



Department
for Environment
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DEFRA / AHT / BEVA EQUINE QUARTERLY DISEASE SURVEILLANCE REPORT Volume 9, No.1: January – March 2013



Highlights in this issue:

- **Contagious Equine Metritis in the USA and Europe**
- **Equine Herpes Virus in the United Kingdom**
- **Focus article: African Horse Sickness – the Disease Control Strategy of Great Britain**

Important note:

The data presented in this report must be interpreted with caution, as there is likely to be some bias in the way that samples are submitted for laboratory testing. For example they are influenced by factors such as owner attitude or financial constraints or are being conducted for routine screening as well as clinical investigation purposes. Consequently these data do not necessarily reflect true disease frequency within the equine population of Great Britain.



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Introduction

Welcome to the first quarterly equine disease surveillance report for 2013 produced by Department of Environment, Food and Rural Affairs (Defra), British Equine Veterinary Association (BEVA) and the Animal Health Trust (AHT). Regular readers will be aware that this report collates equine disease data arising from multiple diagnostic laboratories and veterinary practices throughout the United Kingdom giving a unique insight into equine disease occurrence on a national scale.

National disease occurrence

Equine Influenza (EI)

Equine influenza continues to be of importance within the United Kingdom. In this issue we report one outbreak that occurred during the first quarter.

The outbreaks have been reported by the text alert service sponsored by Merial Animal Health, **Tell-Tail**. This free of charge service alerts practitioners to outbreaks of equine influenza in the UK via text message. Equine veterinary practitioners can sign up for this scheme by registering at the following website <http://www.merial.co.uk>. This service has also been offered to the members of the National Trainers Federation (NTF). If you would like to contact us regarding outbreaks of equine influenza virus or would like to sign up for our sentinel practice scheme, please contact: equiflunet@aht.org.uk or follow the link to www.equiflunet.org.uk for more information on equine influenza.

Equine Herpes Virus-1 (EHV-1)

Seventeen outbreaks of EHV-1 have been reported in the first quarter of which eight were neurological outbreaks, three respiratory and six abortions.

Two further outbreaks have since been confirmed and reported. The first occurred on 8th April 2013 in North Yorkshire in which seven unvaccinated non-Thoroughbred mares were affected. The second was confirmed on 24th April 2013 in Surrey in which a single unvaccinated Thoroughbred-cross mare was involved. Diagnoses were made by PCR testing of fetal tissues and the affected mares were isolated and control measures are being undertaken in accordance with the HBLB Codes of Practice.

International disease occurrence

Contagious Equine Metritis (CEM)

Several cases of Contagious Equine Metritis (CEM) have been reported during the first quarter.

Five cases were reported in the USA. One Dutch Warmblood mare and three other mares that had recently been imported, tested positive to CEM in Kentucky. One further case reported in a Lusitano mare in California. CEM was also reported in Ireland in a non-Thoroughbred stallion which tested positive in April 2012 and following treatment had subsequently tested negative by bacteriology on three occasions. The same horse tested



positive to CEM by PCR on 27th February 2013 and 6th March 2013. It is unclear if the horse has developed a new infection or is suffering re-infection.

Equine Herpes Virus-1 (EHV-1)

A number of cases of EHV-1 have been reported throughout Europe and the USA throughout the first quarter.

Seven cases of EHV-1 abortion were reported in France, four in Belgium and single cases in Ireland and Switzerland.

In the USA, nine outbreaks of EHV-1 neurological disease have been reported in the States of California, Colorado, Florida, Illinois, Michigan, Montana, Tennessee and Utah, affecting 25 horses. Single outbreaks of EHV-1 neurological disease have also been reported in France and Estonia.

A single case of EHV-1 respiratory disease was reported in France.

Equine Influenza (EI)

Two outbreaks of equine influenza (EI) were reported in the USA. The first involved a four-year-old Quarter horse mare in Eastern Oregon which has since been placed in isolation. The second outbreak was confirmed in horses quarantined at the Ocala Horse Show, Florida in which multiple clinical cases reported.

Hendra Virus

On 22nd February 2013 Biosecurity Queensland reported a case of Hendra Virus at a property in the Tablelands area where one horse has died. The premises has been placed under quarantine and other horses on the property will undergo testing and monitoring.



Focus article

In this report we are pleased to include a focus article written by Richard Hopley from DEFRA Exotic Diseases Policy and Implementation, and Balazs Toth from the AHVLA Veterinary Exotic Notifiable Diseases Unit. The article provides an overview of the African Horse Sickness disease control strategy of Great Britain.

We reiterate that the views expressed in this focus article are the authors' own and should not be interpreted as official statements of Defra, BEVA or the AHT.

Access to all of the equine disease surveillance reports can be made on a dedicated page on the recently updated Animal Health Trust website at http://www.aht.org.uk/cms-display/disease_surveillance.html or via the BEVA and Defra websites:

<http://www.beva.org.uk/news-and-events/news>

<http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/vetsurveillance/reports/listing.htm>

We would remind readers and their colleagues that a form is available on the AHT website for registration to receive reports free of charge, via e-mail, on a quarterly basis. The link for this registration form is available via http://www.aht.org.uk/equine_disease_registration.html.



Virology Disease Report for the First Quarter of 2013

The results of virological testing for January to March 2013 are summarised in Table 1 and include data relating to Equine Viral Arteritis (EVA), Equine Infectious Anaemia (EIA) and West Nile Virus (WNV) from the Animal Health Veterinary Laboratories Agency (AHVLA), Weybridge. The sample population for the AHVLA is different from that for the other contributing laboratories, as the AHVLA's tests are principally in relation to international trade (EVA and EIA). AHVLA now provides testing for WNV as part of clinical work up of neurological cases on specific request and provided the local regional AHVLA office has been informed.

Table 1: Diagnostic virology sample throughput and positive results for the first quarter 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<u>Serological Tests</u>			
EVA ELISA	5120	79 [#]	5
EVA VN	1489	105 [#]	3
AHVLA EVA VN	632	25	1
EHV-1/-4 CF test	852	39 [*]	2
EHV-3 VN test	2	0	1
ERV-A/-B CF test	104	1 [*]	1
Influenza HI test	127	0 [*]	1
EIA (Coggins)	2083	0	3
EIA ELISA	3561	4	4
AHVLA EIA (Coggins)	909	0	1
AHVLA WNV (PRNT)	3	0 ^{**}	1
<u>Virus Detection</u>			
EHV-1/-4 PCR	112	16	2
EHV-2/-5 PCR	30	8	1
Influenza NP ELISA	60	0	2
Influenza Directigen	146	0	2
Influenza PCR	102	2	1
Influenza VI in eggs	2	2	1
AHVLA Influenza PCR	91	0	1
EHV VI	275	42	1
EVA VI/PCR	3	0	1
AHVLA EVA VI/PCR	12	0	1
Rotavirus	59	14	9

ELISA = enzyme-linked immunosorbent assay, VN = virus neutralisation, VLA = Animal Health Veterinary Laboratories Agency, CF = complement fixation,

HI = haemagglutination inhibition, Coggins = agar gel immuno diffusion test, PCR = polymerase chain reaction, NP = nucleoprotein,

VI = virus isolation, EVA = equine viral arteritis, EHV = equine herpes virus, ERV = equine rhinitis virus, EIA = equine infectious anaemia

= Seropositives include vaccinated stallions, * = Diagnosed positive on basis of seroconversion between paired sera ** = Seropositive due to vaccination



Virological Diagnoses for the First Quarter of 2013

Equine Influenza

One outbreak of equine influenza (EI) was confirmed and reported in the first quarter.

On 12th February 2013, the Animal Health Trust confirmed equine influenza in two horses in Ayrshire, Scotland. Two vaccinated Dutch Warmblood horses showed clinical signs of pyrexia, anorexia, mucopurulent nasal discharge and a cough and diagnoses were made by qPCR on nasopharyngeal swabs. Both horses had recently been imported from the Netherlands. The viral isolates are Clade 2 of the Florida H3N8 sublineage and are very similar to sequenced viruses isolated from previous outbreaks of EI on the continent.

Equine Herpes Virus-1 - neurological disease

Eight outbreaks of equine herpes virus-1 (EHV-1) neurological disease were confirmed and reported in this quarter by the Animal Health Trust. In all cases positive diagnoses were made by PCR testing of nasopharyngeal swabs.

Seven outbreaks of EHV-1 have been confirmed in the West of England. The first outbreak occurred on 15th January 2013 in a non-vaccinated Thoroughbred horse was affected that showed mild neurological signs. Eleven in-contact horses were identified. On 31st January a second outbreak was confirmed in an eleven year old hunter horse and a ten year old Thoroughbred. Both horses showed neurological signs. Additional cases of EHV-1 were confirmed on 7th March in a non-Thoroughbred competition horse that had been euthanased. One other horse from the same yard showed mild ataxia and two others, pyrexia.

On 16th March EHV-1 was confirmed in a non-Thoroughbred competition horse and subsequent serological testing showed infection among several horses that had shared a common airspace with the affected horse. Epidemiological testing has highlighted that a horse from the premises confirmed with EHV-1 on 31st January, was moved to this premises ten days previously against veterinary advice. The horse had also been taken to a hunt meeting after which another case of EHV-1 was confirmed on 19th March in Wiltshire. The affected horse had attended the same hunt meeting and presented with poor performance. EHV-1 was confirmed on 21st March in one further horse that also attended the same hunt meeting. The affected horse was an eleven year old non-Thoroughbred gelding that showed clinical signs of pyrexia, cough and serous nasal discharge. Three in-contact horses were identified.

One further outbreak of EHV-1 was confirmed in Gloucestershire on 21st March 2013. Four in-contact horses underwent testing, one of which tested positive on virus isolation.

In addition to the West of England, the East of England has also been affected by EHV-1. A single fatal case of EHV-1 neurological disease occurred on 22nd January 2013 in a non-vaccinated Thoroughbred horse.



Equine Herpes Virus-1 - respiratory disease

Three outbreaks of EHV-1 respiratory disease were confirmed by the Animal Health Trust in this quarter. Diagnoses were made by PCR testing of nasopharyngeal swabs.

The first outbreak occurred on 15th February 2013 and involved a donkey from the South West of England that showed clinical signs of nasal discharge and a cough. One other donkey showed similar clinical signs. The second outbreak occurred in Buckinghamshire on 21st February 2013 where one horse showed clinical signs of nasal discharge. The final case occurred on 25th March 2013 in Aberdeenshire where an 11 year old Warmblood gelding showed clinical signs of a cough and bilateral nasal discharge. One other horse showed similar clinical signs.

Equine Herpes Virus-1 - abortion and neonatal deaths

Six outbreaks of abortion and two cases of neonatal death were confirmed in the first quarter. In all cases diagnoses were made by PCR of fetal or foal tissues and control measures were undertaken in accordance with the HBLB Codes of Practice.

On 31st January and 4th February 2013 single cases of EHV-1 abortion were reported in vaccinated mares from separate studs in Suffolk. On 8th March 2013 EHV-1 was confirmed in Cambridgeshire as the cause of death in a neonatal Thoroughbred foal that died shortly after birth. Three days later an EHV-1 abortion was confirmed at the same premises in a vaccinated mare that had been in close contact with the first case.

An EHV-1 abortion was reported in Aberdeenshire in an unvaccinated Thoroughbred mare on 13th March 2013 and two in-contact mares were identified. Two further EHV-1 abortions occurred on two different premises in Suffolk on 15th March and 25th March 2013. Single abortions affecting vaccinated mares occurred in both cases. The final case occurred on 26th March 2013 in Suffolk in which a vaccinated mare foaled a live foal at full term however the foal died shortly after birth.



Focus Article: African Horse Sickness – the Disease Control Strategy of Great Britain

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The disease – Government's Reasons for Intervention

African Horse Sickness (AHS) is an exotic animal disease, which is internationally recognised as having the potential to cause severe damage to the equine industry through direct losses of susceptible animals, damage to related industries, and trade.

AHS is a fatal and infectious disease spread by certain species of midges, affecting horses, mules, donkeys and other equidae. The fatality rate in horses is very high, with severe clinical disease followed shortly by death in up to 95 per cent of those infected. Donkeys are more resistant to the disease, with less severe clinical signs and death expected in around 5 to 10 per cent of cases. African horse sickness is endemic in sub-Saharan Africa, and has also spread to Morocco and the Middle East.

New Legislation

New legislation in England and Scotland, with equivalent legislation expected shortly in Wales, provides Government with the legal powers to tackle outbreaks of AHS in Great Britain. The new African Horse Sickness (England) Regulations 2012¹ and African Horse Sickness (Scotland) Order 2012² provide effective and proportionate controls in line with the requirements of European legislation. They also allow the necessary flexibility required to adapt to the range of possible disease scenarios. The new Regulations are seen as a crucial step in improving our preparedness for this disease.

The Regulations themselves are published online and available for download from the legislation.gov.uk website.

What is a Disease Control Strategy and what does it do?

In parallel to the Regulations, a Great Britain Control Strategy document was drawn up by a group with members from the equine industry, academia, research organisations and the Government. It complements the Regulations by explaining how the legal powers will be used in the event of an outbreak and by putting the regulations into easily understandable terms so that everyone can understand how Government will control an outbreak of AHS. It sets out procedures to be followed and restrictions that apply in the event of a suspected or confirmed outbreak of AHS. The document is published on the Gov.uk website.³

Options to be considered during the time of disease freedom and when disease appears in another European country or a third country

The disease is considered endemic in a number of African countries and cannot be currently found in Europe, although the disease has been recorded previously in Spain (1966, 1987-90), Portugal (1989) and Cyprus (1969).

In case the disease would appear outside of the area of its current geographical distribution, additional trade safeguard measures would be implemented to prevent further spread of the disease. The Control Strategy also recommends communications campaigns to raise stakeholder awareness of the clinical signs of the disease as well as stepping up surveillance activities in animals, vectors and meteorology.



What happens if AHS is suspected within Great Britain?

AHS is a notifiable disease and therefore any person (e.g. veterinary surgeon, owner, keeper etc.) who suspects AHS infection in a live equidae or its carcass, must immediately notify their local AHVLA Office. The contact details to the regional AHVLA Offices can be found online⁴. The Control Strategy gives a detailed description of the procedure to be followed when following up a reported suspicion of disease.

Following a report of suspected AHS on a premises, a Veterinary Officer will attend the premises and carry out a veterinary inquiry, if possible involving the owner or keeper of the animal and any veterinary surgeons looking after the suspect case.

For the duration of the investigation, the affected premises will be placed under official restrictions that serve as additional biosecurity measures preventing disease spread from a potentially infected place.

In some cases, the suspicion of AHS can be ruled out based on the findings of the inquiry. If however this is not the case, samples will be taken from the animal(s) and they will be couriered to an official testing laboratory. Restrictions will only be lifted from a premises if the outcome of the investigation is confirmed as negative by the AHVLA.

Confirmation of African Horse Sickness in Great Britain

Confirmation of the presence of AHS in a previously disease free country is based on laboratory test results and may involve a consultation of disease experts. Once disease is confirmed, domestic stakeholder groups and international organisations (OIE and EU) are informed.

In order to limit the spread of the disease and regain disease freedom as soon as possible, a range of disease control measures is described in the Strategy. As much as possible, these measures take into account the vector-borne nature of the disease and also the specifics of the susceptible animal population – equidae.

What measures can be used to limit the effects of the disease and to ultimately regain disease free status?

Upon confirmation of disease, large zones are placed around infected premises (IP). The inner (“control”) zone will be at least 20 km in radius. It is included in the “protection zone” that has a minimum of 100 km radius around the IP, which again is included in the “surveillance zone” that goes at least a further 50 kilometres beyond the limits of the protection zone. The three zones together are sometimes called the “restricted zone”. Multiple infected premises (IPs) will trigger multiple, sometimes overlapping zones.

The most important difference a “zone” brings is a restriction on movements. In the Control Zone no equidae movements will be allowed except under the authority of a licence. Movements of equidae may be allowed out of the Protection and Surveillance Zones to an area outside of all zones under the authority of a licence only. Movement within either zone PZ or SZ may be permissible, except where the horse shows clinical signs of African horse sickness on the day of move.

Apart from zoning, there are a range of further disease control measures described in the Control Strategy that would be applied on the infected premises and in the various zones around them. However, the involvement of an insect vector makes the control efforts more difficult.



In the early stages of the outbreak, Government will act rapidly to try to prevent the establishment of disease circulation in the vector population by euthanising infected horses. This however will only be done at the initial stage of an outbreak and only if it brings an epidemiological benefit.

If the outbreak cannot be stopped using this approach, killing further horses may not be the most appropriate or beneficial approach. In this situation Government, with the support of disease experts will focus efforts on other measures such as vector control, movement restrictions and possible vaccination.

Owners and keepers of equidae also have a vital role in the disease control efforts by complying with the various movement restrictions and applying the required level of biosecurity and vector control.

Will Government pay compensation for horses that are killed?

The new legislation provides for Government compensation to be paid for horses killed for disease control purposes, if they are killed but are later tested negative for the virus. No compensation is payable however for horses that are infected with AHS and are tested positive by the National Reference Laboratory for AHS. The compensation for a horse will be the value of the horse immediately before it was killed, but will not exceed £2500 in any case. Further details about how the value of the horse is established can be found in the Strategy.

The use of vaccination

Vaccination is currently prohibited in the whole of the European Union and it can only be practised as a disease eradication measure with the agreement of the European Commission and the other Member States. No AHS vaccine is currently authorised by the Veterinary Medicines Directorate for use in Great Britain. However, the option to use vaccination as an emergency measure would be considered and vaccines may be sourced once the serotype of the AHS virus causing the outbreak is known.

The Chief Veterinary Officer of the UK may permit the use of an unauthorised vaccine on an emergency basis.

Vaccination requires compliance with keepers of equidae and is also associated with further temporary restrictions as detailed by the Control Strategy.

Further work is being done on AHS vaccines with the aim to develop more advanced vaccines allowing the use of the so-called “DIVA Strategy” – by differentiating infected and vaccinated animals by laboratory testing.

How does a country become “disease free” again to allow unrestricted movements and the resumption of trade?

In order to regain disease freedom, the Government needs to gather and present a robust evidence base using surveillance data to demonstrate that AHS is no longer present in Great Britain. This may take some considerable time and effort and countries outside the EU may require further guarantees. The surveillance needs to include domestic equidae, vectors and non-captive equidae as well.

In case vaccination was used, the zones and restrictions must remain in place for at least 12 months after completion of the last vaccination.



The above short description of the various disease control efforts highlights the high burden AHS would have on Great Britain and the need for all involved to be aware of the importance of keeping disease out by following transport rules and keeping high standards of biosecurity but also to contact AHVLA immediately if the suspicion of AHS arises.

¹ <http://www.legislation.gov.uk/ukxi/2012/2629/made>

² <http://www.legislation.gov.uk/ssi/2012/178/contents/made>

³ <https://www.gov.uk/government/publications/african-horse-sickness-control-strategy>

⁴ <http://www.defra.gov.uk/ahvla-en/disease-control/reporting-suspicions/>



Bacteriology Disease Report for the First Quarter 2013

A summary of the diagnostic bacteriology testing undertaken by different contributing laboratories is presented in Table 2. For contagious equine metritis (CEM) all 29 HBLB approved laboratories in the UK contributed data.

AHVLA CEMO Data for the period January to March 2013

We are again pleased to include data relating to CEM testing from the Animal Health Veterinary Laboratories Agency (AHVLA), in this quarterly report. The sample population for the AHVLA is different from that for the other contributing laboratories as the AHVLA tests are principally in relation to international trade and/or outbreak investigations.

Strangles

Strangles remains endemic in the UK, especially among parts of the non-Thoroughbred horse population. Diagnoses are confirmed in the UK based on traditional culture of *S. equi* and qPCR on respiratory samples and/or seroconversion using a serological ELISA.

Table 2: Diagnostic bacteriology sample throughput and positive results for the first quarter 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
CEMO (HBLB)	10575	0	29
CEMO (AHVLA)	503	0	1
<i>Klebsiella pneumoniae</i>[#]	10727 ¹	7	29
<i>Pseudomonas aeruginosa</i>	10700 ¹	44	29
Strangles*culture	1248	125	20
Strangles PCR	515	65	2
Strangles ELISA	1443	313 ²	2
Salmonellosis	435	20	18
MRSA	540	1	11
<i>Clostridium perfringens</i>	189	10	8
<i>Clostridium difficile</i> (toxin by ELISA or immunochromatography)	195	10	10
Borrelia (by ELISA)	20	1	1
<i>Rhodococcus equi</i> culture/PCR	786	6	9
<i>Lawsonia intracellularis</i>**culture/PCR	28	8	5

CEMO = contagious equine metritis organism (*Taylorella equigenitalis*); HBLB = HBLB accredited laboratories; [#] =capsule type 1,2,5; AHVLA = AHVLA reference laboratory; **Streptococcus equi* subsp. *equi*; MRSA = methicillin resistant *Staphylococcus aureus*. ** *Lawsonia intracellularis* identified using PCR applied to faeces; ¹ reproductive tract samples only; ² seropositivity may be attributed to disease exposure, vaccination, infection and carrier states.

AHVLA *Salmonella* results

From the incidents involving strains typed by the AHVLA the serovars/phagetypes reported were *S. Butantan* (2 samples), *S. Enteritidis* PT20 (1), *S. Stourbridge* (1), *S. Typhimurium* DT104 (1), *S. Typhimurium* DT12 and *S. Typhimurium* U323 (1). For more information from AHVLA about *Salmonella* in the UK, please visit http://vla.defra.gov.uk/reports/rep_salm_rep11.htm.



Toxic and Parasitic Disease Report for the First Quarter 2013

A summary of diagnostic toxicosis and parasitology testing undertaken by contributing laboratories is presented in Tables 3 and 4 respectively. Results for toxicosis are based on histopathologically confirmed evidence of disease only (where applicable).

Table 3: Diagnostic toxicosis sample throughput and positive results for the first quarter 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
Grass Sickness	10	1	2
Hepatic toxicoses	16	3	2
Atypical myopathy	0	0	2*
Tetanus	0	0	1

*Includes contributing laboratories with no cases submitted

Table 4: Diagnostic parasitology sample throughput and positive results for the first quarter 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<u>Endoparasites</u>			
Ascarids	3787	81	22
Cyathostomes	2127	541	7
Dictyocaulus	1126	6	14
Strongyles	4989	1797	26
Tapeworms (ELISA based testing)	81	32	6
Tapeworms (Faecal exam)	2492	36	11
Trichostrongylus	62	1	1
Strongyloides	3207	607	21
<i>Oxyuris equi</i>	126	3	4
Fasciola	128	7	4
Coccidia	42	2	2
Cryptosporidia	2	0	1
AHVLA <i>Theileria equi</i> (CFT)*	72	9	1
AHVLA <i>Theileria equi</i> (IFAT)**	173	17	1
AHVLA <i>Theileria equi</i> (cELISA)***	180	20	1
AHVLA <i>Babesia caballi</i> (CFT)*	72	1	1
AHVLA <i>Babesia caballi</i> (IFAT)**	156	2	1
AHVLA <i>Babesia caballi</i> (cELISA)***	180	0	1
<u>Ectoparasites</u>			
Mites	17	0	1
Lice	395	4	19
Ringworm	497	31	24
Dermatophilus	243	24	15
Candida	45	0	2

*Complement Fixation Test; CFT suspect/positive samples are tested in IFAT test

Indirect Fluorescent Antibody Test; *competitive Enzyme-linked immunosorbent assay; positive cELISA results are not undergoing confirmatory testing



[Grass sickness surveillance data \(www.equinegrasssickness.co.uk\)](http://www.equinegrasssickness.co.uk)

Only three cases of equine grass sickness (EGS) cases have been reported during the first quarter of 2013 (January – March). Of these, two cases occurred in England, and location was not reported for the third case. All affected horses were mares ranging from 9 – 17 years of age. Two cases diagnosed with the acute and subacute clinical forms were euthanased. Diagnosis of the acute case was confirmed by histopathological examination of an ileal biopsy obtained via laparotomy, while diagnosis of the subacute case was made by veterinary clinical examination alone. The remaining case diagnosed with chronic EGS, by veterinary clinical examination, was reported to have survived to date.

It should be noted that the grass sickness surveillance scheme receives data from a wider population in comparison to the data presented in Table 3 and different diagnostic criteria were used.

The nationwide EGS surveillance scheme was established in spring 2008 to facilitate the investigation of changes in geographic distribution and incidence of the disease in Great Britain. Data gathered by this scheme is collated in a strictly confidential database, and will be an invaluable resource in the development of proposed vaccination field trials of a *Clostridium botulinum* type C toxoid vaccine. Unfortunately, the number of cases reported to the scheme each year is decreasing. Therefore we would encourage both horse owners and veterinary surgeons to report any cases of EGS by contacting Jo Ireland at the Animal Health Trust (email jo.ireland@aht.org.uk). Further information is also available at www.equinegrasssickness.co.uk where questionnaires, collecting data on both affected premises and individual cases, can be viewed and completed online.



Report on Post-mortem Examinations for the First Quarter 2013

East Anglia

A total of 72 cases were examined including 45 aborted fetuses.

Of the aborted fetuses examined, there were thirteen cases of umbilical cord torsion, Equine Herpes Virus-1 (EHV-1) was isolated in eight cases, four cases of placentitis and two cases of premature placental separation. In addition there were five cases of hypoxia, two cases of meconium inhalation and single cases of hepatoblastoma, hydrops amnii, severe hydrocephalus and a case of urine retention and bladder distension. The cause of death could not be determined in six cases.

Five neonatal deaths were investigated, comprising three cases of dystocia, and single cases of bronchopneumonia and EHV-1.

Two neurological cases were examined. The first involved a nine year old Thoroughbred gelding that was euthanased following sudden onset ataxia and facial paralysis. The second horse examined was a seven year old Warmblood gelding from the West Country that was euthanased following the onset of ataxia. EHV-1 was isolated from both cases.

Five horses were examined following gastrointestinal disease. Single cases of severe parasitism, caecal rupture, pedunculated lipoma, colonic adhesions and epiploic foramen strangulation were identified.

Two respiratory cases were reported. Post-mortem examination of the first case revealed a diaphragmatic rupture and the second case involved a foal that suffered aspiration pneumonia.

One cardiac case was examined in which a Thoroughbred filly was euthanased following respiratory distress. Acute congestive left-sided heart failure leading to pulmonary congestion and oedema was determined as the cause of death.

A case of neoplasia was reported in which a diagnosis of lymphosarcoma was made.

Eight musculoskeletal cases were examined. Single cases of bilateral proximal phalanx fracture, comminuted proximal phalanx fracture, a fracture to the left proximal humerus, a septic joint, arthritis and bilateral laminitis were reported. Further cases comprised a focal spinal column cyst with spinal cord malacia and haemorrhages into the dura mater were reported in the final case.

Three other cases were reported. The first case comprised a thirteen year old Thoroughbred cross mare that was euthanased following weight loss and epistaxis. The clinical signs were believed to have been caused by a clotting disorder. The second case suffered an abdominal haemorrhage caused by a uterine artery rupture and a cause of death could not be established for the final case.



Home Counties

Eighteen cases were examined in this quarter.

Two aborted fetuses were examined this quarter of which both were found to have an umbilical torsion.

Seven cases of gastrointestinal disease were reported. Single cases of caecal rupture, pelvic flexure impaction, cyathostomiasis, duodenal impaction with a gastric rupture, gastric ulceration and rupture, large colon torsion and a strangulating lipoma were reported.

One cardiac case was examined in which a cardiac dysrhythmia was suspected as the cause of death.

One cases of neoplasia was examined in which a multicentric haemangiosarcoma was identified.

Seven welfare cases were investigated. Four cases suffered malnutrition. Cyathostomiasis was identified in two cases and the final case suffered enteritis and septicaemia.

South West

Twenty two cases were examined in this quarter.

Two aborted fetuses were examined. Examination of the first fetus revealed an umbilical cord torsion and the second fetus tested positive to Equine Herpes Virus and a diaphragmatic hernia was also identified.

One neurological case was examined which was found to have myeloencephalopathy with vasculitis.

Two cases of respiratory disease were reported in which one horse suffered an unidentified pulmonary infection and pneumonia was identified in the second.

Eight gastrointestinal cases were reported. Three of the cases were donkeys of which two suffered a pelvic flexure impaction and one pancreatitis. Five horses were examined. One horse suffered necrotising and haemorrhagic colitis, a second horse was found to have segmental ischaemic necrosis of small intestine. Single cases of enteropathy and an oesophageal rupture with mediastinitis and pleurisy were reported and diffuse thickening of the small intestine was identified in the final case.

A case of neoplasia was reported of which examination revealed pleural effusion with nodular masses in the pleura, diaphragm, mediastinum and pericardium.

Three musculoskeletal cases were examined of which two cases were donkeys. One donkey suffered trauma to the lower limb and a gastric ulcer was also noted on examination. The second donkey suffered a spinal deformity and post-mortem examination revealed hepatic fibrosis, focal choleostasis and mild cyathostomiasis. The final case involved a horse that had suffered vertebral and rib fractures along with spinal cord damage.



Five welfare cases were reported. Four of the cases examined were underweight and suffered intestinal parasites. The final case was emaciated and suffered intestinal parasitism and pediculosis.

Northern England

One case was examined in this quarter.

One respiratory case was reported and post-mortem examination revealed a haemangiosarcoma.

West Midlands

Two cases were reported in this quarter.

One gastrointestinal case was reported and post-mortem examination revealed a displaced colon.

One other case was examined which suffered septicaemia.

Scotland

Nine post-mortem examinations were carried out in this quarter.

Three neurological cases were examined this quarter. The first case showed clinical signs of a head tilt, grass sickness was suspected in the second and the final case suffered ataxia, cranial nerve deficits and progressive weakness.

Three gastrointestinal cases were reported. Following euthanasia of each case, intestinal adhesions were identified in the first case, the second suffered peritonitis and ileal necrosis and third, a caecal torsion.

One cardiac case was examined in which cardiomyopathy was identified.

One case of neoplasia was reported and post-mortem examination revealed lymphosarcoma.

A single case of hepatic disease was examined in which fascioliasis was identified.

Northern Ireland

Seven post-mortem examinations were carried out in this quarter.

Three aborted fetuses were examined this quarter. Diagnoses of umbilical cord torsion were made in two cases and the cause of death could not be determined in the third fetus.

One case of gastrointestinal disease was examined. A male yearling died after showing clinical signs of diarrhoea for four days. Post-mortem examination revealed large numbers of cyathostomiasis grossly and histologically in the large intestine. Multifocal necrotising pneumonia was also identified from which *Staphylococcus aureus* and a beta haemolytic Streptococci were isolated.



Three welfare cases were reported this quarter. An adult mare and a colt were examined, both of which were found to be underweight and to have strongyle infections. Finally post-mortem examination of an adult stallion revealed large number of strongyles, parascaris and cyathostomes, seen grossly and microscopically. In addition the liver showed histological changes consistent with ragwort toxicity.



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**We would welcome feedback including contributions on focus articles
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