

Biosafety Level 3 laboratory boosts veterinary services portfolio

The Western Cape's veterinary laboratory services boosted their portfolio significantly with the addition of a Biosafety Level 3 mobile laboratory.



Image source: [Gall/Getty](#)

The state-of-the-art Biosafety Level 3 mobile laboratory – which is one of its kind in the world – underwent a service and upgrade worth R1,5m as a valuable addition to the province's One Health approach.

A world-class facility

Western Cape minister of agriculture, Dr Ivan Meyer said: "The facility is world-class, setting a high benchmark and best practice approach." Among a variety of applications, it is also expected that the BSL3 laboratory will play a significant role in identifying high-risk zoonotic diseases that can spread between animals and humans.

The mobility and the cryostorage facility/biobank in the BSL3 laboratory are only some of the features that make this laboratory a world first.

Meyer added: "The facility ensures that we are at the cutting edge of measures to ensure that animal health leads to human health. What is currently happening in China demonstrates the impact of viruses that can migrate between animals and

humans.

"Forty-five percent of all South African agricultural exports leaves our shores via the Western Cape. Veterinary certification of animal products for the export market is a key component of growing our export market and the Western Cape economy," he added.

Conforming to German standards

Initially designed and developed in Germany, the laboratory conforms to German standards and was designed for testing in remote regions. The unit does not require landline electricity, water or sewage connections. Its 65kW self-sufficient power supply with its 1,000-litre diesel fuel tank supplies the required electricity.

Biomedhelix director, Uwe Schoen, who was involved with the original engineering of the laboratory, said: "In my view, this laboratory can play a significant role in the diagnosis of animal diseases and in this way obtain optimal health for people, animals and the environment, universally known as the One Health concept."

The unit has a central user-friendly interface with internet connectivity and a satellite phone to ensure that data is available online. The laboratory can be monitored and controlled remotely.

At the entrance to the unit, there is a small office space, from where one enters the laboratory through a sealed high-security cubicle, guaranteeing gradual negative pressure between all the spaces.

The laboratory equipment

The basic equipment in the laboratory can be interchanged for other devices, depending on which tests are required. On the inside of the laboratory, there are two biological safety cabinets plus an autoclave with vacuum steam sterilisation for the safe disposal of pathogenic waste. The pass-through vacuum steam autoclave is connected to an onboard water recycling system that allows the device to function with minimal water consumption.

The 300-litre liquid nitrogen tank onboard supplies the mobile cryobank to handle, freeze and store cryo samples inside the laboratory. A specially designed mobile liquid nitrogen storage space is another one of this laboratory's special features.

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