

## Significant developments in African horse sickness research pave the way for direct exports of horses from SA

Three significant developments in AHS research could assist in development of protocols for direct exports of horses from South Africa:

- A recent study by [the Equine Research Centre \(ERC\)](#), where samples collected between 2004 and 2014 were analysed, has revealed that AHS outbreaks in the AHS Controlled Area of the Western Cape Province were caused by transmission of AHS vaccine derived viruses. These findings led to a restricted vaccination period in the AHS Controlled Area and the strong recommendation that horse owners vaccinate their horses between 1 June and 31 October each year in the rest of the country.
- Advances in diagnostics using the RT-PCR test means that cases of AHS can be confirmed within four hours of samples being submitted (confirmation used to take at least two weeks). The World Organisation for Animal Health (OIE) and the European Union (EU) have incorporated this test into documentation which has been proposed for ratification, a process that is currently underway.
- Another [scientific study](#) has confirmed that the risk of a horse exported from South Africa under internationally accepted standards being infected with AHS is miniscule, giving confidence to trading partners to re-examine quarantine procedures, which should boost the export market.

The next goal is to raise around six million Euro towards the trials and commercial development of a new generation AHS vaccine.

### AHS Outbreak Study

*(The edited version of this paper is published in the Equine Research Centre Newsletter, distributed concurrently with this newsletter)*

The Equine Research Centre, based at the Faculty of Veterinary Science, Onderstepoort, University of Pretoria, under the Directorship of Professor Alan Guthrie, and which is partially funded by the [Equine Health Fund](#), Wits Health Consortium, has recently published a study which examined data collected between 2004 and 2014, which was designed to examine the anomalies observed in the 2014 AHS outbreak in Porterville.

This study, co-ordinated by Dr Camilla Weyer under the supervision of Prof Guthrie, has revealed that the outbreaks of AHS that occurred in the AHS Controlled Area in the Western Cape (which was established in 1997), between 2004 and 2014 were caused by transmission of vaccine derived viruses to resident, unvaccinated horses. This study was made possible thanks to the ERC's biggest asset – an extensive and meticulous biobank of samples collected and stored by Professor Guthrie and his team over the last 25 years.

It has long been believed that illegal movement of infected equines into the AHS Controlled Area was the most probable source for the repeated outbreaks of AHS in the area, but this study has proven that this is not the case. Data from this study shows that use of polyvalent (many types included) AHSV-LAV (AHS virus -live attenuated vaccine) can result in emergence and spread of virulent viruses to resident susceptible horses. These findings are consistent for other modified live virus vaccines and this has major implications for strategies to control AHS.

This does not mean that the vaccine is harmful. The vaccine provides excellent protection if used correctly and should be administered to horses older than six months from 1 June to 31 October each year. Without vaccination, the mortality rate due to African horse sickness infection can rise to 90%. Without the current AHS vaccine, South Africa would not have a horse industry and there would be no possibility at all of export.

*Competition season is unaffected*

According to Professor Alan Guthrie of the ERC, “The concept that horses cannot be worked at all through the vaccination period is pure fallacy. As per the package insert, the day of vaccination needs to be observed. Horses that are having their first three vaccinations (such as young stock or imported, naive horses) need to be monitored and not overly-stressed through this period. But the standard practise of leaving horses, or even working them lightly, is not necessary in veterans of the vaccine.”

*Vaccination Period*

As per the notification from the Department of Agriculture, Forestry and Fisheries (DAFF) in March 2015, the following applies to the dates for administration of African horse sickness vaccinations:

<b>Area</b>	<b>Adjustment</b>
AHS Free Zone	Permission for vaccination will only be given from 1 June to 31 October each year.
AHS Surveillance Zone	Permission for vaccination will only be given from 1 June to 31 October each year.
AHS Protection Zone	All equines in this area must be vaccinated within the period 1 June to 31 October each year.
AHS Infected Zone	Strong recommendation is made to vaccinate during the period 1 June to 31 October each year

*In a notice dated 28 September 2016, the vaccine manufacturer supported the 1 June - 31 October restricted AHS vaccination period and confirmed that sufficient stock of the AHS vaccine is available.*

**Equine Research Centre’s RT-PCR Diagnostic Solution**

You will have read about the ERC’s RT-PCR tests in the November 2013 edition of the [ERC Newsletter](#). An exciting follow up is that, according to Professor Guthrie, “The OIE (World Organisation for Animal Health) is in the process of adopting the ERC RT-PCR test to its protocol for RT-PCR testing, and it is scheduled to be adopted by the European Union on its list of approved tests.” This is an incredible achievement from a local research facility with minimal financial support.

Previously tests for AHS and serotype identification took a minimum of two weeks, often resulting in people avoiding the expense of the test, and simply proceeding with symptomatic treatment!

The validation of the ERC’s RT-PCR test, which has a potential turn-around of only four hours from sample receipt, could mean a reduction in time spent in pre-export quarantine for possible export, as horses do not need to be isolated extensively whilst waiting for test results.

## **AusVet Risk Assessment (done in collaboration with ERC and EHF)**

The details of this Risk Assessment, which has now been published in the prestigious PLOS ONE scientific journal, were included in the June edition of the [EHF Newsletter](#). This study by AusVet, which used data provided by the ERC, confirmed the likelihood of undetected AHS infection in horses exported from South Africa can be reduced to miniscule by appropriate risk management measures and the risk assessment provides support for countries to negotiate export protocols with South Africa.

With the latest scientific information and the validation of diagnostic testing in-hand, South African horses can be safely exported all around the world while fundraising takes place for the longer term goal : A new AHS vaccine.