First-of-its kind course offers veterinarians the opportunity to improve their knowledge of wildlife

2 December 2014

Vets on the course gaining practical experience in the field

The Department of Paraclinical Sciences at the University of Pretoria (UP), through CE@UP and in collaboration with SANParks' Veterinary Wildlife Services, recently hosted the first Advanced Course in Wildlife Chemical Immobilisation and Field Practice in the Kruger National Park. This course offers veterinarians working with wildlife an opportunity to improve their knowledge and abilities for working with some of South Africa's most valuable animals.

The idea of hosting the course was the brainchild of Dr Leith Meyer, senior lecturer in Pharmacology, who felt there was a need to advance and improve the knowledge and skills of veterinarians working in the field. While a number of standard capture and immobilisation courses are available, this course aims to provide the kind of information veterinarians need to make the best possible decisions based on science and best clinical practice, rather than on anecdotal field experience. The course also delves into improving the monitoring of immobilised animals, the consequences of capture, such as stress and capture myopathy, the side-effects of drugs, and how best to manage cardiovascular failure, hyperthermia and respiratory depression. Aspects related to the use of best treatment options for pain and infections, long-term anaesthesia, nutritional supplementation and diagnostic sampling are also covered.

The fundamental objective of the course, Meyer explains, is to raise the standard of the wildlife veterinary profession and therefore to improve the wellbeing of wildlife patients. Another factor that distinguishes this course from other, similar courses is that it focuses on specific species and benefits from the collaboration of leading experts from academia and nature conservation organisations who share their knowledge and experience of how to deal with species that are often challenging to work with. The course also includes practical fieldwork, thus allowing participants to apply what they have learnt during the intensive four-day course.

Dr Meyer shared some of his ground-breaking findings on the best methods to stabilise immobilised rhinos. Considering the dismal reality currently faced by our rhinos, these findings are of critical importance in efforts to preserve the species. Dr Meyer has been involved in an on-going collaborative study researching novel drugs and drug combinations that stimulate the breathing and improve the oxygenation of these large mammals while they are immobilised. The immobilisation of rhinos for treatment and other procedures, such as dehorning, results in severe respiratory depression and on occasion has even resulted in the patient's death.

Dr Meyer and his co-workers from SANParks, zoos in the USA, and Wits' Brain Function Research Group sought new variations that would prevent immobilised white rhino from becoming dangerously hypoxic, a condition that occurs when the body is deprived of oxygen. He says that it is amazing that rhino even survive as often as they do, noting incidents where rhino became so hypoxic that their blood turned black, which indicates an extreme lack of oxygen. (Blood should be bright red in colour.)

Contrary to what was previously prescribed, this team showed the participants that giving oxygen alone actually did more damage because rapid absorption of oxygen causes partial collapse of rhinos' lungs. A range of tests was done to see how specific drugs, in isolation and in combination with oxygen, affect the animals. The findings indicated that administering the drug butorphanol in combination with oxygen corrects hypoxemia in chemically immobilised white rhino, with improved oxygen levels mostly above normal ranges.

This study is of critical importance because although immobilisation procedures are done regularly in the field, no one has paid specific attention to why animals react the way they do to the drugs. Sharing findings is one of the most important aspects of research, which is why courses such as UP's Advanced Wildlife Chemical Immobilisation and Field Practice are imperative. Meyer pointed out that the sharing of expertise, knowledge and research findings with the broader veterinary community not only enriches the pool of knowledge, but also helps to preserve South Africa's phenomenal wildlife heritage.

- Author Louise de Bruin