

The background of the cover is a close-up photograph of dark, rich soil. Several thin, light-colored plant roots or stems are visible, extending across the top and sides of the frame. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the texture of the soil.

# 21

*Chemical Boaching*  
- J.C. du Toit, D.L. Snyman  
& P.E. Bekker

## CHAPTER 21

## Chemical poaching – J.G. du Toit, D.L. Snyman & P.E. Bekker

### Introduction

The white rhinoceros is an easy target for poachers because they have very poor eyesight and they cannot see stationary objects even a few meters away from them. Their hearing is however very acute and they also rely on oxpeckers (*Buphagus africanus*) to warn them of danger in the area. However, animals in tourist areas or on game ranches are used to people and cannot distinguish between a worker or a poacher. This factor leaves the white rhinoceros very vulnerable against experienced poachers who are able to approach them to within a few meters before opening fire.



*Red-billed oxpeckers (Buphagus africanus)*

The professional poachers have well-structured operations and can use high technology methods which involve dart guns, veterinary drugs, helicopters, 4 × 4 vehicles and professional skills. The late Professor Woody Meltzer once said, "Successful wildlife immobilization is an art that must be learned". These professional poachers are driven by a desire for financial gain and sheer greed. During June 2009 the first white rhinoceros bull was killed by an overdose of an immobilising drug on a private property near Krugersdorp. The horn was removed with a sharp blade from the dead animal. Two days later a second rhinoceros was also darted but the animal did not collapse or die. The dart remained in the animal providing confirmation of a new and disturbing method of poaching. Since then, 20 more incidents of illegally darted white rhinoceros have been recorded in Gauteng, Northwest, Eastern Cape and Western Cape. Not only do these incidents reflect a new and disturbing trend in

poaching methods it also indicates that there is corruption in the procedures for the control, sale and use of veterinary drugs that are controlled under the dangerous drugs legislation.

### Legislation

The question can be asked, how can criminals get access to the drugs?

#### *The two laws involved with the chemical capture of wildlife*

Act 101/65 Medicine Regulatory Affairs (MRA) (Department of Health) is responsible to regulate medicine availability and supply, including the conditions of supply and use. Act 101/65 regulates the control of the medicine (M99)

Act 19/82 Veterinary and Para-veterinary Professions Act (Department of Agriculture) through the Veterinary Council stipulates the conditions and clinical use of the drugs. Act 19/82 regulates the veterinary procedure (Anaesthetic although not define in the act)

### Act 101/65 Medicine Regulatory Affairs (MRA) (Department of Health)

#### *Definitions*

**'medicine'** means any substance or mixture of substances used or purporting to be suitable for use or manufactured or sold for use in-

- a) the diagnosis, treatment, mitigation, modification or prevention of disease, abnormal physical or mental state or the symptoms thereof in man; or
- b) restoring, correcting or modifying any somatic or psychic or organic function in man, and includes any veterinary medicine;

**'veterinary medicine'** means any substance or mixture of substances, other than a stock remedy or farm feed to be registered in terms of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947), used or purporting to be suitable for use or manufactured or sold for use in connection with vertebrates, for the treatment, diagnosis, prevention or cure of any disease, infection or other unhealthy condition, or for the maintenance or improvement of health, growth, production or working capacity, or for curing, correcting or modifying any somatic or organic function, or for correcting or modifying behaviour.



#### *Act 101/65, Conditions where the use of M99 will be allowed to be used by non veterinarians*

Section 22A (15) Provides the Director General the power to issue a permit after consultation with the Pharmaceutical Council for the following conditions: a person performing a health service (Use schedule 1 – 5)

Section 22A (7a) Use of a substance for analytical, manufacturing of foods or cosmetics, educational or research purposes. (Use schedule 1 – 6)

Section 22A (9a) ii for the manufacture, use or supply of any S5 or S6 substance for other than medicinal purposes.

- These persons must still get a script and use it under the control of a veterinarian.
- Applications for authorisation – before a permit will be issued.
- The application must go to the MRA, which will refer it to the Veterinary Council for final approval.

#### *Act 19/82 Rule 10: Use of veterinary medicine*

10(1) Whenever a veterinary professional, administers medicine to an animal or prescribes the administering thereof, he/she shall satisfy himself that the administering thereof is justified with due allowance for the benefits and risks which that medicine may hold for –

- a) the animal to which it is administered;
- b) the person by whom it is administered; and
- c) the consumer of the products of that animal if residues of the medicine concerned should be present in those products.

#### *Dispensing of drugs*

- A veterinarian can only dispense to a bona fide client for a specific animal unless flock treatment is recommended (e.g. antibiotic). This is a privilege made to veterinarians by the regulatory governing bodies.
- A pharmacist to anybody with a script

#### *Keeping of a Register*

- All Schedule 6 and specified Schedule 5 medicines must be kept in a register that must be balanced the last day of March, June, September, and December.
- The register must be kept for 5 years

#### *Problem statement*

- More than 200 users of M99 in South Africa must be inspected by 8 inspectors of the Medicine Regulatory Affairs.
- Traceability is important for control purposes. Of the 10 registers inspected by the MRA during the chemical poaching of rhinoceroses not one was in place.
- M99 can spill over into the drug smuggling industry.
- 18 cases of poaching and killing of 20 rhinoceroses.
- 1 murder case are investigated currently by the police

#### *FRONTPAGE ARTICLE OF 'THE NEW AGE' Newspaper; Friday 16 Sept 2011 Call Girl Murder Mystery: Rhino Tranquilizer may have been what killed her*

It must be remember that in a case of a murder the veterinarian that had issued a prescription will be prosecuted for murder/attempt of murder.



### Actions taken by the SA Veterinary Council

Alternative propositions were implemented by the SA Veterinary Council to the effect that the veterinarian should be the 'End User' of certain medicines only "Etorphine and Thianil". These however are ethical rules and not enforceable as a contravention of *Act 101 of 1965* should these rules not be adhered to. The implementation of Veterinary Rules however may be of interest and applicable to veterinarians and this implementation of *Act 101 of 1965* is not to replace "*Veterinary Matters*" but to place better workable "*Legal Control*" measures in place for control of "*Game Capture Medicines*" being used for illegal uncontrollable purposes due to the fact that these medicines are only to be used for game capture purposes by certain veterinarians, within their scope of practice. This rule however, has led to the providing of certain medicines being available under "*Black Market Activities*".

### Proposal

Veterinarians pursuing to actively engage in *Wildlife Activities* and use the listed medication – Refer **Table 21.1** - must apply for a permit as indicated under Article 22 of Act 101 of 1965. This will bring to book the group of veterinarians, actively concerned in the activities of *Wildlife/Game/Capture/Treatment*, or/and their *Competence* there in. The extent of experience in this field is to be taken into consideration or qualification of the required course in this field that have been completed. Such an accredited course must be supervised by the SA Veterinary Council.

Recording of the use of the products (Schedule 5 & 6) must be done electronically by the *Drug Register* managed by Deloitte & Touché. If the *Drug Register* is not balanced electronically every three months the list of veterinarians will be supplied to the wholesalers and those veterinarians listed cannot buy new product until their registers are completed. Records must also be kept regarding the responsible assistants to the veterinarian should he/she make use of any such person during *Game Capture* or treatment operations or e.g. bleeding of buffalo or impala for diagnostic purposes. These persons must also be in possession of the required permit regarding their competency and compliancy.

Permits are to be issued to the Practice under the responsible *Veterinarian* of the practice, or on the basis of personal requirements. Proof of competency regarding the use of these

medicines in the “SCOPE OF PRACTICE” should be provided for prevention of possible “Non Scope of Practice” veterinarians purchasing and distribution of these *Wildlife/Game Capture Medicines* as is presently being experienced.

Providing serial numbers of all *Remote Drug Delivery System* (Dart Guns) in their possession indicating as to being in working condition or not. This information can be kept by Deloitte & Touché with the *Drug Registers*.

This listing and inclusion of medicines for the “Permit System for Wild Life Purposes”, will however not restrict the normal veterinarian needing to possess/use some of these same products as may be requirement in normal *Veterinarian Procedures* in his scope of practice not operating as wildlife veterinarian should it be required, e.g.:- Diazepam or morphine in normal everyday veterinary practice and procedures. *However, it will be illegal to write a script for wildlife without a Permit.*

It should also be considered as common knowledge, that in the “Operating under ‘Permit’ Conditions”, the Game Capture Fraternity would later become more “*Self Regulatory*”. In Law Enforcement there must also be looked at better compliance, and hereby the taking into consideration of Criminology, Sociology and Psychology, it should be of obvious accord, as at present it is most probably the case of :- “*Rather keep quiet about someone else, as I am also doing the same thing in non compliance / or illegally.*”

The non veterinarian will only be allowed to use products for research and emergency procedures. Non veterinarians requiring any of these products will be required to operate only under the control of a *Responsible Veterinarian* with a permit in the scope of the practice who is in possession of the mentioned permit to obtain the listed medicines. In their applications it will be required for:-

- A *Responsible Veterinarian* in his scope of practice, with in date permit.
- Provide proof of competence and acceptance by the responsible veterinarian only. Not any veterinarian or practice / only as indicated in the permit.
- Patients are to be specifically identified in detail by the responsible veterinarian.
- Only for emergency/research and ‘activity management purposes’ as specified by the *Responsible Veterinarian*.
- Only for specified address.
- Quota to be controlled as required by the *Responsible Veterinarian* stipulated in permit.
- Statement of acceptance to conforming to the requirement of keeping of registers as required by Act 101 of 1965 (e-filing recommended).
- Statement of acceptance to conform to secure safe keeping / storage of products that is required.
- Provide all dart guns with serial numbers on the property indicating as to being in working condition or not.

### Why do poachers use capture drugs to kill rhinoceroses

- This is quick method to get in and out of the poaching area within 10 minutes.
- It is quiet method without drawing attention to staff on the ground.

- Drugs were relatively easy to obtain because the laws were not strictly implemented in the past couple of years.

### The poaching technique









The area will be surveyed by a chopper and the game paths used by the animals and places where they rest in their home range. A couple of days later another helicopter will be used with the registration number hidden. This chopper will drop the person with the dart gun in a hidden spot close to the game path been used by the rhinoceros and close to the boundary fence. The rhinoceros will be driven in the direction of the marksman that will dart the animal from the ground. The chopper will move away and the animal left undisturbed until the overdose of drugs will knock it down. The person on the ground will use a blade to slide the horn off or use an axe. Chain saws are also used but usually in cases where rifles are used because of the noise factor. The person will leave the darting area on foot and moved with the horns and dart gun to the boundary fence and left with a vehicle. Refer to Table 21.2

**Table 21.1: List of Scheduled Capture Drugs under the Proposed Permit System**

ACTIVE (Manufacturer)	TRADE NAME
<b>OPIOID DRUGS</b>	
Etorphine hydrochloride	Captivon (Wildlife Pharmaceuticals)
Etorphine hydrochloride (Novartis)	M99 (Novartis)
Fentanyl (V-tech)	Sublimase (Janssen Pharmaceutica)
Thiafentanil oxalate (Wildlife Pharmaceuticals)	A3080/Thianil (Wildlife Pharmaceuticals)
<b>OPIOID ANTAGONISTS - Mixed</b>	
Butorphanol tartrate (V-tech)	Turbogesic (Fort Dodge)
Diprenorphine (Novartis)	M50/50 (Novartis)
<b>OPIOID ANTAGONISTS - Pure</b>	
Naloxone (Kyron) previous Narcan (Boots)	Naloxone HCL-Fresenius (Bodene)
Naltraxone (V-tech)	Trexonil (Wildlife Pharmaceuticals)
<b>CYCLOHEXYLAMINE DRUGS</b>	
Ketamine (V-tech)	Anaket-V (Bayer)
Tiletamine/Zolazepam (Virbac)	Zoletil (Virbac)
<b>NEUROMUSCULAR BLOCKERS</b>	
Gallamine (Kyron)	Flaxedil (Rhône-Poulenc)
Suxamethonium chloride (Kyron)	Scoline (GlaxoSmithKline)
Neostigmine methylsulphate (Bodene)	Neostigmine methylsulphate (Bodene)
<b>TRANQUILIZERS (Butyrophenones)</b>	
Azaperone (V-tech)	Stressnil (Bayer)
Haloperidol (V-tech)	Serenace (Pfizer)
<b>LONG ACTING TRANQUILIZERS</b>	
Perphenazine enanthate (V-tech)	Trilafon LA (Sherag)
Zuclopenthixol acetate (Lundbeck)	Clopixol-Acuphase (Lundbeck)

<b>SEDATIVES (Benzodiazepines)</b>	
Diazepam (V-tech)	Valium (Roche)
Midazolam (V-tech)	Dormicum (Roche)
<b>SEDATIVES (Imidazoles or <math>\alpha</math>-2 agonists)</b>	
Xylazine (V-tech)	Rompun (Bayer)
Detomidine (V-tech)	Domosedan (Pfizer)
Medetomidine (V-tech)	Domitor (Pfizer)
<b><math>\alpha</math>-2 ANTAGONISTS</b>	
Yohimbine (V-tech)	Yohimbine (V-tech)
Atipamezole (Pfizer)	Antisedan (Pfizer)
<b>OTHER DRUGS</b>	
Biperiden (BASF Knoll Pharma)	Akineton (BASF Knoll Pharma)
Doxapram (Fresenius Kabi)	Dopram (Fresenius Kabi)
Hyaluronidase (Kyron)	Hyalase (Kyron)

Table 21.2: The following three sets of photos will demonstrate that the crime was committed by the same poaching syndicate

CASE A	CASE B	CASE C
		
Horn peeled off with sharp flexible blade		
		
Close to boundary fence		
		
Neck / shoulder shot		



### Analysis of drugs from darts

Two darts were recovered and the contents analyzed by two different laboratories. The one dart was done by the Jockey Club of SA that discovers that a morphine derivate was used. The forensic laboratory of the SAPS found Tetrahydrozoline HCl in the second dart. Visine is the generic name of a product used for eye drops and contains 0.05% tetrahydrozoline (500 µg/ml), an alpha-agonist, with similar properties to other imidazoline derivatives, such as clonidine, tizanidine or naphazoline. Clinical effects from ingestion of tetrahydrozoline include drowsiness, coma, respiratory depression, bradycardia (slow heart rate), hypotonia, muscle flaccidity and hypothermia (high body temperature), Spiller et al (2007). Currently all these cases are under investigation.



### REFERENCES

Spiller, H.A., Rogers, J. & Sawyer, T.S. (2007). Drug facilitated sexual assault using an over-the-counter ocular solution containing tetrahydrozoline (Visine<sup>®</sup>). *Legal Medicine*: 4pp.

[www.elsevier.com/locate/legalmed](http://www.elsevier.com/locate/legalmed).

