

South Africa developing a booming crocodile economy

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How do you get a crocodile to urinate in a cup?

That is one of the questions that [Dr Jan Myburgh](#) from the University of Pretoria (UP) and his colleagues have had to research in order to develop reliable, effective ways of monitoring the health of farmed crocodiles in anticipation of a coming boom in the local industry.

Myburgh is based at UP's Exotic Leather Research Centre and the Department of Paraclinical Sciences in the Faculty of Veterinary Science in Onderstepoort. He will receive his PhD today (22 April 2015) during one of UP's Autumn Graduation ceremonies.

"There is currently a big push to position South Africa as a global leader in the crocodile industry," says Myburgh. "There was a decision in government that South Africa - already a big exporter of crocodile leather as raw skins - should invest in initiatives to also start producing and exporting crocodile end-products, which have a lot of added value and is therefore much more profitable."

A crocodile leather handbag, for instance, can easily sell for \$10 000 in the US, while the actual crocodile leather sells for far, far less.

"Becoming a leading exporter of crocodile luxury export items, as opposed to just raw skins, will mean significant job creation in the local crocodile industry and will provide a welcome boost to the economy," says Myburgh.

"That is why the Department of Trade and Industry more than a year ago called for the development of a crocodile cluster to coordinate efforts in the local industry – which includes the University of Pretoria as a technical collaborator."

With a growing global concern over the ethical treatment of animals, the need also arose to develop more reliable, more effective and less-invasive ways of monitoring crocodile health by regularly sourcing urine and blood samples.

"Fortunately, these days more and more people don't want to buy a product if there is a chance that the manufacturing process involved cruelty to animals.

"Nobody wants a product that puts blood on their hands. They want assurance that the crocodiles were treated humanely. Unhealthy crocodiles also won't produce high quality leather, so it is very important to us that we properly monitor the wellbeing and health of farmed crocodiles," says Myburgh. "Crocodiles however don't make easy patients and that is where our research comes in."

The best way to get a urine sample from a crocodile is first to temporarily stun it with an electric current and then to simply insert a canine urinary catheter into its [cloaca](#). This allows urine to flow out freely from the urinary chamber for collection.

“Electric stunning is safer and less traumatic for the crocodiles, because tranquilisers cause them to wake in a dazed, scared state. This leads them to immediately run for the water out of fear, and they often drown,” says Myburgh. “When they’ve been electrically stunned, they wake up fully alert.”

Blood samples are collected with a syringe and needle directly from a blood vessel behind the head – also while the crocodile is unconscious after being stunned.

“Crocodiles are big, incredibly strong animals that love to bite so there is unfortunately no way of getting samples without immobilising them first. With these methods however, they are inconvenienced as little as possible and we can accurately monitor their health.”

Myburgh believes South Africa is poised to soon become a leader in the niche international market of high-end crocodile products. “For a long time Zimbabwe was the regional leader, but as things are going now we are catching up very fast.”