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## ABOUT AFRICAN HORSE SICKNESS

### What is African Horse Sickness?

African horse sickness (AHS) is a highly infectious non-contagious, vector born viral disease affecting all species of Equidae. It is classified as an Orbivirus of the Reoviridae family of which there are 9 serotypes. All serotypes (1-9) are distributed throughout South Africa, although there is a variation in their temporal distribution. It is endemic to (occurs naturally on) the African continent, and is characterised by respiratory and circulatory damage, accompanied by fever and loss of appetite.

### Host and Vector

Animals affected are, all breeds of horses (mortality rate of 70-90%), mules and donkeys. Wild life Equine species (Zebras) are resistant to the disease. The vector host, Culicoides midge, spreads AHS virus.

### How Do Horses Contract The Disease?

AHS does not spread directly from one horse to another, but is transmitted by the Culicoides midge, which becomes infected when feeding on other infected equidae. It occurs mostly in the warm, rainy season when midges are plentiful, and disappears after frost, when the midges die. Most animals become infected in the period associated with sunset and sunrise, when the midges are most active.

### Symptoms

The disease manifests in three ways, namely the lung form, the heart form and the mixed form. The lung (dunkop) form is characterised in the following manner:

- Very high fever (up to 41 degrees).
- Difficulty in breathing, with mouth open and head hanging down.
- Frothy discharge may pour from the nose.
- Sudden onset of death.
- Very high death rate (90%).

The heart (dikkop) form is characterised in the following manner:

- Fever, followed by swelling of the head and eyes.
- In severe cases, the entire head swells ("dikkop").
- Loss of ability to swallow and possible colic symptoms may occur.
- Terminal signs include bleeding (of pinpoint size) in the membranes of the mouth and eyes.
- Slower onset of death, occurring 4 to 8 days after the fever has started.
- Lower death rate (50%).

The mixed form is characterised by symptoms of both the dunkop and dikkop forms of the disease.

### Diagnosis and Notification

The symptoms described above may assist with an initial diagnosis of AHS. This diagnosis can only be confirmed by identifying the virus in a laboratory. It is, therefore, essential that blood samples be taken from the horse during the fever stage of the disease for analysis. As AHS is a controlled disease, horse owners are obliged by law to notify the local State Veterinarian of suspected cases.



## RECENT OUTBREAK INFORMATION

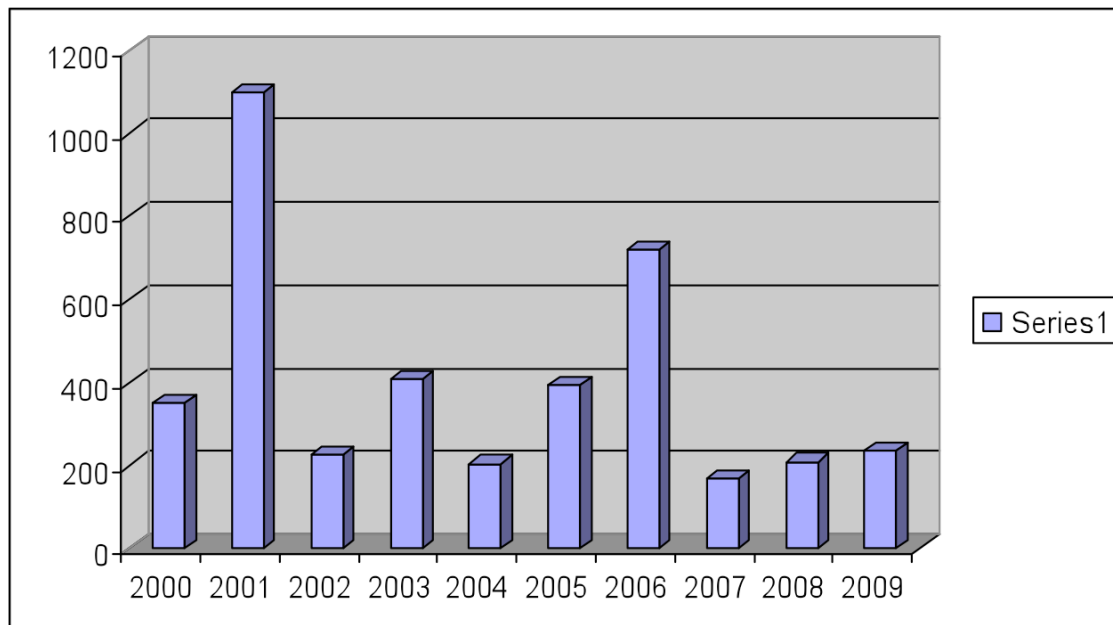
The AHS Trust assists with the reporting of AHS cases and has developed an online method of reporting cases

The results of the reporting over the past four outbreak seasons are as follows:

Overall Statistics:

	2005/6	2006/7	2007/8	2008/9
<b>Outbreak duration (months)</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>9</b>
<b>Total approved cases</b>	<b>850</b>	<b>163</b>	<b>707</b>	<b>236</b>
<b>Number of horses dead</b>	<b>148</b>	<b>89</b>	<b>409</b>	<b>139</b>
<b>Number of horses survived</b>	<b>72</b>	<b>74</b>	<b>298</b>	<b>97</b>
<b>% deaths</b>	<b>17%</b>	<b>55%</b>	<b>58%</b>	<b>59%</b>

### AHS Outbreaks



Graph courtesy of Equine Research

## REPORTING PROCEDURES FOR AHS 2010

### AHS Outbreak Reporting 2010/2011

The AHS Trust has once again undertaken to assist the Department of Agriculture with the reporting of outbreaks. It is critical that all cases are reported as they occur, as the movement of infected horses or horses incubating the disease will lead to the spread of virus to areas previously free of the disease. This is especially critical when moving horses into the Controlled Area of the Western Cape as South Africa's export status depends on maintaining the freedom of this area. All cases must be reported. The official disease reporting forms are available from the State Vet or from the AHS Trust. Please ensure that they are filled in correctly, with all information requested and returned. If in doubt, consult your local veterinarian or contact the AHS helpline.



## REPORTING PROCEDURES cont'd

### Cases Where Samples Should Be Taken

1. All or new cases for an area, cases that appear to be EEV and cases that show abnormal clinical symptoms should be sampled.
2. The following samples are required from clinical cases:
  - A. RED (Top) – Serum
  - B. GREEN (Top) – Herparin
  - C. PURPLE (Top) – EDTA
3. The following samples are required on ice from dead horses:
  - A. LUNG
  - B. SPLEEN

### What To Do with Samples

1. The official **Notification And Sample Submission Form** (enclosed) needs to be completed in full and faxed to the Department of Agriculture and your local state veterinarian.
2. Send the samples, along with a copy of the above **Notification And Sample Submission Form**, to the Equine Research Centre.

Dr M Quan  
Equine Research Centre  
University of Pretoria  
Zoutpan Road  
0110 Onderstepoort

The samples must be packed in a cooler box with ice packs and sent overnight courier (we have found Speed Services via Postnet to be the most efficient).

The cost of the courier, together with all information, can be sent and billed to:

The AHS Trust  
PO Box 40  
Durban  
4000

***IF ALL RELEVANT INFORMATION IS SUPPLIED TO THE AHS TRUST, THE TRUST WILL LOAD THE DATA ON THE AHS WEBSITE, NOTIFY THE LOCAL STATE VET, DEPARTMENT OF AGRICULTURE AND BOLAND STATE VET ON YOUR BEHALF AND FOLLOW THE SAMPLES TO A RESULT.***

### Cases Where Samples HAVE NOT Be Taken

1. Go to [www.africanhorsesickness.co.za](http://www.africanhorsesickness.co.za) and register a new case – with as much detail as possible.

**OR**

2. Complete the official Department of Agriculture **Notification And Sample Submission Form**, stating the number of samples taken, and fax to 034 312 4263 if you require the AHS Trust to submit the report on your behalf.

**ALL SUSPECTED CASES OF AHS MUST BE REPORTED**



## PROTECTIVE MEASURES

### Vaccinations

Currently, approximately only 50% of the national herd of horses is vaccinated, many of which have inadequate immunity due to ignorance or non-compliance of the recommended vaccination procedures. As a result, the risk to the inoculated herd increases dramatically and the Trust urges all horse owners to routinely vaccinate under the following conditions:

- Where possible use professional veterinary services.
- Ensure that the cold chain is not broken prior to administering the vaccine.

Ideally vaccinate during the low vector activity period (August – October). This ensures that optimal vaccine immunity is provided during the high-risk period of March and April. This increased vaccine coverage will reduce the impact of outbreaks and the risks of the rapid spread of the disease in high-risk periods.

Previously vaccinated horses can be worked normally during the vaccination period only if no temperature reaction to the vaccine is indicated. Horses receiving their first AHS vaccine should not be exercised or only minimally exercised during the 6-week vaccination period.

### Additional Protection Methods

Apart from vaccination, horse owners should consider the following additional measures to reduce exposure to the disease:

- **Stable horses when the vector is most active** i.e. from late afternoon to mid morning.
- **Cover all access points in the stable with 80% shade cloth** – it has been proven to reduce the midge activity inside the stables up to 14 times. For horses living out, shade cloth awnings could be built and horses enclosed during the night.
- **Place fans in stables:**  
Midges are attracted to horse odours and the carbon dioxide emission of the horses – a fan will assist in dispersing the odour trail.  
Midges are very light and appropriately directed air movement makes it difficult for them to enter stables and/or to stay immobile long enough to feed.

The spread of the disease is directly linked to the midge activity in the area and this is dependant of a number of conditions, such as rainfall, temperature, breeding sites and soil types. Areas that have sandy soils seem to have less midge activity than areas with clay based soils. The high rainfall we have been experiencing increases the breeding cycle of the vector and therefore increases the transmission of the disease.

### Myths

- Smoking drums at stables – this seems to have no effect on midge activity.
- Repellents – may assist in reducing the number of midges feeding, but is not guaranteed or necessarily adequate to protect animal completely.
- Garlic supplements – no scientific evidence that supports this.
- Moving horses to higher ground – depending on other factors, midges can operate at altitude



## CONTROL OF AFRICAN HORSE SICKNESS

African Horse Sickness (AHS) is one of a number of diseases known to be potentially damaging to the livestock economy. By way of the Animal Diseases Act (Act No. 35 of 1984), AHS has been declared a state controlled disease, thereby empowering the state to implement measures to control the disease. Horse owners are also required by this law to notify their local state veterinarian of any cases of AHS. The Act also requires that all equines (horses, donkeys and mules) must be vaccinated at least once a year with an approved AHS vaccine.

### **African Horse Sickness (AHS) Control Policy**

The policy regulating AHS control and control over the movement of equines (horses, donkeys and mules as per definition) and zebra into and within the AHS Controlled Area of the Western Cape Province (WCP), has been revised. This was necessitated in part by the recent changes in the boundaries of the AHS Protection Zone (EU Decision 2001/622/EC of 27<sup>th</sup> July 2001 and Animal Diseases Regulations No. R885 of 21<sup>st</sup> September 2001) and amendments to the:-

### **Vaccination Protocol**

1. All registered equines in the Republic of South Africa wanting to enter the AHS Control Areas must be vaccinated by a **Veterinarian** or a specifically authorized **Animal Health Technician (AHT)** in the employment of the Veterinary Authority, under direct supervision of the **State Veterinarian** concerned.
2. Vaccination must be done **annually** with **AHS I** and **AHS II** vaccine.
3. There must be a minimum of **3 weeks** between I and II and the horse may **not** move into the AHS Control Area less than 60 days after the second vaccination.
4. All horses must be registered and identified by means of a **passport**. If not a competing horse, then a certificate of identification, acceptable to the State Veterinarian Boland may be considered following consultation with this office.

### **Movement Controls**

Movement controls into the AHS Control Area in the Western Cape were introduced when the export protocol (1997/10/EC) was ratified by the European Commission in 1997. Based on guidelines given by the World Animal Health Organisation (OIE), and South African and European legislation, the South African Veterinary Authority established a policy for the movement of all equines into this area.

**PLEASE CONTACT THE BOLAND STATE VET  
FOR FURTHER INFORMATION  
REGARDING THESE CONTROLS.**

**Dr G Buhrmann  
021 808 5026 (office hours)  
Cell 083 652 6617  
email: garyb@elsenburg.com**



## ABOUT THE AFRICAN HORSE SICKNESS TRUST

### The African Horse Sickness Trust – Executive Summary

The African Horse Sickness Trust is a non profit organisation established in 2005 in response to the continued threat to South Africa's equine population by African Horse Sickness (AHS).

#### **Mission Statement:**

**“To eliminate African Horse Sickness as a threat to the horse industry in South Africa”.**

To attain this The AHS Trust has a number of short, medium and long term objectives.

#### **Short Term Objectives (2-3 Years)**

- To establish a system of reporting AHS that more accurately reflects the number of cases annually as a basis to assess the economic impact of this disease in South Africa.
- To assist the State Veterinary Authority in providing an “Early Warning System” in order to protect horses and the AHS controlled area in the Western Cape.
- To facilitate constant and meaningful communication between all AHS research bodies and relevant Government Institutions and Departments in South Africa.
- To facilitate co-operation with international research institutions.
- To plan, implement and fund a blanket vaccination programme in high risk areas throughout South Africa to assist in raising the percentage of vaccinated horse from 30% to 75 %.

#### **Medium Term Objectives (3-5 Years)**

- Facilitate research into practical “on farm interventions” that horse owners can apply in the face of an outbreak or in the case of vaccine failure into the future.
- To assess the relevance of a single strain inactivated (dead) vaccine.
- To identify the role of zebra in AHS and its transmission.
- To assist the Equine Research Centre with its development of a new diagnostic test and vaccine.

#### **Long Term Objectives (5 years +)**

- To facilitate research into the development of a more effective modern vaccine that will afford horse owners good immunity to all strains of AHS even in seasons of high disease pressure.
- To facilitate research into other unconventional (non vaccine) control measures that become viable due to advances in knowledge and/or technology.

For example,

- i. Pheromone mating disrupters – used successfully in the growing of fruit to reduce particular pest populations.
- ii. Vector predators, etc.



## ACHIEVEMENTS TO DATE:

1. Significant collection of data over the last two seasons in relation to the incidents of AHS.
2. Generally raising awareness of AHS.
3. The recent bringing together of all role players “around one table” to discuss current research into this disease.
4. Limited funding to two post graduate students of the School of Agricultural Sciences and Agribusiness at University of KwaZulu Natal.
5. Commissioning the CSIR to analyze the data collected by The AHS Trust. A report highlighting achievements and shortcomings in data collection and thus development of a strategy towards AHS was recently presented to The AHS Trust.
6. Implemented blanket vaccinations for four years covering the following areas: Gauteng, Northern KZN, KZN Midlands, Eastern Cape, Western Cape.

With the help of significant funding **The African Horse Sickness Trust** is confident that horse owners in South Africa can, over time, be relieved of the burden of African Horse Sickness and look forward to the day when excessive travel restrictions, particularly with regard to export are eased.

The AHS Trust is grateful for the ongoing support of Racing South Africa and all our other donors. Without their support, this important work would not continue.

## TO CONTACT THE AHS TRUST

24 Hour Emergency Call Centre:	<b>082 965 4082</b>
Fax Number for Faxed Submissions	<b>034 312 4263</b>
Address for Postal Submissions	<b>PO Box 40, Durban, 4000</b>
General Information	<b>dougw@tiscali.co.za</b>
Veterinary Information	<b>davemullins@futurenet.co.za</b>
Research Information	<b>dougw@tiscali.co.za</b>
Data Collection and Website Queries	<b>jamesu@global.co.za</b>
Secretariat	Sheila de Villiers Email: <b>sheilad@goldcircle.co.za</b> Tel: 031 314 1926 PO Box 40, Durban, 4000

**Website: [www.africanhorsesickness.co.za](http://www.africanhorsesickness.co.za)**

Donations can be made to: Name: African Horse Sickness Trust  
Bank: First National Bank  
Account no: 620 983 57885  
Branch: Durban Main  
Branch Code 221-426