

Dehorning and Castration of Calves under Six Months of Age

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INTRODUCTION

Dehorning and castration are essential management practices for the Northern Territory's cattle industry. However, it is important to note that there are national animal welfare guidelines prepared by the Standing Committee on Agriculture that monitors these activities. The guidelines state that "surgical castration and dehorning without analgesia should only be carried out on animals up to six months of age". It is vital that castration and dehorning of weaners take place as the last act in the weaning process before moving them to the weaner paddock. The weaning process typically involves holding and working the weaner mob in a yard and later in a holding paddock for a period of time until they are able to be handled quietly. By leaving castration and dehorning until immediately prior to moving the animals to the weaner paddock, the risk of infection to any open wounds is minimised.

WHY SHOULD CATTLE BE DEHORNED?

Dehorning cattle is a requirement of the Live Export Accreditation Program (LEAP). The program states, "After 1 January 2000, slaughter and feeder cattle shall not be exported unless they are polled or dehorned and each horn stump is less than 12 cm in length and fully healed." Any specialty cattle (e.g. stud cattle) exported after 1 January 2000 with horns or horn stumps greater than 12 cm long will have stocking density restrictions applied, increasing shipping costs. This regulation has other benefits as properly dehorned cattle will have reduced carcass

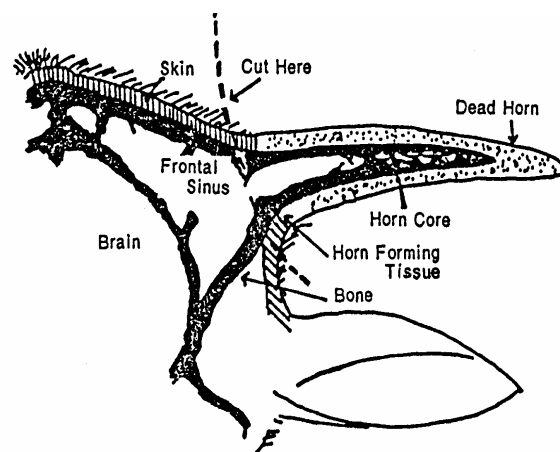


Figure 1. Simplified drawing of a horn structure

bruising, easier and safer handling in yards or crushes, will meet quality assurance scheme demands (such as Cattle Care) and reduce dominance of individual bulls.

How does a horn grow ?

The horn bud starts to form during the first two months of life. During this time it is free floating in the skin layer above the skull. After about two months the horn bud attaches to the skull and the horn starts to grow from the horn forming tissue in the horn bud (Figure 1). Where possible calves should be dehorned before attachment of the horn bud to the skull occurs because of the significant reduction in trauma associated with the dehorning operation. However, in the extensive pastoral industry, this is hard to achieve.

When is the best time to dehorn cattle?

Cattle should be dehorned before they are six months old, but the ideal is before they are three months old. Cool and dry conditions are best as wet weather significantly increases the risk of infection and healing time.

What are the main issues regarding dehorning of cattle?

Whatever the dehorning method used, it is essential that the whole horn bud is removed. It is important to remove a ring of skin at least 1 cm in diameter from around the horn base (Figure 2). Good hygiene is essential and dressing the wound with some form of preparation that includes a fly repellent will help if the calf is to be weaned. Care should be taken when handling medications as some preparations are listed on the poisons schedule and can be harmful to humans. Dressing of the wound is unnecessary if the calf is to be returned to its mother, as she will lick it off. Bacteria are a constant part of the stockyard environment and yard dust is a major source of contamination. A 5% solution of hypochlorite (Nappy San®, Eusol® or Milton®) is an effective disinfectant for cleaning dehorning instruments as is Hibitane® or even Pinodeen®. Any disinfectant solution loses strength rapidly as it becomes loaded with dirt and blood. Therefore it is important that the solution is changed regularly to maintain its potency. A piece of foam rubber placed at the bottom of the bucket helps to protect exposed blades and sharp edged instruments from getting blunt.



Figure 2. Correctly removed horn buds (note skin margin)

Proper restraint of the calf is essential whatever the method of dehorning used. The ideal is a well-designed calf cradle. If dehorning “scruffed” calves, contamination by yard dust is an increased risk. Positive action and plenty of practice will ensure that stress is minimised to both the calf and the operator.

THE MAIN METHODS OF DEHORNING CATTLE IN THE NT

There are three main methods of dehorning in the NT, using:

- Dehorning knives.
- Scoops.
- Cup dehorers.

Dehorning knives

A dehorning knife is ideal for young calves where the horn bud has not attached to the skull (less than two months of age). Hot irons may also be used to sear the tissue surrounding the floating horn bud but are not commonly used in commercial enterprises. The knife commonly has a curved blade allowing the operator greater control of the depth of the cut, although any sharp knife can be used. It is best to remove the point from the knife's blade to reduce the risk of operator injury. The cut should be started approximately 2 cm from the base of the horn bud. It is essential that a complete ring of hair is removed to ensure that no horn-forming tissue remains to grow into a scur (deformed horn). It is critical that the dehorning knife is kept very sharp.



Figure 3. Using a dehorning knife

Scoop dehorners

There are a number of different types of scoop dehorers available. However they all operate on the same principle. The scoops are placed over the horn bud and the handles pushed apart causing the edges of the blades to come together and scoop out the horn bud. This method is ideal for older calves where the horn bud has attached to the skull (two to six months of age). Scoop dehorers can open the frontal sinus (Figure 1) creating a large hole – something that should be avoided wherever possible because of the increased risk of infection. Scoop dehorers need to be kept very sharp and as with any method, all horn forming tissue must be removed.



Figure 4. Using a scoop dehorner

Cup dehorners

Cup dehorers are suitable for older calves, up to 18 months of age. A drawback with this design is that the front of the dehorers may "hide up" the horn resulting in partial removal of the horn bud and increased likelihood of a scur forming. This can be avoided by a second person pushing down on the front of the dehorers or by taking several "cuts". Cup dehorers have the advantage of replaceable blades and edges that are better protected from normal wear and tear. However, they have several recesses which can harbour dirt and dust.



Figure 5. Using a cup dehorner

CASTRATING CALVES

The main methods of castration in the NT

There are two main methods of castration in the NT, surgical and rubber rings. Surgical castration is the main method.

General issues

Calves should be castrated as young as possible. Since the majority of calves in the NT are surgically castrated, hygiene is of critical importance. Similarly, it is important to minimise the length of time that recently castrated calves spend in the yards. Ideally, calves should be let out of the yards at every work break or at least allowed to "mother up" in a large cooler yard. Trucking of recently castrated calves should be avoided wherever possible. Given that yard dust is a major source of wound contamination, wetting the yard (but not the calves) with water will help reduce this source of infection. Regular vaccination of breeders of the herd for clostridial diseases (5 in 1 or 7 in 1) will allow immunity to be passed on to their progeny through colostrum. However, if the calves are vaccinated directly, this must take place at least two weeks before castration or dehorning, for full immunity to be gained.

Surgical castration

- Check that two testes are present in the scrotum - if only one has descended and is removed, the descent of the remaining one may be hindered.
- Trap one of the two testes against the base of the scrotum by firmly squeezing that testis.
- Make a **positive** incision on the trapped testis with a scalpel cutting **AWAY** from the operators hand (Figure 7).
- The incision should be as close as possible to the apex of the scrotum to assist in drainage of the wound. In very small calves, cutting off the apex of the scrotum will provide suitable access to the testes, but is not necessary in larger calves (more than one month old).
- Ensure that the incision in the skin and the thick fibrous capsule surrounding the testis is long enough to allow the testis to be squeezed out through the incision.

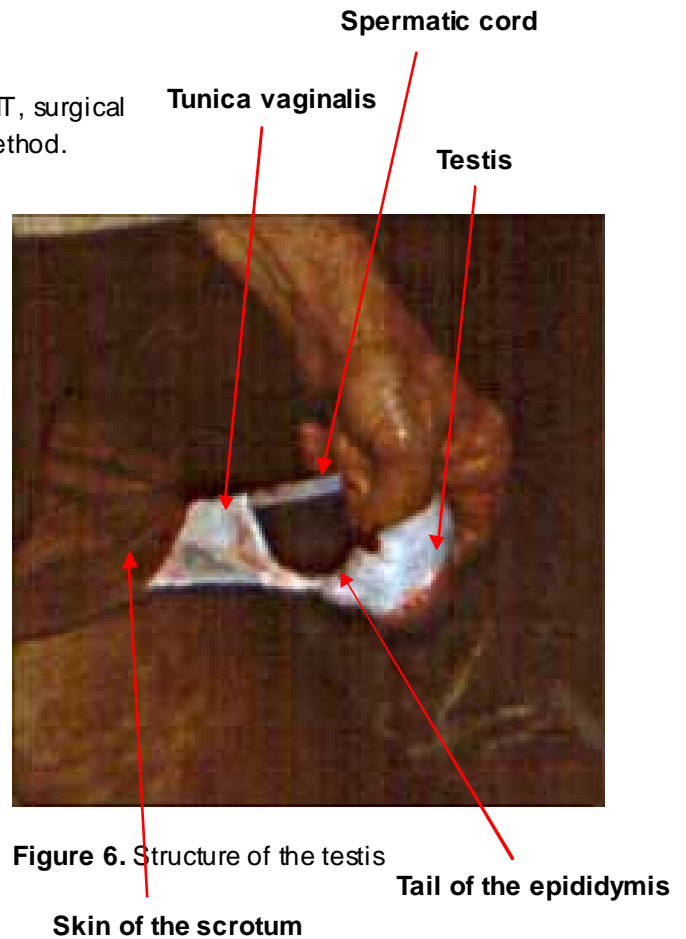


Figure 6. Structure of the testis
Skin of the scrotum



Figure 7. Initial incision



Figure 8. Severing the fibrous tissue

- Use the scalpel to cut the fibrous tissue holding the epididymis to the tunica vaginalis close to the body (Figure 6) so that the cut tissue, testis and epididymis are free to be removed (Figure 8).
- The testis should now be pulled firmly away from the animal and removed in one tearing action without allowing it to re-enter the scrotum (Figure 9). Alternatively, as the testis is pulled away from the animal the spermatic cord can be severed close to the animal using a scalpel.
- Any obvious loose tissue should now be trimmed to aid in the prevention of infection and promotion of healing
- The remaining testis should now be removed in a similar fashion to the first one.
- Scalpel blades should be changed for every 30 – 50 calves.
- A number 21 or 23 scalpel blade is ideal for castration. Pocket knives, although traditionally used, are less than ideal compared with a scalpel blade (plus modified handle if needed) due to the better hygiene and easy replacement of a blunt blade.
- When not in use, scalpels should be left in a small container of strong disinfectant that is changed regularly.



Figure 9. Removing the testis

Rubber ring castration

This method is definitely not recommended for calves more than six weeks old. Rings can increase the risk of tetanus or other infection if used when calves are more than six weeks old. If the breeder herd has not been vaccinated for clostridial diseases, calves should be vaccinated several weeks prior to being castrated with rubber rings. Rings must be tight enough (e.g. purchased recently) to shut off blood flow in both arteries and veins. If the arterial blood flow is not shut off the scrotum will swell.

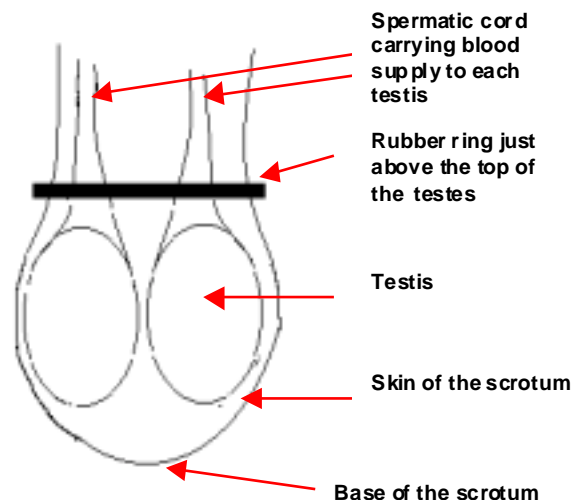


Figure 10. Simplified drawing of calf testes

- Check that both testes are present in the scrotum.
- Squeeze testes against the base of the scrotum.
- With the legs of the applicator facing the belly of the calf, squeeze the handles to stretch the ring so that it can be placed over the scrotum (Figure 11).



Figure 11. Ring stretched before application

- Place the expanded ring over the scrotum and release the handles when both testes are trapped between the ring and the base of the testes.
- It is important to release the ring **just above the testes**, not at the base of the scrotum.
- The applicator can now be removed by slipping the legs from under the ring.

A SUMMARY OF BEST PRACTICE

- Use sharp instruments including disposable scalpels for castration.
- Use appropriate disinfectants at the correct strength and change REGULARLY.
- Reduce dust to minimise contamination, maintain operator hygiene and keep facilities clean.
- Remove processed animals from yards as soon as possible.
- Process as many animals as possible as calves rather than weaners.
- Dehorn and castrate weaners as the very last act in the weaning process.

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