



Research on wildlife diseases

Anthrax and Foot-and-Mouth Disease



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Lefapha la Diseanse tša Bongakadiruiwa

Wildlife are valuable and increasingly on the move within South Africa as they are translocated in their tens of thousands every year. Through this movement these animals may either be a source of infection to animals already in the areas to which they have been moved, or alternatively they may be susceptible to diseases they previously have never been exposed to.

Wildlife diseases are particularly important within the context of the interface between domestic animals, wildlife, humans, and the environment, and have an impact on ecosystem health in its broadest sense. Crucial research on wildlife is conducted in the Faculty to understand that a number of diseases such as bovine tuberculosis (BTB), brucellosis, anthrax, and foot-and-mouth disease (FMD) play a roll in wildlife, using cutting-edge techniques ranging from molecular biological techniques to epidemiology. It is also aimed at the holistic control of wildlife disease outbreaks.

Anthrax

- Anthrax surveillance of endemic regions in South Africa in collaboration with other important role-players
- Diagnostics, isolation and genotypic characterization of *Bacillus anthracis*
- Participating in an African anthrax network
- Ecology of anthrax and analysis of transmission cycles for outbreak control
- Determining the efficacy of available anthrax vaccines in collaboration with the University of Hohenheim, Germany

Foot-and-mouth disease (FMD)

- Risk assessment addressing the safety of deboned beef produced from an area where wildlife are endemically infected with FMD virus
- Development of Bayesian latent class models to estimate the sensitivity and specificity of FMD diagnostic tests for use in the vaccinated cattle populations at the interface with FMD virus infected wildlife
- Development of new methods to perform vaccine matching to maximize the protection of domestic cattle at risk from FMD virus transmission from wildlife

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