A thoroughbred yearling colt at a racing yard outside Wellington in the African horse sickness (AHS) surveillance zone of the Western Cape developed serious central nervous system disease symptoms over a period of 48 hours in mid-March 2013. After supportive treatment he was euthanased and a post-mortem was performed at the Stellenbosch Provincial Veterinary Laboratory.

**Case history**

The colt originated from a stud farm in Ceres (Western Cape) and had arrived in the Boland after being bought at the Cape Yearling sales in January 2013. He was in a group with approximately 9 other yearlings on the farm where the management of yearlings is similar to that of their mares and foals: horses are kept out on pasture both during the day and night.

The day before he was euthanased the colt showed signs of disorientation in the morning. He had a fever and was brought into the stable where after he was treated with supportive therapy by the attending veterinarian. In the evening he collapsed and appeared to be lame in the hind quarters. After monitoring throughout the night and a re-evaluation by the vet in the morning it was decided to euthanase the animal.

**Pathology**

The necropsy of the animal showed moderate lung oedema with slight subcutaneous and intramuscular oedema at the base of the neck, signs of which can be indicative of AHS infection. Brain histopathology showed evidence of a viral encephalitis with perivascular cuffing of blood vessels with predominately monocytes and macrophages. There was also evidence of gliosis which is indicative of the damage to the central nervous system (CNS). The histopathology results tended away from AHSV as a possible aetiology but made other arboviral infections affecting the CNS a distinct possibility. Spleen and lung samples where sent to the Onderstepoort Veterinary Institute (OVI) for AHS testing.

**Further lab testing**

The OVI make use of a hemi-nested RT-PCR and results came back positive for the presence of AHSV RNA. The result however was based on a weak signal and was only obtained after a second extraction. Samples were then sent to the University of Pretoria (initially the Equine Research Centre (ERC) and then the Zoonosis Research Unit). The ERC make use of a real time PCR and the lung sample tested negative to AHS and EEV while the spleen sample returned a signal with a CT value of > 37 which is considered negative. (eds. note - during the AHS outbreak of 2011 we consistently has CT values of between 18 - 24 on positive q-RT PCR AHS cases and used a CT value of 30 as our cut-off for positive cases.) Samples were then tested at the Zoonosis Research Unit where they were negative for Alphaviruses (Sindbis and Middelburg viruses being the ones of interest here), negative for Flaviruses (West Nile) and negative for Equine encephalosis virus (EEV). The sample was however positive for Shuni virus.

**Remarks**

Shuni virus has been associated with cases of central nervous system disorders in horses in South Africa. It is an arbovirus (Arthropod Born) orthobunyavirus of the Bunyaviridae family and has been associated with both Culicoides and mosquito vectors. The clinical signs found in this case are very similar to those found by van Eeden et al. in their description of a positive case (also a yearling) originating in the Limpopo province of South Africa.

The population on the farm near Wellington consists of about 120 horses of varying ages. Since the Shuni diagnosis they have been monitoring their horses closely and although they have detected fever in a number of animals they have not had any further neurological cases.
CONTROL

Control of Culicoides or mosquito borne disease is always difficult based on the challenges of getting coverage within the environment where the vector thrives. The farm in question routinely performs outdoor spraying for flies which would also control mosquitoes and midges in those areas. Other alternatives would be stabling of at-risk horses during the high vector activity periods (in the late afternoon through till mid-morning), spraying individual horses with a registered insect repellent or moving animals away from the vector rich areas. There is currently no available Shuni virus vaccine for horses available in South Africa.

CONCLUSION

This case highlights the importance of awareness of horse owners and vets alike of the risks of arbovirus infections in equines at this time of year in this province. This is particularly true for AHS surveillance as any unexplained/diagnosed death or clinical presentation which has AHS as a differential diagnosis should be sampled and tested for to rule this disease out. During March we have also been made aware of two positive EEV cases in the Boland. EEV can be confirmed using PCR based testing.

REFERENCES AND ACKNOWLEDGEMENTS


Thanks to Dr Jacob Stroebel at the Provincial Veterinary Laboratory at Stellenbosch for the details of the histopathology in this case. Also thanks to the various labs involved with confirming the diagnosis using PCR methods. We’re also grateful to the affected farm’s personnel involved for their input and time.

Johne’s disease (paratuberculosis)

A merino farm in the Swartland district was confirmed as being infected with Johne’s disease during March 2013. The case occurred in a four-year-old ewe which showed emaciation and depression. Confirmation was made on histopathology using ZN staining.

The affected farm borders on a farm which has previously been confirmed positive for Johne’s. There is over the fence contact between the two flocks of sheep and this is a potential source of infection. Another potential source was from rams which are acquired by the farmer (three to four rams twice per year). He has recently bought in from two breeders in the Moorreesburg region (one of which is a Johne’s positive farm) as well as buying in from an auction in the Eastern Cape.

The farm has been placed under quarantine and the farmer will be applying to vaccinate during the coming months.
We have expanded our OIE listed diseases database to include farm visits made by officials. This has been in an attempt to allow those technicians who are not involved as much with the routine vaccinations of OIE listed diseases like anthrax and rabies to make use of the online system. An example of this is the George officials who have been involved primarily with the HPAI outbreak on Oudtshoorn during the past two years. Initially they were involved with sampling of ostrich farms and currently much of their time is taken up with registration of ostrich farms under the ‘new’ VPN 4 of July 2012. The GREEN dots on in the map above now indicate farm visits not associated with OIE listed disease events. Immediately the Oudtshoorn area has a lot more activity compared to previous OIE listed disease/vaccination maps.

Other reasons why farm visits are logged during March included:

- Farm inspections with census
- Sheep scab follow-up inspections
- Developing farmer assistance via education/farmer days as well as treatment of stock with multivitamins
- Disease surveillance - African horse sickness sentinels
- TB surveillance

We are also excited as we are migrating our databases away from the MS Access platform to a SQL Server backend which will improve our data integrity. The OIE listed diseases database is the second of our major databases to undergo this process.
In Vanrhynsdorp another two cases of Bluetongue were identified clinically by the animal health technician, Jacques Kotze.

Two cases of 
H6 low pathogenic avian influenza have been identified on two ostrich farms in the Oudtshoorn region. Both cases are in the early stages of investigation and the H6 diagnosis is based on the preliminary serological testing performed to date. The first farm has had a low farm level prevalence of matrix gene positive PCR results (4%) but no further characterisation was possible. This farm’s serological picture shows a decreasing farm level prevalence of ELISA (Multiscreen assay) results over the last month of testing with a maximum prevalence of 10%.

The second farm results are less clear. There are no positive PCR results and there has been a very low (between 3 and 7%) farm level prevalence of ELISA positive results. Those positive ELISAs have returned negative H5N1 results, a single 1:16 H5N2 positive HI result, one low positive H5N2 result, 1 low positive H6N2 result and 2 low positive H6N8 results. Based on this we have preliminarily classified this as a H6 positive case until we have further confirmation of the AI subtype.

Another rabies case was confirmed in the Beaufort West region (please see the Feb 2013 report for the initial case in this outbreak). The map on the preceding page shows the initial follow up vaccinations (transparent skull and cross bones) performed for the case just east of Beaufort West. The new case was west of Beaufort West and again follow up vaccinations were performed in the immediate area. This case was in a bat-eared fox which was killed by a farm worker before any human/animal contact was made. Another suspect case near Merweville was also followed up on with ring vaccination of dogs and cats in the immediate vicinity. We have had no further suspect cases since early March.

A Boerboel in the Malmesbury district suspected of rabies has subsequently tested negative for the virus. It started attacking its owners and required darting prior to euthanasia as a result of the aggression it showed. The dog was in poor condition. The four attacked members of the family were attended to in hospital after all four of them were identified as having category 3 contact with the animal (superficial or deep bites and bleeding wounds).

A dorper farmer in the Laingsburg region lost seven lambs to what is suspected to be Pasteurella-associated pneumonia. The flock (136 animals) was vaccinated against the disease after the cases occurred and no further problems have been reported.

Two cases of pulpy kidney in sheep were reported from the Beaufort West region.

Two animal welfare organisations in the Joostenbergvlakte area in Boland reported a suspect case of botulism in three puppies. A confirmatory diagnosis was not made. The puppies showed signs of ascending posterior paresis and all three were euthanased. Botulism is a rare condition in dogs as they are generally resistant to the ingested toxin but cases can occur in canines which have access to carcasses.

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<th>OIE Listed Diseases logged</th>
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### Outbreak events

**SV Area** | **User** | **Total Logs**  
-----|---------|-------|
Malmesbury | Hendrik Hagen | 66  
Beaufort West | Anton Barnard | 50  
Swellendam | Magrietha van Wyk | 45  
Swellendam | Wynand Fourie | 44  
Beaufort West | Cobus Ferreira | 43  
Beaufort West | Nita Vosloo | 36  

Disclaimer: This newsletter is published on a monthly basis for the purpose of providing up-to-date information regarding epidemiology of animal diseases in the Western Cape Province. Much of the information is therefore preliminary and should not be cited/utilised for publication.