



Department
for Environment
Food & Rural Affairs



DEFRA / AHT / BEVA EQUINE QUARTERLY DISEASE SURVEILLANCE REPORT Volume 9, No.2: April – June 2013



Highlights in this issue:

- **Equine Herpes Virus-1 in the USA and Europe**
- ***Taylorella asinigenitalis* the United Kingdom**
- **Focus article: Equine Piroplasmiasis**

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 the United Kingdom.



TABLE OF CONTENTS

<u>INTRODUCTION</u>	3
<u>VIROLOGY DISEASE REPORT FOR THE SECOND QUARTER OF 2013</u>	7
VIROLOGICAL DIAGNOSES FOR THE SECOND QUARTER OF 2013	8
<u>BACTERIOLOGY DISEASE REPORT FOR THE SECOND QUARTER OF 2013</u>	9
<u>TOXIC AND PARASITIC DISEASE REPORT FOR THE SECOND QUARTER OF 2013</u>	100
<u>FOCUS ARTICLE: EQUINE PIROPLASMOSIS</u>	11
<u>REPORT ON POST-MORTEM EXAMINATIONS FOR THE SECOND QUARTER OF 2013</u>	15
EAST ANGLIA	15
HOME COUNTIES	15
SOUTH WEST	16
NORTHERN ENGLAND	16
WEST MIDLANDS	16
SCOTLAND	16
NORTHERN IRELAND	17
<u>ACKNOWLEDGEMENTS</u>	1818



Introduction

Welcome to the second quarterly equine disease surveillance report for 2013 produced by the Department for 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 second quarter.

In addition, two outbreaks of EI have been diagnosed in July 2013. The first was confirmed on 16th July 2013 at a premises consisting of approximately 40 non-vaccinated, non-Thoroughbred horses in Northamptonshire. A positive diagnosis was made by qPCR on a nasopharyngeal swab from one of 12 animals reported to have developed typical clinical signs of fever, nasal discharge and coughing within a period of approximately 48 hours. The isolate has since been characterised as a Florida sublineage clade 2 virus on the basis of the genetic sequence of the haemagglutinin (HA1) gene. On the basis of both its HA1 and neuraminidase (NA) genes the virus is closely related to the viral isolate from the EI outbreak reported in Worcestershire on 28th November 2012.

The second outbreak of EI was confirmed on 24th July 2013 on a private premises with six non-vaccinated, non-Thoroughbred horses and ponies in Shropshire. Positive diagnoses were made by qPCR on nasopharyngeal swabs from four of the six animals that were all reported to have developed typical clinical signs of mucoid nasal discharge and mild to severe productive coughing. Investigations are continuing into the likely source of infection, which followed the introduction of a yearling pony onto the premises and attempts will be made to culture and characterise the virus.

The outbreaks have been reported by the text alert service sponsored by Merial Animal Health, **Tell-Tail**. This free 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).

The Horserace Betting Levy Board (HBLB) supports equine influenza surveillance in the UK, including free diagnostic testing for practices that sign up for the AHT's sentinel practice scheme. To register for the scheme and for more information on equine influenza UK vets should visit www.equiflunet.org.uk.

Equine Herpes Virus-1 (EHV-1)

Two outbreaks of EHV-1 abortion, one outbreak of EHV-1 respiratory and presumed neurological disease and an outbreak of neurological disease have been reported in the second quarter.



In addition, on 8th July 2013 an outbreak of EHV-1 abortion and neurological disease was confirmed on the same premises in Devon where a diagnosis of EHV-1 neurological disease was reported on 2nd July. The EHV-1 abortion involved a Thoroughbred mare and a positive diagnosis was made by PCR of placental and fetal tissues. EHV-1 neurological disease was confirmed in another Thoroughbred mare that showed clinical signs of ataxia, as reported on 2nd July. A positive diagnosis was made by PCR of a nasopharyngeal swab. Movement restrictions and control measures have been implemented on the affected premises and further diagnostic testing is being carried out. As of end of August 2013 no further cases have been reported.

Taylorella asinigenitalis

On 26th June 2013, the Animal Health Trust confirmed *Taylorella asinigenitalis* infection in a three-year-old entire male miniature donkey that had not previously been used for breeding on a premises in Buckinghamshire. Further diagnostic testing resulted in an additional confirmed case in a 13-year-old castrated male donkey that was turned out with the entire male miniature donkey that was previously reported. In both cases diagnoses were made by qPCR on samples collected from the prepuce, urethra and urethral fossa. Samples taken from three Shetland ponies (12-year-old gelding, 16-year-old gelding and 15-year-old mare) also present on the premises tested negative. Attempts to culture the organism from these samples and to trace the dam of the affected colt are continuing.

This is believed to be the first detection of *T. asinigenitalis* in the UK, but unlike *T. equigenitalis* is not required to be notified to Defra.

International disease occurrence

African Horse Sickness (AHS)

Two outbreaks of AHS occurred in South Africa in May 2013. The first outbreak involved three Thoroughbred horses, one of which died. The second outbreak affected one Thoroughbred horse. The agent was identified by PCR of a blood sample from the horse that had died. This horse did not show clinical signs consistent with AHS and did not have a history of recent AHS vaccination. Both outbreaks were detected in the Western Cape Province's AHS surveillance zone (Fig.1).

A preliminary outbreak assessment has been carried out by Defra which concludes that there is a negligible risk of introduction of AHS to the UK via legal trade. The situation is currently being monitored.



Fig. 1: Map of South Africa highlighting the location (red circle) in the Western Cape of two outbreaks of AHS diagnosed in May 2013.
Source: World Organisation for Animal Health (OIE)



Australian Bat Lyssavirus (ABLV)

On 17th May 2013 the first case of Australian Bat Lyssavirus (ABLV) in a horse was reported. The affected horse was from the Southern Downs in Queensland and had been euthanased on 11th May. It is believed that the horse was infected through being scratched or bitten by a bat. Another horse with similar clinical signs was euthanased at the same premises five days earlier.

Equine Herpes Virus-1 (EHV-1)

A number of cases of EHV-1 were reported throughout Europe and the USA in the second quarter.

Several cases of EHV-1 abortion were reported in Ireland in April 2013. Two cases were reported in Munster, two in Leinster and a single case occurred in Ulster. Diagnoses were made post mortem by histopathology and virus isolation.

Four cases of EHV-1 abortion and a single outbreak of EHV-1 respiratory disease were reported in France during the second quarter. Cases of abortion were reported in Calvados, Eure, Manche and Orne and diagnoses were made by PCR of fetal organs in all cases. The outbreak of EHV-1 respiratory disease occurred in Manche and affected four horses.

Two cases of EHV-1 abortion were reported in Belgium. Cases occurred in Brussels and Courtrai in April 2013. Both of the affected mares were unvaccinated and positive diagnoses were made by PCR of fetal organs.

Two outbreaks of EHV-1 neurological disease were reported in the United States of America. One outbreak involved a 22-year-old mare in New Jersey that had to be euthanased. The second occurred at a harness track in New York State where four horses had been affected.

An outbreak of EHV-1 neurological disease was also reported in Tervo, Finland where two horses have been affected and a single case was reported in Vaud, Switzerland where one horse was affected.

Eastern Equine Encephalomyelitis (EEE)

One hundred cases of EEE have been confirmed in the USA in 2013 up to the last week of August. Fourteen states have reported cases with most cases being reported in South Carolina (30 cases) and Florida (27 cases).

On 31st May 2013 two cases of EEE were reported in Guayas, Ecuador. The first case occurred on 25th February 2013 in which a female Peruvian Paso horse was affected. The second case occurred on 2nd March 2013 involving a Spanish foal.

A single outbreak of EEE was reported in Darien, Panama. Four horses were affected, two of which died.

Hendra Virus

On 13th June 2013 a case of Hendra virus infection was confirmed at a property west of Macksville on the New South Wales mid-northern coast. The affected horse was a mare that had died on 5th June 2013. This is the first case of Hendra virus infection in New South Wales since 2011.



Defra/ Animal Health and Veterinary Laboratories Agency (AHVLA) business

On the issue of horse passports, the European Commission have brought forward initial proposals announced in their '5 Point Plan' for strengthening the effectiveness of the horse passport regime in protecting the human food chain. The main requirements foreseen are for Member States to operate a central database and new controls to ensure better security of passports and microchips. Discussions will begin in September 2013. The Commission also plans to bring forward proposals in the autumn to amend the zootechnics legislation and through that will transfer responsibility for issuing passports entirely to the Competent Authority (Defra).

Focus article

In this report we are pleased to include a focus article written by Deidre Carson from Rossdale and Partners in Newmarket. The article provides an overview of the clinical management of equine piroplasmiasis and the risk to the United Kingdom.

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/DEFRA_AHT_BEVA_equine_reports.html or via the BEVA and Defra websites at <http://www.beva.org.uk/news-and-events/news> and <http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/vetsurveillance/reports/listing.htm>, respectively.

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/cms-display/equine_disease_registration.html.



Virology Disease Report for the Second Quarter of 2013

The results of virological testing for April to June 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 second quarter of 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<u>Serological Tests</u>			
EVA ELISA	2211	26 [#]	6
EVA VN	464	42 [#]	3
AHVLA EVA VN	467	37	1
EHV-1/-4 CF test	802	25 [*]	2
EHV-3 VN test	3	3	1
ERV-A/-B CF test	196	6 [*]	1
Influenza HI test	220	3 [*]	1
EIA (Coggins)	640	0	3
EIA ELISA	1219	0	6
AHVLA EIA (Coggins)	812	0	1
AHVLA WNV (PRNT)	0	0 ^{**}	1
<u>Virus Detection</u>			
EHV-1/-4 PCR	92	8	2
EHV-2/-5 PCR	26	14	1
Influenza NP ELISA	1	0	2
Influenza Directigen	33	0	2
Influenza PCR	50	1	1
Influenza VI in eggs	0	0	1
AHVLA Influenza PCR	59	0	1
EHV VI	189	6	1
EVA VI/PCR	9	0	1
AHVLA EVA VI/PCR	16	1	1
Rotavirus	137	29	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 Second Quarter of 2013

Equine Influenza

Two outbreaks of equine influenza (EI) were confirmed and reported in the second quarter.

On 21st June 2013 an outbreak of EI was confirmed in Northumberland. The affected horse was a non-vaccinated two-year-old Cob filly that showed clinical signs of bilateral mucopurulent nasal discharge and a cough. A positive diagnosis was made by qPCR on a nasopharyngeal swab. Six other horses were also affected.

The second outbreak of EI was confirmed on 28th June 2013 in Hertfordshire. The affected horse was a one month old cob filly that showed clinical signs of depression, pyrexia and pneumonia. A positive diagnosis was made by qPCR on a nasopharyngeal swab. The filly's dam, a three-year-old cob assumed to be non-vaccinated, showed clinical signs of pyrexia and a cough. Six other horses have shown similar clinical signs at the premises in Essex from which the mare and foal originated.

Equine Herpes Virus-1 abortion

Two outbreaks of abortion were confirmed in the second quarter.

On 8th April 2013 an outbreak of EHV-1 abortion was confirmed in North Yorkshire where seven unvaccinated non-Thoroughbred mares were affected.

The second outbreak was confirmed on 24th April 2013 in an unvaccinated Thoroughbred-cross mare in Surrey. In all cases diagnoses were made by PCR of fetal tissues and control measures were undertaken in accordance with the HBLB Codes of Practice.

Equine Herpes Virus-1 respiratory and presumed neurological disease

One outbreak of EHV-1 respiratory disease and presumed neurological disease was confirmed by the Animal Health Trust in this quarter.

On 27th June 2013 EHV-1 respiratory disease was confirmed in a three-month-old Thoroughbred foal in Warwickshire. The foal showed clinical signs of mild pyrexia, nasal discharge and ocular discharge and a positive diagnosis was made by PCR of a nasopharyngeal swab. A presumptive diagnosis of EHV-1 neurological disease was made in the foal's dam, a seven-year-old Thoroughbred mare that showed clinical signs of ataxia and nasal and ocular discharge. The mare became recumbent and was euthanased. The affected premise consists of six other adult horses in addition to the foal including four Thoroughbred mares.

Equine Herpes Virus-1 neurological disease

One outbreak of EHV-1 neurological disease was confirmed by the Animal Health Trust at a stud in Devon.

On 28th June 2013 two Thoroughbred mares were both found recumbent and were later euthanased. Positive diagnoses of EHV-1 infection were made on 2nd July 2013 in both mares by qPCR on nasopharyngeal swabs. The following day two further Thoroughbred mares developed clinical signs of ataxia. There are approximately 180 in-contact horses on the premises. The outbreak is linked to the presumptive neurological EHV-1 outbreak reported on 27th June 2013 in Warwickshire, as the affected Thoroughbred mare in that outbreak had moved from the Devon premises 16 days previously.



Bacteriology Disease Report for the Second Quarter of 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 April to June 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 second quarter 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
CEMO (HBLB)	6057	0	29
CEMO (AHVLA)	970	0	1
<i>Klebsiella pneumoniae</i> [#]	6263 ¹	5	29
<i>Pseudomonas aeruginosa</i>	6342 ¹	28	29
Strangles*culture	1511	184	20
Strangles PCR	1151	181	4
Strangles ELISA	1808	281 ²	4
Salmonellosis	331	14	17
MRSA	594	2	12
<i>Clostridium perfringens</i>	183	10	8
<i>Clostridium difficile</i> (toxin by ELISA or immunochromatography)	191	16	10
<i>Borrelia</i> (by ELISA)	50	11	1
<i>Rhodococcus equi</i> culture/PCR	630	9	7
<i>Lawsonia intracellularis</i> **culture/PCR	36	0	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 monophasic Typhimurium variants *S.* 4,12:i:- DT193 (3 samples), *S.* 4,5,12:i:- DT193 (2), *S.* 4,5,12:i:- U323 (2) and *S.* Typhimurium U302 (1). These types are most common in pigs, cattle and people. 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 Second Quarter of 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 second quarter of 2013

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
Grass Sickness	39	23	5
Hepatic toxicoses	28	5	3
Atypical myopathy	0	0	2*

*Includes contributing laboratories with no cases submitted

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

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<u>Endoparasites</u>			
Ascarids	4478	121	19
Cyathostomes	2331	485	13
Dictyocaulus	1113	23	11
Strongyles	5297	1748	22
Tapeworms (ELISA based testing)	340	39	8
Tapeworms (Faecal exam)	2752	22	12
Trichostrongylus	165	7	1
Strongyloides	3149	541	19
<i>Oxyuris equi</i>	851	4	5
Fasciola	151	18	3
Coccidia	653	19	5
Cryptosporidia	21	0	1
AHVLA <i>Theileria equi</i> (CFT)*	19	1	1
AHVLA <i>Theileria equi</i> (IFAT)**	193	11	1
AHVLA <i>Theileria equi</i> (cELISA)***	114	6	1
AHVLA <i>Babesia caballi</i> (CFT)*	19	0	1
AHVLA <i>Babesia caballi</i> (IFAT)**	194	12	1
AHVLA <i>Babesia caballi</i> (cELISA)***	114	6	1
<u>Ectoparasites</u>			
Mites	18	0	1
Lice	389	1	17
Ringworm	516	69	22
Dermatophilus	300	31	17
Candida	50	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



Focus Article: Equine Piroplasmosis

Deidre Carson BVSc(Sydney), MRCVS, RosSDales and Partners, Newmarket, UK

Equine Piroplasmosis (EP) is a potentially fatal tick-borne protozoal infection which affects horses, zebras, mules and donkeys.

EP is endemic in many tropical and subtropical regions such as parts of Africa, Middle East, Asia, Cuba, Central and South America, the Caribbean and southern Europe and it was recently found in parts of southern USA and in a localised outbreak in Ireland in 2009. Countries which are believed to be free of the disease include Australia, New Zealand, Canada and Japan.

One of the most significant characteristics of the diseases is that a carrier state exists providing an unsuspected source of infection for other animals. This is the main reason that it poses such a potential threat to us in the UK. With increasing international movement of horses, the chance of importing a carrier is also increasing. Zebras act as an important reservoir of infection for horses in Africa.

How does the disease develop?

There are two organisms which can cause EP: *Babesia caballi* and *Theileria equi*. They have different life cycles but both infect red blood cells where they multiply and cause rupture of the cells, resulting in anaemia and inflammation. They can be present individually or can both be present and causing disease at the same time. Disease caused by *T. equi* tends to be more severe with a higher mortality rate.

Transmission of the disease between horses is (normally) via a tick vector. At least a dozen known species of tick can spread the infection but fortunately, very few of these are present in the UK. The ticks ingest the parasites when they feed on an infected horse and then pass the parasites when they feed on another horse. *Babesia* spp can be found in various organs in the tick vector and can be transmitted transovarially from egg to larva. *Theileria* spp are only found in the salivary glands of the vector ticks. The immature protozoa only mature and become infective after the tick has been attached for several days so prompt removal of ticks can help reduce the risk of infection.

It is important to note that transmission of infection can also occur through blood transfusions and via contaminated equipment and instruments, such as needles, AI instruments, stomach tubes and dental equipment etc. A significant outbreak of EP in the USA in 2009 was traced to blood transfusions and the re-use of needles. The infection can also pass from mare to foal via the placenta prior to birth.

Clinical signs

The incubation period (time between infection and appearance of clinical signs) is 12-19 days for *T. equi* and 10-30 for *B. caballi* so it can be up to a month after infection before clinical signs appear and any trace of the infecting tick might be long gone.

The clinical signs vary and are pretty vague as they are similar to those seen in other conditions that cause anaemia and jaundice (yellowing of the membranes). In per-acute cases, the animal might be found dead. The acute form is the most common one seen.



Clinical signs may include fever, loss of appetite, depression, laboured or rapid respiration and congested membranes. You might see obvious anaemia, jaundice, haematuria (dark urine), sweating, haemorrhages in the mouth and inside the vulva, a swollen abdomen and general weakness. Other cases will show less severe signs which might be intermittent such as limb swelling and mild colic with dry droppings. Long term, chronic cases may show only mild signs such as reduced appetite, weight loss and exercise intolerance. Abortions may occur and foals which are infected before birth might die at or soon after birth. Other foals might be born asymptomatic carriers.

Carriers might remain subclinical for life or might develop clinical disease after stress (such as strenuous exercise or travel) or suppression of their immune system, such as can be seen in young foals, old animals and those ill with other disease conditions.

Diagnosis

Because the clinical signs are pretty non-specific the differential diagnosis might include purpura haemorrhagica, hepatitis, neoplasia and poisonings (all of which occur in the UK) plus other exotic diseases such as Equine Infectious Anaemia, Surra, Dourine and African Horse Sickness.

In some acute cases, it might be possible to demonstrate the protozoa in blood films affected horses as seen in Fig. 1 but this is difficult and is an unreliable test. The tests of choice are serological. The preferred tests in the UK are the IFAT and the cELISA as both of these are prescribed tests for international trade. The CFT is used in some countries but the result can be affected by many extraneous factors and so some carrier animals will give a negative result. It also can't be used for at least one month after infection. More recent PCR tests can be used on blood samples to try to detect parasite DNA. These are very sensitive and may be used in conjunction with serological tests or alone.

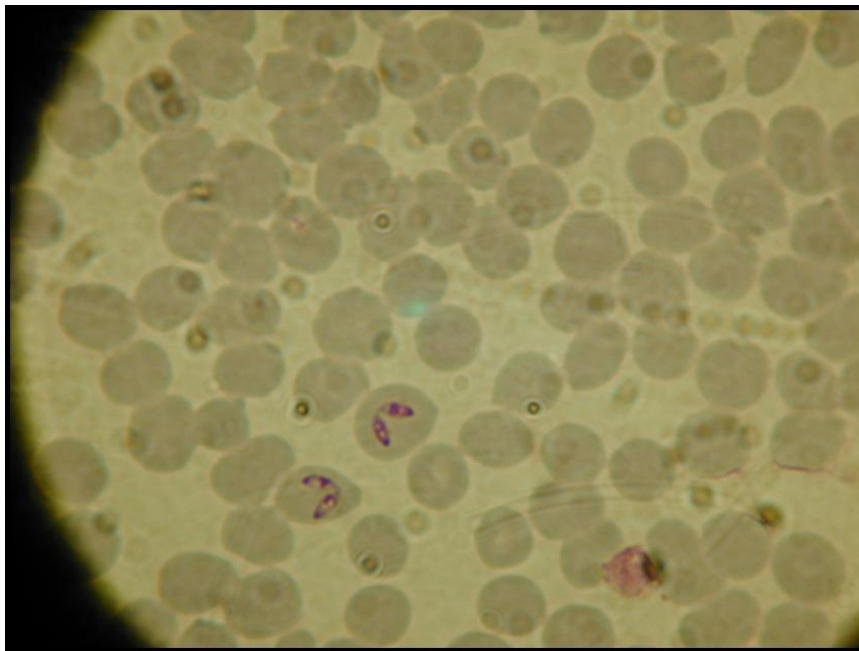


Fig. 1: *B. caballi* identified on a blood film



Treatment

Horses which recover usually become chronic carriers for life although many will eventually become clear of *B. caballi*. Horses rarely become clear of *T. equi*, even after treatment. In countries where the disease is endemic a significant proportion of the affected animals are working equids. In such countries infected horses may show little or no signs of disease and so can perform their job at a certain level without becoming ill.

Where finances allow and it is desirable to try to eradicate the parasite from the horse, treatment may be attempted using imidocarb or another babesicide. These drugs are not readily available in the UK but can be imported under special licence. Note that treatment might suppress clinical signs but rarely clears the infection. Severe side effects are common. Even if the parasite can be cleared from the blood, the horse will remain positive on testing for antibody, probably for life. The major significance of this seropositive status is that it significantly reduces the opportunities for sale and export of the affected horse.

Prevention and Control

In endemic countries, control is difficult due to the existence of carrier animals. However tick control with acariscides and by remove any found on the horse can be helpful. Suspected cases must be quarantined immediately. Don't introduce new animals from an endemic or suspect area/country unless tested first. Ensure adequate hygiene when handling blood products and contaminated instruments. Don't re-use needles, sterilise all equipment after each use and don't use blood products from animals which have not been tested for Piroplasmosis.

Risk to the UK

There is little or no regulation and no OIE guidelines regarding the pre-importation treatment of horses for ticks and the Tripartite agreement allows free movement of 'registered equidae' between the UK, France and Republic of Ireland. As a result there is real risk of importation of infected ticks on horses and we know that there are species of tick here already which are capable of actin as vectors for EP. We should be recommending treatment for ticks as a pre-importation requirement for horses and a negative EP blood test if the horse has come from an area where the disease is known to occur.



Grass sickness surveillance data (<http://www.equinegrasssickness.co.uk/>)

A total of 63 equine grass sickness (EGS) cases have been reported for the second quarter (April - June 2013), of which 22 cases were confirmed by histopathology and were reported by submitting laboratories but no case details were available.

Of the 41 cases reported via the EGS surveillance, where location was reported, 59% (n=19/32) occurred in England and 41% (n=13/32) occurred in Scotland. Location was not reported for nine cases. The median age of affected horses was 5 years (range 2 – 35 years). A greater proportion of cases occurred in males: 56% of cases were males (n=1 colt; 22 geldings), 39% were mares/fillies (n=16), and sex was not recorded for two cases.

The majority of affected horses (66%, n=27) were purebreds, predominantly Welsh breeds (n=6) and Cob breeds (n=6) and 29% (n=12) were crossbreeds. Breed was not reported for the remaining two cases.

The clinical subform of EGS was reported for 36 cases, of which 41.7% were reported to have acute EGS (n=15), 27.8% were reported to have subacute EGS (n=10) and 30.6% of cases were diagnosed with chronic EGS (n=11). Of the 11 horses with chronic EGS, four were reported to have survived to date (36%).

Diagnostic information was provided for 56% of cases (n=23); of these, 48% (n=12) were diagnosed based on clinical signs alone. Nine horses underwent surgery and diagnostic confirmation obtained by biopsy examination in the majority of cases (78%, n=7); two horses that underwent surgery also had a subsequent post-mortem examination. In total, post-mortem examination was performed in five cases, of which four had biopsy samples obtained for confirmation of diagnosis by histopathology.

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 <http://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 Second Quarter of 2013

East Anglia

A total of 44 cases were examined including 17 aborted fetuses and one placenta.

Of the aborted fetuses examined, Equine Herpes Virus-1 (EHV-1) was isolated in seven cases, there were five cases of umbilical cord torsion, two cases of placentitis and single cases of early placental detachment and hypoxia. The cause of death could not be determined in one case.

One placenta from an aborted fetus was examined however the cause of death could not be determined.

Six neonatal deaths were investigated, comprising single cases of interstitial pneumonia, perforated gastro-duodenal ulcers, and a respiratory infection of unknown cause. One case that had died following delivery by caesarean section suffered placental malformation and the cause of death could not be determined in the final two cases.

Two neurological cases were reported. Examination of the first case revealed a congenital cervical vertebral malformation with spinal cord compression. Encephalitis was identified in the second case, the necrotising and non-suppurative nature of the lesions in the brainstem was suggestive of a parasitic aetiology.

Ten horses were examined following gastrointestinal disease. Four cases of grass sickness were reported, two cases suffered post-foaling complications that resulted in a colonic torsion and a caecal rupture, and a parasite-related intestinal infarction was identified in two further cases. Single cases of gastric and caecal rupture were also reported.

Three cases of neoplasia were reported in which diagnoses of bronchogenic carcinoma, a renal tumour and lymphoma were confirmed.

One musculoskeletal case was examined in which an ischial shaft fracture was identified.

One welfare case was examined. A 22 year old Irish Draught horse was euthanased after suffering cachexia and being unable to stand. Post-mortem examination was inconclusive.

Five other cases were reported. Two cases of post-partum haemorrhage were reported along with three cases of trauma in which pneumothorax and a subdural haematoma were identified. The final trauma case involved a horse that had been startled by a bee sting. The horse reared, fell, suffered haemorrhage from the ears and nostrils and was euthanased.

Home Counties

Twenty cases were examined in this quarter.

Three neonatal deaths were examined this quarter. Post-mortem examination revealed neonatal encephalopathy in one neonate due to cerebral hypoxia and neonatal maladjustment syndrome, haemorrhagic enteritis in the second and neonatal isoerythrolysis was identified in the final case.



Ten cases of gastrointestinal disease were reported. Two cases of gastric rupture were identified along with single cases of acute necrotising colitis, lymphoplasmacytic enteropathy, large colon torsion, equine grass sickness, peritonitis, colonic displacement and rupture, colonic impaction and ganglioneuritis.

One case of neoplasia was examined in which alimentary lymphoma was confirmed.

One musculoskeletal case was reported in which a fractured skull was identified.

Five welfare cases were investigated. Three cases suffered cyathostomiasis and emaciation. Diagnoses of emaciation and emaciation with ragwort intoxication were made in the final two cases.

South West

Eighteen cases were examined in this quarter.

One neonatal case was examined which had been found still born and had an umbilical cord torsion.

Four gastrointestinal cases were reported. Post-mortem examination revealed single cases of grass sickness, colitis with haemolytic syndrome, alimentary lymphoma and a rectal tear.

Thirteen welfare cases were examined in this quarter, two of which suffered cyathostomiasis. The results for the eleven remaining cases are yet to be confirmed.

Northern England

One case was examined in this quarter.

One case of neoplasia was reported and leukaemia was later confirmed.

West Midlands

One case was reported in this quarter.

One gastrointestinal case was examined and grass sickness was confirmed by histology.

Scotland

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

Four gastrointestinal cases were reported. Single cases of grass sickness, strangulating lipoma and gastric ulceration were identified however a definitive diagnosis could not be established in the final case.

One respiratory case was examined in which a *S. equi* infection was identified.



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

A single musculoskeletal case was reported in which myopathy was suspected. The horse had previously undergone surgery following a wire wound.

Northern Ireland

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

Two neonatal stillborn foals were examined however in both cases a cause of death could not be determined.

One gastrointestinal case was reported. The five year old mare had died after showing severe clinical signs of colic and post mortem examination revealed a large section of thickened and oedematous colon wall with haemorrhagic contents.

Two cases of hepatic disease were examined. The first case comprised a pony that was euthanased due to a suspected toxicity. Post-mortem and histological examination revealed a chronic active hepatic necrosis with fibrosis. The second case involved a mare that had been found dead and a clinical history suggested weed killer toxicity. Histological examination of the liver showed chronic and on-going active hepatic cirrhosis suggestive of chronic pyrrolizidine toxicity.

Two welfare cases were reported in this quarter. The first involved a foal that had been found dead and the second comprised a mare that had been euthanased after being found in poor condition. Post-mortem examinations revealed cyathostomiasis in both animals.



ACKNOWLEDGEMENTS

**This report was compiled by the Animal Health Trust.
We are extremely grateful to the following laboratories for contributing data for this report.**

Abbey Veterinary Services
Agri-Food and Biosciences Institute of Northern Ireland
Animal Health Trust Diagnostic Laboratory
Animal Health Veterinary Laboratory Agency
Arundel Equine Hospital
Avonvale Veterinary Practice
Axiom Veterinary Laboratory
Beaufort Cottage Laboratories
Biobest Laboratories
Bushy and Willesley (B & W) Equine Group Ltd.
Capital Diagnostics, Scottish Agricultural College
Carmichael Torrance Diagnostic Services
Chine House Veterinary Hospital
Dechra Laboratories
Endell Veterinary Group Equine Hospital
Hampden Veterinary Hospital
Hampton Veterinary Group Laboratory
IDEXX Laboratories
JSC Equine Laboratory
Lab Services Ltd
Liphook Equine Hospital
Minster Equine Veterinary Clinic
Newmarket Equine Hospital
O'Gorman Slater & Main Veterinary Surgery
Oakham Veterinary Hospital
The Donkey Sanctuary
The Royal Veterinary College
Three Counties Equine Hospital
Torrance Diamond Diagnostic Services (TDDS)
University of Bristol, Department of Pathology
University of Edinburgh
University of Glasgow
Valley Equine Hospital

All laboratories contributing to this report operate Quality Assurance schemes, which differ between laboratories. However, all contagious equine metritis (CEM) testing reported was accredited by the Horserace Betting Levy Board (HBLB) with the exception of AHVLA, which acts as the reference laboratory.

The Animal Health Trust (AHT) is extremely grateful to the Horserace Betting Levy Board (HBLB), Racehorse Owners Association (ROA) and Thoroughbred Breeders' Association (TBA) for their continued combined contribution to the AHT's Equine Infectious Disease Service.



**We would welcome feedback including contributions on focus articles
and / or case reports to the following address:**

Animal Health Trust
Lanwades Park, Kentford, Newmarket, Suffolk, CB8 7UU
Telephone: 01638 750659
Fax: 01638 555659
E-mail: equinesurveillance@aht.org.uk
Website: www.aht.org.uk