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*Dehorning of a rhinoceros
De van Toit*

CHAPTER 17

Dehorning of a rhinoceros – J.G. du Toit

Reasons for dehorning a rhinoceros

Previously poaching affected 0.1% of the white rhinoceros population of South Africa. Rhinoceros horn is part of the same shopping trolley of the international smuggling syndicates that is filled with drugs, abalone, cigarettes, weapons and human trafficking. The rhinoceros must be dehorned for commercial reasons and to create a legal market for the product. Ranching for horn is at least ten times more profitable than cattle ranching on the same area of land. The sale of rhinoceros horn will earn foreign currency for the country. The dehorning of rhinoceroses will give the live animal a value, as explained in **Chapters 9 & 14**. The philosophy is if you stop a free market you create a black market – this will be the end of the free-living rhinoceros. In certain cases, however, the owners cannot dehorn their animals for reasons such as tourism or predation. This should not prevent ranchers who prefer so sell the horn of their animals instead of hunting them.

Planning a dehorning operation

According to the Norms and Standards described in **Chapter 2**, the following is applicable. When live rhinoceros are darted for translocation, treatment or any other management purpose, samples of the horns and blood must be collected by using the DNA kits provided by the Veterinary Genetics Laboratory at Onderstepoort. The dehorning must be done under the supervision of a veterinarian and while the rhinoceros is immobilized. Therefore a permit to capture the rhinoceros, to dehorn the animal, to transport and to keep the horn must be obtained from the provincial authority (Contact details in Chapter 2).

Dehorning technique

A chainsaw, wood saw or steel saw can be used. The advantage of the chainsaw is that dehorning can be done quickly, thus reducing the down-time and risk of immobilization to the rhinoceros. The disadvantage is that a thick layer of horn is wasted using this cutting procedure.

The hand saw cuts slower but less waste of horn occurs during the cutting procedure. A hand saw can be used as a standby tool for the chainsaw when mechanical problems occur.

Protect the eyes (heat and fumes) and ears (noise) of a rhinoceros when a chainsaw is used. The down-time of a dehorning procedure must be less than 10 minutes.

Cut horn horizontally just above the hairline. Care must be taken with young animals where the sinus is still well developed in the base of the horn. Do not round the edges of the horn because the horn will crack in the middle of the base and reduce growth and horn production.

First cut the front horn and then the back horn.



The horn must be cut above the hairline.



To avoid cutting in the sinuses, the horns of young animals must not be cut too low

Factors to consider when dehorning rhinoceroses

Economic

Dehorning is a costly exercise due to the effort of finding the animals, and the costs associated with the immobilization process. The costs of a dehorning operation will depend on the rhinoceros population density, the size of the area, the vegetation type, topography of the terrain, the degree of habituation of the rhinoceroses, darting platform such as a helicopter or vehicle and the level of experience of the capture team. Published estimates of the current cost of dehorning vary from: R5 000 [US\$ 620 per rhinoceros (estimated for Kruger National Park)] and R8 000 (US\$ 1 000) per rhinoceros for private land (Lindsey & Taylor, 2011). The costs can be reduced by using green hunts as a tool to dehorn the animal (Refer to Appendix 5).



A helicopter is necessary to dehorn animals effectively

Horn growth

The average weight of the horn of a white rhinoceros bull is 5 kg. It is likely, therefore, that on the first harvest an adult male will yield 3.16 kg of horn, and adult female 2.02 kg, a sub-adult male 2.16 kg and a sub-adult female 1.02 kg (**Refer to Chapter 27**). The estimated harvest is 65% of the total horn available of the animal. The regrowth of the horn if cut correctly as described above is an average of 2 kg for a cow that can be harvested every two years. The growth will depend on how actively animals will use their horns to mark their territories.

One of the suggested reasons for the failure of the Hwange National Park dehorning was that the rhinoceroses carried at least 18 months of re-growth when they were poached (Lindsey & Taylor, 2011). However, ranchers dehorn their animals twice per year to limit the risk of poaching.

Population size that must be dehorned

To prevent poaching the aim must be to dehorn 100% of the population. The dehorning of animals as a commercial exercise. It is recommended not to dehorn a rhinoceros younger than 4 years. Depending on the age and sex ratios, 50% of a population must be dehorned at the same time. A cut can be made in the toe nail that will indicate to poachers following spoor that the rhinoceros is dehorned.

Tourism

Purists feel that tourists want to see a rhinoceros with a horn. However, dehorning could actually benefit tourism operations by demonstrating that ranch owners are actively trying to do something to prevent poaching. This factor will be determined how actively tourist operators market the dehorning of animals among their clients.

Storage risks

Security is a major risk. Private landowners in South Africa store their horns in a variety of locations, typically in vaults located off the property such as banks. There is a risk that government officials can leak information of dehorning operations to syndicates. A case is known where the permit was issued and followed by an armed robbery the next day. Faked robbery can also happen, however, where the horns are removed legally and afterwards robbed.

The cost to store 10 kg of horn in a private bank safe is ZAR 120 per annum.

There is risk that insects may cause damage to the horns during the storage period. In the past naphthalene moth balls were used, but the poison can cause harm to humans. Currently diatomite is recommended as described in **Chapter 23**.

Horns can dry out if stored for long periods. **Table 17.1** indicates that 0.6 % per annum is lost over a period of 17 years.

Table 17.1: Weight loss in rhinoceros horn

RHINOCEROS No	WEIGHT (g)	WEIGHT (g) LOSS (g)	WEIGHT LOSS (%)	WEIGHT
	24/04./1995	04/05/2012	17 years	17 years
3	1325	1218	107	8,00
4	2149	1870	279	12,98
6	1644	1508	136	8,27
TOTAL	5118	4596	522	10,19
AVERAGE/YEAR			30.7 gram	0,60 %

Ecological

Conservationists feel that a rhinoceros bull needs his horn to protect his territory and a cow to protect her calf against predators. There are no controlled scientific studies where a certain group of animals are not dehorned. However, a case is known where an adult bull was dehorned and soon after dehorning killed an adult cow. Dehorning animals in wilderness areas where lions occur is not recommended.

REFERENCES

Lindsey, P.A. & Taylor, A. (2011). A study on the dehorning of African rhinoceroses as a tool to reduce the risk of poaching. Report Department of Environmental Affairs.

