




NEWSLETTER AUGUST



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Dear clients,

It seems we are slowly heading into the summer. Some bushes start to flower already! In this newsletter, we discuss the interesting properties of the waterbuck coat, and we dive into the topic of bull (or ram) fertility evaluation. Lastly, we have an opinion piece on the recent arrest of rhino conservationist John Hume. We truly would like to hear your opinions on this matter.

Kind regards, Wildlife Vets Namibia team

WATERBUCK COAT

The Common Waterbuck (*Kobus ellipsiprymnus*) is an impressive large antelope with a shaggy, coarse and smelly coat. Why do waterbuck have this coat, which differs quite a bit from other antelopes?

The thick coat of the waterbuck is well adapted to the wetland areas where they originally occur. The coat is covered in an oily secretion that is produced by specialized skin glands. The outer hairs are interwoven with the undercoat, giving the coat a rough texture that keeps the oily secretion close to the skin. This oily secretion acts as a water repellent; when the waterbuck goes into rivers or swamps, the water rolls off the coat, keeping the undercoat dry.

Besides making the waterbuck 'waterproof', the oily layer also has a strong musky odour. This odour actually has some interesting benefits to the waterbuck. Since the smell is quite strong, waterbuck do not need to mark off their territories via scent-marking or their dung. Just being present is enough! Some say that predators avoid waterbuck due to their stinky coat, but this theory has not been proven. It is more likely that waterbuck stay safe by running into water to escape – that is in their natural occurring areas.

Probably the most interesting feature is the fact that the oily secretion acts as a natural insect repellent.



Waterbuck bulls do not mark their territory through scent-marking behaviour; instead, their presence and natural body odour serve as territorial signals. © M. Bijsterbosch

For example, research showed that waterbuck rarely get bitten by the tsetse fly. This fly can carry the trypanosome parasite which can cause sleeping sickness in people, and nagana in livestock. Researchers identified the chemical components in the oily secretion, that are responsible for keeping flies away. These chemicals have been used for example in collars on cattle to keep the flies away. The shaggy coat of the waterbuck also makes blood feeding more difficult for flies.

Tsetse flies use smell to find animals to bite; they avoid waterbuck and zebra (red), and prefer buffalo and cattle (green). Researchers identified the repellent compounds (d), and created blends, which are used in collars for cattle (f). Cattle and buffalo release smells (breath and urine) that attract the tsetse fly (e). These smells are used in traps to catch the tsetse flies (g). © O. Orubuloye et al (2024)

The infographic is divided into several sections:

- b:** Comparison of Zebra and Waterbuck. Red arrows point to the zebra and waterbuck, indicating they are avoided by tsetse flies.
- c:** Comparison of Buffalo and Cattle. Green arrows point to the buffalo and cattle, indicating they are preferred by tsetse flies.
- d:** Chemical structures of repellent compounds: Acetophenone (#), Geranyl acetone (*#), Guaiacol (2-Methoxyphenol) (*), 6-Methyl-5-hepten-2-one (#), Pentanoic acid (*), and δ-Octalactone (*).
- e:** Chemical structures of attractant compounds: 3-n-Propylphenol (#), 1-Octen-3-ol (*), p-Cresol (4-Methylphenol) (#), and Acetone (*).
- f:** A photograph of a cow wearing a collar.
- g:** A photograph of a tsetse fly trap.
- a:** A diagram of a tsetse fly with numbered callouts (1, 2, 3) pointing to its body parts.

BULL FERTILITY EVALUATION

In livestock, fertility tests are often a routine before bulls or rams are sold. Yet in game farming, it is quite rare. This is strange since game farmers often pay top dollars for top genetics, only to discover months or years later the bull or ram is sterile. The farmer not only paid too much for the infertile bull/ram, but his main loss also lies in the loss of a seasons calve crop! Why don't game farmers learn from the livestock industry? Buying a bull/ram with some guarantee of fertility (either a proven breeder and/or a fertility examination) helps the game farmer to make a smart choice.

How does it work?

First off, we would ask the seller a couple of questions about the breeding history of the bull (or ram). For example, has the bull/ram been running with females already or does he come from a bull/ram herd? When was he introduced as a breeding bull/ram? What was the calving/lambing percentage? This information is considered in combination with the animal's health and nutritional status. Sick or malnourished animals are rarely on top of the game!

The bull or ram is then darted and we evaluate the body condition and check for early signs of disease (e.g. fever, pale mucous membranes, etc.). This is followed by the examination of the external genitalia. We check the penis and preputium, measure the scrotal circumference (the semen factory) and carefully feel the scrotum, including the testes and epididymis for any abnormalities.

Then the internal genitalia are then evaluated and stimulated by either/and rectal and ultrasound examination. See the diagram on the next page for an anatomy refresher 😊

The next step is to collect semen for evaluation. We make use of the El Torro electro ejaculator with probes custom-made for wildlife. A lubricated probe is inserted into the rectum of the bull or ram. The probe is positioned near the accessory sex glands (seminal vesicles, prostate, bulbourethral glands and ampoullae, which produce fluids that help sperm survive, move, and fertilize an egg), and the pelvic nerves that control ejaculation. Low-voltage pulses are sent through the probe. The pulses stimulate the nerves that cause the muscles around the reproductive tract to contract. As this stimulation continues, the bull starts to ejaculate. The semen is then collected in a clean container.



Measuring the circumference of the scrotum of a golden wildebeest bull. A larger scrotal circumference usually means larger testes, which are capable of producing more sperm. © M. Bijsterbosch



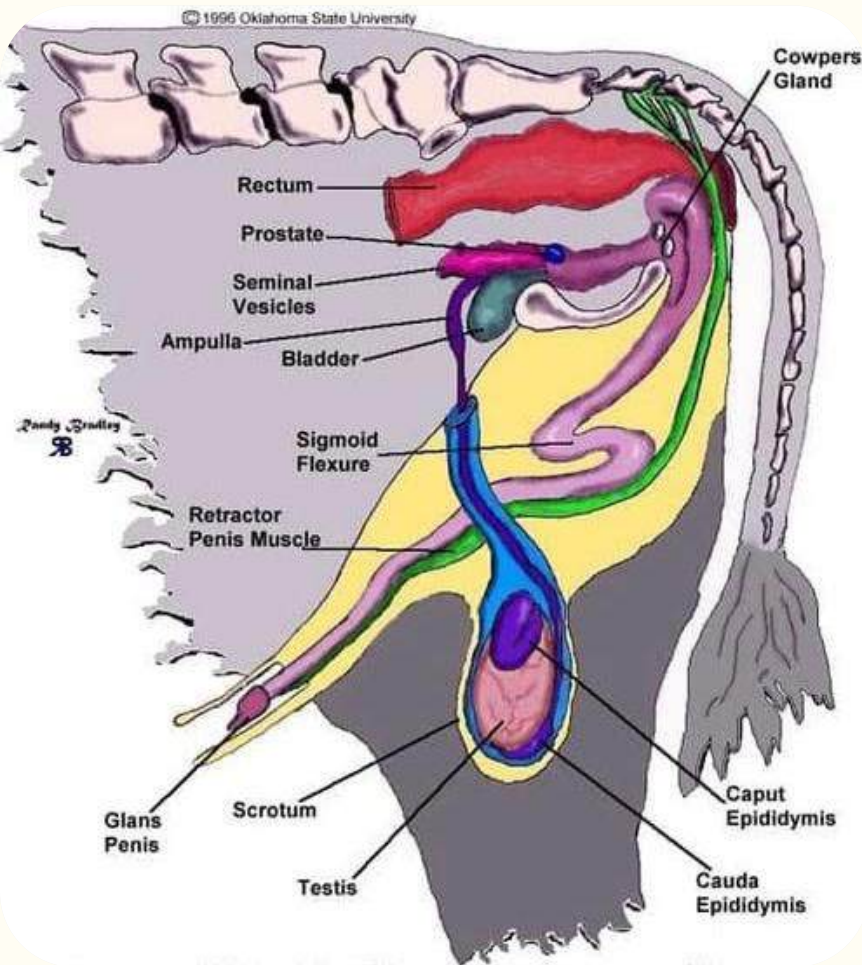
It is not always easy to get semen from game, compared to livestock. Especially wildebeest bulls can be notorious.

© M. Bijsterbosch

💡 Sperm vs. Semen

Sperm and semen are two different things. Sperm are the microscopic cells that carry the male's genetic material, these cells fertilize the egg. Semen is the fluid that carries sperm during ejaculation; it is made of sperm and other fluids from glands.

In easy words; sperm are the passengers, and semen is the vehicle that helps the passengers to travel safely.



The male reproductive organs of a bull. © Oklahoma State University

Once the semen has been collected, it is transferred onto warm microscope slides (semen does not enjoy the cold!). We then evaluate the semen under the microscope, do a sperm count, and check the cells for shape and movement.

On the spot we can determine if the bull is a:

- 🐾 Satisfactory potential breeder
- 🐾 Questionable potential breeder
- 🐾 Unsatisfactory potential breeder

Once back home, we write a full report which is sent this to the farmer.

It is important to remember that fertility testing just gives a useful glimpse of the bull or ram's reproductive potential, but it is not a guarantee. Semen quality can fluctuate due to stress, illness, age or nutrition, and the basic tests we do may miss underlying reproductive issues.

💡 What do all these terms mean?!

Penis: Organ that delivers semen into the female during mating.

Preputium: Also called the sheath, it is a skinfold that covers and protects the penis when it is not extended.

Scrotum: A pouch of skin that holds and protects the testes, and keeps them at the right temperature.

Testes: Two oval glands inside the scrotum, they make sperm and testosterone (hormone), which drives fertility and male traits.

Epididymis: A long coiled tube at the back of each testis, sperm moves here to mature and gain the ability to swim before ejaculation.

Rectum: Final tract of the digestive system, which is just in front of the prostate and seminal vesicles.

Bulbourethral Glands: Also known as Cowpers glands. Tiny glands that release a slippery fluid which cleans and lubricates the urethra before semen comes through.

Seminal Vesicles: Pair of glands behind the bladder, that produces a fluid which is rich in sugars. This mixes with sperm to form semen and give it energy.

Prostate: A gland around the urethra (the tube that carries semen and urine). It adds more fluid-containing enzymes and nutrients to the semen, and helps to keep it at the right consistency.

Ampullae: Enlarged areas of the vas deferens (the tube that carries sperm from the epididymis). They act as temporary storage reservoirs, adding extra volume to the ejaculate.



Semen is evaluated in the field, under the microscope © M. Bijsterbosch

Even with good-quality semen, some bulls struggle with mating due to behavioural issues, this could be a poor libido, lack of interest, or difficulty performing, not every bull/ram is a natural breeder. In wildlife we have the limitation that we are rarely, if ever, able to observe the sire mating. We can thus not attest to the ability to actually mate.



Fertility testing on a 'bigger' scale! © M. Bijsterbosch and Carla Lichtenberg

For rhinos, we unfortunately do not have the equipment needed, but fertility testing is absolutely possible, for both males and females. In such cases, we collaborate with Dr. Morné de la Rey from Rhino Repro, he is one of South Africa's leading experts in wildlife reproduction. If you have a rhino that has never calved before, please feel free to reach out. For more information, have a look at our July 2023 and March 2024 [newsletters on our website](#).

JOHN HUME'S ARREST: A WAKE-UP CALL FOR RHINO CONSERVATION

It has been all over the news recently: John Hume, the former owner of the Platinum Rhino reserve, once the world's largest private white rhino herd, was arrested alongside five associates for allegedly running an international horn-trafficking syndicate. Prosecutors claim they obtained domestic trade permits under false pretences to channel 964 horns into illegal markets across Southeast Asia. Mr Hume denied the charges, was released on R100 000 bail, and returns to court in December 2025.

We categorically condemn any illegal activities; no conservation mission justifies fraud or criminal conduct. However, should Mr Hume be proven guilty, we must ask ourselves the question: why would a man who devoted his life to save rhinos resort to these practises (keep in mind, he has not been convicted!).

Mr Hume invested everything into rhino conservation. His reserve housed approx. 2000 rhinos and produced 150-200 genetically sound calves per year, offspring that could repopulate areas where rhinos have become scarce or extinct. Beyond his passion for rhinos, obviously he had hoped for a return in his investments through the selling of live rhinos and the prospects of the eventually lifting of the international ban in horn-trade.

That ban, implemented by CITES in 1977, aimed to curb poaching. Yet poaching continues at a staggering rate, proving that this ban did nothing to protect the rhino - on the contrary, poaching and the illegal trade in rhino horn thrived under the ban. Unfortunately, many CITES regulations are put in place and are enforced by people who often lack first-hand experience of the situation on the ground. They do not own rhinos and thus have no idea of the cost of feeding them and keeping them safe. In short, they have no skin in the game! Even worse, after nearly 50 years they have not come forward with a single workable alternative solution towards protecting the rhino. They are still passionately opposed to the legalised trade even though this measure failed to protect the rhino.

Ten years ago, a single rhino cow would be sold for over N\$ 600 000.00 Today, a farmer in South-Africa is lucky to get N\$ 100 000.00. The collapse in the value of live rhinos boils down to three realities:

- 🐾 The high risk of poaching forces rhino owners to monthly spend many thousands on anti-poaching measures and in spite of that, rhinos remain a liability!
- 🐾 Feeding a rhino is expensive! One adult rhino will eat as much as 3 cows or 5 adult sable antelope however, rhinos are slow breeders, producing about 1 calf every 3 years. Five sable cows on the other hand are likely to produce 15 calves in the same 3-year span. At a very modest price of say 25 000.00 per 18-month-old sable, the game farmer could easily earn NAD 375 000.00 from the sable without incurring additional costs of anti-poaching measures!
- 🐾 If the rhino owners are not able or allowed to make a realistic return on his investment, who can blame them if they divest from rhinos and rather farm with other wildlife species or even worse, return to livestock farming? The result of all this? Game farmers are financially pushed to get rid of their rhinos just like investors would sell plummeting stock, BUT the direct consequence is a dramatic reduction in habitat available for rhinos.

Over the last 10 years, Mr Hume repeatedly appealed for financial backing, but the big NGOs that 'save the rhino' showed little interest, and the billionaires of the are too clever to invest in a liability.

We would prefer to see rhinos with horn, unthreatened by poaching! But right now, the persisting demand in rhino horn is a reality, whether we like it or not. Legalizing the international rhino horn trade would convert the rhino from a liability to an asset. Rhino owners would reinvest the income generated from selling the horns into better anti-poaching measures as well as into rhino conservation. Many game farmers who divested from rhino are likely to once again buy rhinos, a move that will dramatically increase both the value of live rhinos and rhino habitat.

Legalizing a controlled international horn trade may lack popularity, yet it has proven to be effective for other species, such as the vicuña and several crocodile species. And think about the roan and sable antelope, thanks to game ranching and selective breeding these species have been brought back from the brink, and now we see regular releases into large reserves. Commercial incentives rescued these animals, and rhinos deserve the same pragmatic lifeline.

Let us not judge Mr Hume until he has been found guilty! There seem to be some serious problems with the legal process in South Africa as can be gleaned from the recent acquittal of [Mr. Derek Lewitton](#), who faced very similar charges. The blind refusal to rethink outdated bans, puts rhino owners into a very precarious financial position! It is high time that the "armchair conservationists" open their eyes and put thought into the reality on the ground. To save our rhinos for future generations we need pragmatic solutions. We simply can't continue with the status quo!!

💡 *What to read more on this topic? Check [our online article](#):
'Struggling to Survive: Challenges of the Private Rhino Owner'*



Giraffes walk moving both legs on the same side of the body forward at a time. This gait is unique to them!



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