow center of the core opens directly into the frontal sinuses of the skull. In this situation, the frontal sinuses are opened,

and the soft membranous covering the cranium (skull) is often exposed to view. This is not the brain (as is sometimes thought) and its exposure does not harm the calf.

In older calves it takes only a short time after dehorning for this opening to close, but it is during this period that the animal is prone to fly strike and sinus infections. Even though this exposure does not harm the animal, producers need to take all precautions to avoid this situation.



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