



# DEFRA / AHT / BEVA EQUINE QUARTERLY DISEASE SURVEILLANCE REPORT Volume 8, No.1: January – March 2012



## Highlights in this issue:

- Contagious Equine Metritis (CEM) in Europe
- Equine Herpes Virus 1 (EHV-1) in the United Kingdom
- Focus article: Equine Rabies

### 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 2012 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**

#### **Contagious Equine Metritis (CEM)**

CEM was confirmed by the Department of the Environment, Food and Rural Affairs (Defra) on 28 March 2012, following submission of a voluntary pre-breeding clitoral swab sample taken from an asymptomatic 15-year-old Thoroughbred mare in Gloucestershire, England and detection by PCR and bacterial culture of *Taylorella equigenitalis*. According to the owner, this retired National Hunt race mare had not previously been covered by a Thoroughbred stallion and had never been pregnant, but had been unsuccessfully inseminated with semen from a non-Thoroughbred stallion last season.

This CEM positive mare has undergone treatment and has been confirmed negative after post-treatment testing. A single in-contact mare on the premises, and two mares and a gelding identified as tracings as a result of the epidemiological inquiry, were restricted and have tested negative. Restrictions on these premises have been lifted.

As a result of further tracings from the epidemiological inquiry, CEM was detected on a second, separate infected premises, in one other non-Thoroughbred mare, and a non-Thoroughbred stallion.

The second infected premises will remain under restrictions, while the epidemiological investigation is on-going and until all in-contact equidae on the premises have been tested for CEM and proved negative. The CEM positive stallion and mare on the second infected premises are undergoing treatment and post-treatment testing.

A total of eight in-contact equidae were traced to the south east, north and south west of England. As of 31 May 2012, five of these horses have been shown to be negative for CEM on PCR and culture; three horses in the south east remain under restrictions, awaiting sampling and testing to be completed

#### **Equine Herpes Virus-1(EHV-1)**

There have been several outbreaks of EHV-1 abortion and neurological disease between 1<sup>st</sup> January and 31<sup>st</sup> May 2012 in the UK.

On 24th April 2012 a case of EHV-1 neurological disease was confirmed in a six-year-old Thoroughbred gelding on a multi-purpose premises in Wiltshire, England. Diagnosis was made on the basis of PCR on a nasopharyngeal swab collected from the clinically typically affected horse and serological evidence of recent viral activity among adjacent horses in



the absence of recent vaccination. No further clinical cases have been reported to date and the premises has been isolated with further testing being carried out.

In this issue we report on seven outbreaks of EHV-1 abortion that have occurred in Leicestershire, Lincolnshire, Powys, Suffolk and Warwickshire. As of 28<sup>th</sup> March no further outbreaks of EHV-1 abortion have been reported.

### Equine Influenza (EI)

Equine influenza continues to be of importance within the United Kingdom. The only outbreak to date this year was confirmed on 27<sup>th</sup> April 2012 by the Animal Health Trust. The affected horse was a 3 year old Thoroughbred from Lancashire. A diagnosis was made via PCR of a nasopharyngeal swab and subsequent seroconversion. The affected group consists of three horses that have shown clinical signs of intermittent nasal discharge and a cough. There are approximately thirty in-contact horses.

This outbreak has been reported by the new 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 by a text message to the practitioner's mobile phone. If you are an equine veterinary practitioner and would like to sign up for this scheme, please register at the following website <http://www.merial.co.uk>. This service has also been offered to the members of the National Trainers Federation (NTF).

### **Increasing Equine Influenza Surveillance**

The Animal Health Trust's OIE reference laboratory for equine influenza is urging veterinary surgeons to take full advantage of their on-going EI surveillance initiatives, following reports of EI outbreaks in France over the past few weeks of which further details can be found on page 6. Equine vets are invited to send in samples from horses in which EI might be suspected. We would like to highlight the risk of equine influenza virus circulation in vaccinated animals, which may present with very mild or non-specific signs. In particular, please look out for signs in yards where animals have returned from competition events, both here in the UK and from mainland Europe. Heightened surveillance is particularly important at this time, particularly with respect to the forthcoming Olympic equestrian events.

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 send a message to: [equiflunet@aht.org.uk](mailto:equiflunet@aht.org.uk) or follow the link to [www.equiflunet.org.uk](http://www.equiflunet.org.uk) for more information on equine influenza.

### **International disease occurrence**

#### Atypical Myopathy

Between the beginning of Spring 2012 and 2<sup>nd</sup> May 2012 the Atypical Myopathy Alert Group (AMAG) coordinated through the University of Liege, Belgium reported 17 cases that had displayed clinical signs consistent with the disease. These cases were reported in France (14 cases), Great-Britain (2 cases), New Zealand (1 case).



### Contagious Equine Metritis

Outbreaks of CEM have occurred in France and Ireland in addition to the UK throughout the first quarter.

In France two outbreaks of CEM have been reported in Orne. The first outbreak was reported on 8<sup>th</sup> February 2012 and involved a 15 year old male French Trotter. The diagnosis was confirmed on 3<sup>rd</sup> February 2012 by bacteriology conducted on a semen sample. The second outbreak was reported on 16<sup>th</sup> February. The affected horse was a 12 year old male French Trotter used for breeding and the diagnosis was confirmed positive by bacteriology.

An outbreak of CEM was reported on 30<sup>th</sup> April 2012 in Co. Galway, Ireland. The last case of the disease occurred in 1982. The affected horse was a non-thoroughbred stallion and routine pre-breeding testing resulted in a positive diagnosis. The stallion did not show any clinical signs of the disease and had tested negative in 2009, 2010 and 2011. An epidemiological investigation is being conducted, focusing on the infected premises and recently inseminated mares.

### Equine Herpes Virus-1 (Abortion)

Fourteen outbreaks of Equine Herpes Virus-1 (EHV-1) abortion have been reported in France during the first quarter.

On 6<sup>th</sup> January 2012 an outbreak occurred in Ille et Vilaine and the affected horse was a Thoroughbred breeding mare. Two outbreaks, reported on 26<sup>th</sup> January 2012 and 7<sup>th</sup> March, occurred in Mayenne. One mare was affected in each outbreak. Three horses were affected in an outbreak in Savoie reported on 15<sup>th</sup> February and two further outbreaks occurred on 16<sup>th</sup> March in Aude each involving an Akhal-Teke broodmare and on 23<sup>rd</sup> March in Côte d'Armor involving a French Trotter broodmare. In each of the cases a positive diagnosis was made by PCR on fetal tissues.

Five outbreaks have occurred in Calvados, France. Outbreaks reported on 26<sup>th</sup> and 31<sup>st</sup> January 2012, each involved only one mare and both cases were confirmed by PCR of fetal organs. The remaining three outbreaks were reported in February 2012 and also involved only one mare in each case. One case was confirmed on 3<sup>rd</sup> February by PCR of placental tissue. The second case was reported on 6<sup>th</sup> February which involved an 18 year old French Saddlebred mare that had aborted twins. A diagnosis was made on PCR of fetal tissues from both fetuses. The final case was confirmed on 7<sup>th</sup> February by PCR of fetal organs. It is not known if the affected mares were vaccinated or whether the cases were epidemiologically linked.

Three outbreaks have been reported in Manche, France. The first occurred on 31<sup>st</sup> January 2012. One broodmare mare was affected and a diagnosis was made by PCR of placental tissue. The second outbreak was reported on 8<sup>th</sup> February 2012 involving a French Saddlebred mare from a breeding establishment. The case was confirmed positive by PCR of fetal tissues and both cases have been epidemiologically linked. The final outbreak occurred on a stud and was reported on 29<sup>th</sup> February 2012. The index case was an unvaccinated 12 year old French Trotter broodmare and a diagnosis was made by



positive PCR on fetal tissues. A total of three horses out of 19 were affected in the outbreak.

### Equine Influenza (EI)

Outbreaks of EI have occurred in France and South America throughout the first quarter.

On 12th January 2012 an outbreak of equine influenza was reported in Metro De Santiago, Chile. Two cases, showing clinical signs of disease, were confirmed on 9th January 2012 by PCR conducted by SAG Laboratory Lo Aguirre, the National Laboratory. Vaccination has been carried out in response to the outbreak and work is on-going to identify the serotype.

On 3rd April 2012 an outbreak of equine influenza was reported in Montevideo, Uruguay. The affected horse was a Thoroughbred from a training centre and showed clinical signs consistent with equine influenza. A positive diagnosis was made by PCR testing on 30th March 2012. It is not known if the horse had been vaccinated. One thousand horses have been affected and quarantine and movement control measures have been implemented.

Outbreaks of equine influenza has occurred in France and affected numerous premises. The first outbreak, reported on 4th May 2012 in Calvados, affected nearly all of the 150 horses residing on the premises. Some of the horses had participated in competitions at Arezzo in Italy and others at Saint-Gatien. Quarantine measures were applied at the onset of clinical signs and horse movements were suspended from the initial confirmation of equine influenza.

Three further outbreaks occurred in Calvados. A stud farm was affected on 7th May affecting 45 horses in total. With the exception of yearlings, the horses had been vaccinated at six-month intervals. Several horses from this premises had recently participated in competitions at Haras du Pin, Orne and at Saint-Gatien. On 16th May an unvaccinated mare from a farm consisting of 15 horses was also affected. The mare showed clinical signs three days after foaling and influenza virus was detected from the foal. The foal was later euthanased. Some of the horses from the farm had recently participated in competitions at Saint-Gatien and Touquet. The final outbreak in Calvados was reported on 30th May at an equestrian centre. An unvaccinated five year old horse was affected but to date an epidemiological link has not been made with the previous reported outbreaks in the area.

Further outbreaks have occurred in Northern France. On 22nd May 2012 an outbreak was reported on a premises in Oise. A sports horse mare tested positive and a number of other horses suffered clinical signs. An epidemiological link with the other confirmed outbreaks is suspected. Two outbreaks have been reported in Yvelines. On 30th May a vaccinated French Saddlebred competition horse tested positive and on 1st June 2012 twelve vaccinated horses from a riding centre tested positive. To date there has been no epidemiological link made between these cases and the cases relating to the previous influenza outbreaks in France.



## Vesicular Stomatitis (VS)

An outbreak of VS was confirmed in Otero County, New Mexico, USA. Vesicular lesions have been discovered in two horses and one has been confirmed as a case of VS virus infection (New Jersey serotype). Three other horses residing on the same premises have been unaffected. The index premises has been quarantined and epidemiological investigations have been initiated.

The last outbreak of VS occurred in the USA in June 2010.

## **Focus article**

In this report we are pleased to include a focus article written by Dr Dan. L. Horton from the Animal Health Veterinary Laboratories Agency. The article provides an overview of equine rabies and details the methods of transmission, incubation and various clinical manifestations of the disease.

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](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](http://www.aht.org.uk/equine_disease_registration.html).



## Virology Disease Report for the First Quarter of 2012

The results of virological testing for January to March 2012 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 Veterinary Laboratories Agency (VLA), Weybridge. The sample population for the VLA is different from that for the other contributing laboratories, as the VLA's tests are principally in relation to international trade (EVA and EIA). VLA now provides testing for WNV as part of clinical work up of neurological cases on specific request and provided the local DVM has been informed.

**Table 1: Diagnostic virology sample throughput and positive results for the first quarter 2012**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b><u>Serological Tests</u></b>			
EVA ELISA	5823	105 <sup>#</sup>	5
EVA VN	2243	101 <sup>#</sup>	4
VLA EVA VN	731	22	1
EHV-1/-4 CF test	314	32 <sup>*</sup>	3
EHV-3 VN test	0	0	1
ERV-A/B CF test	121	15 <sup>*</sup>	1
Influenza HI test	137	0 <sup>*</sup>	2
EIA (Coggins)	2190	0	6
EIA ELISA	4060	0	4
VLA EIA (Coggins)	910	0	1
VLA WNV (PRNT)	5	1	1
<b><u>Virus Detection</u></b>			
EHV-1/-4 PCR	50	11	2
EHV-2/-5 PCR	14	6	1
Influenza NP ELISA <sup>**</sup>	126	0	2
Influenza Directigen	0	0	1
Influenza VI in eggs	0	0	1
EHV VI	105	7	1
EVA VI/PCR	0	0	1
VLA EVA VI/PCR	2	0	1
Rotavirus	1	0	9

ELISA = enzyme-linked immunosorbent assay, VN = virus neutralisation, VLA = 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  
<sup>#</sup> = Seropositives include vaccinated stallions, <sup>\*</sup> = Diagnosed positive on basis of seroconversion between paired sera  
<sup>\*\*</sup> = The relatively high number of NP ELISA tests performed is largely due to requirements for international equine movement. All horses travelling to Australia must now have 2 NP ELISA tests performed prior to travel. The figures above include tests performed for international trade purposes.



## **Virological Diagnoses for the First Quarter of 2012**

### **Equine Herpes Virus-1**

Seven confirmed cases of EHV-1 abortion were confirmed and reported in this quarter.

#### **Outbreak Descriptions**

An outbreak was confirmed in Lincolnshire on 16th January 2012 in a vaccinated thoroughbred mare. The affected mare did not show any clinical signs prior to abortion and there were fifteen in-contact mares on the premises. Two outbreaks were reported in Suffolk. The first occurred on 23<sup>rd</sup> January 2012 and involved a single thoroughbred mare. The second outbreak, confirmed on 20<sup>th</sup> February, involved a vaccinated thoroughbred mare. Three other mares resided on the same premises. In all of the reported cases a diagnosis was made by PCR on fetal tissues and placenta and control measures were undertaken in accordance with the HBLB Codes of Practice.

A single case of EHV-1 abortion was confirmed on 8th February 2012 in a Warmblood mare in Powys, Wales. Two previous abortions on the same premises within the preceding four weeks were reported but had not been investigated. Diagnosis was made by immunostaining for EHV on fixed fetal tissues.

An outbreak of EHV-1 abortion was confirmed on 9th February 2012 in a non-vaccinated Thoroughbred mare in Leicestershire on a mixed breed stud farm. Diagnosis was made by histopathology and immunohistochemistry on submitted fixed fetal tissues. The following day a second abortion occurred, but was not investigated. The two aborted mares were among a group of 13 mares and were placed in isolation. On 15<sup>th</sup> March 2012 another outbreak of EHV-1 abortion occurred in a non-vaccinated sports horse in Leicestershire. A diagnosis was made by PCR of tissues recovered from the foal that had died shortly after foaling. This case is epidemiologically linked to the case reported on 9th February 2012.

Finally a case of EHV-1 abortion was confirmed on 28th March 2012. The affected mare was an 11 year old, partially vaccinated Thoroughbred from Warwickshire. A diagnosis was made by PCR of tissues recovered from a still born foal. The mare had no history of abortion however abortions had occurred on the stud at which she was boarding.



## Focus Article: Equine Rabies

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Rabies is a fatal zoonotic disease, with a virtually global distribution and wide host range. It is a disease of great significance since the incubation period can vary from several days to many years. It is a disease that should not be overlooked in imported animals, particularly in those showing neurological signs.

Rabies virus is maintained in endemic cycles in a variety of mammals worldwide (including dogs, racoons, foxes, skunks) and in both terrestrial animals and bats in the Americas. Several countries such as the UK, Australia and much of Europe are free from disease. Cases in horses are rare, usually sporadic consequences of 'spill-over' transmission from a reservoir species. The risk therefore depends upon the occurrence of infected reservoir species. Of the 6,155 rabies cases reported in United States in 2010, only 37 (0.6%) were in horses or donkeys, which is comparable to the average of 38 cases per year over the preceding three years. The elimination of canine rabies, and rise in wildlife rabies in North America suggest that rabid wildlife pose the largest threat to horses in North America. In South America vampire bats play a significant role, infecting horses when taking a blood meal. In many other parts of the world including much of Africa and Asia, dog rabies remains endemic and therefore rabid dogs represent a source of infection to horses and other equines. In addition to rabies virus, there are ten other virus species in the genus lyssavirus. All are capable of causing rabies, and most have been isolated from bats. Only rabies virus has been associated with deaths in horses, but the repeated discovery of other lyssavirus species reinforces the need for characterisation of virus strains.

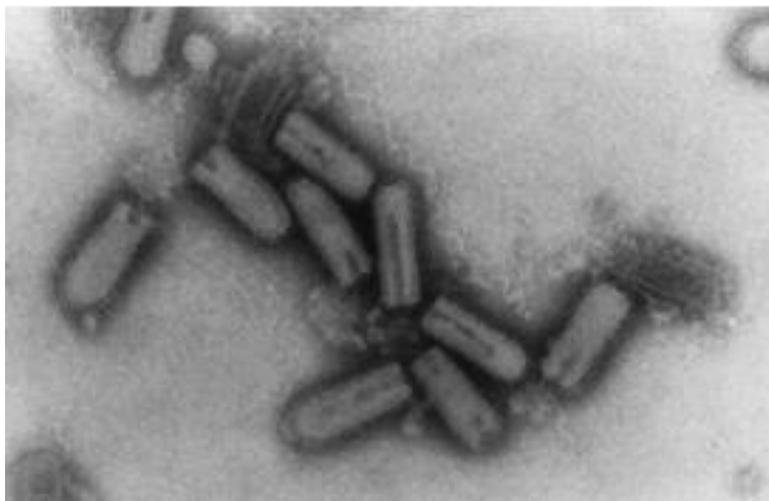


Fig.1: Electron micrograph depicting the rabies virus

### Virus Transmission

Rabies virus is most commonly transmitted in saliva via bites or scratches, but these events are often not witnessed in horses, and the wounds heal by the time clinical signs develop. In over 20 confirmed naturally occurring equine rabies cases in North America,



none had visible bite wounds. Virus gains entry to the neurons and moves up the peripheral nerves into the central nervous system (CNS), is then distributed widely within the CNS and subsequently disseminates to multiple organs. Histopathological changes within the CNS include varying degrees of inflammation and classic cytoplasmic inclusion bodies known as Negri bodies in neurons. The degree of inflammation varies depending on the viral isolate, host and individual.

### **Incubation Period**

The incubation period is commonly one to two months but can vary from one week to several years. A specific incubation period for equine rabies not been well documented, as exposure to the virus is rarely witnessed. One experimental study in horses showed a mean incubation period of 12.3 days but the dose and route of inoculation, site and severity of the wound, and pathogenicity of the viral strain will all have an effect on the incubation period. Clinical signs in horses do not appear to adhere strictly to the classic 'furious' or 'dumb' manifestations of disease. Instead there is a wide spectrum of signs, which overlap and it is not infrequent for horses to present with choke. The most common presenting signs in a case series of naturally infected North American horses were ataxia & paresis (43%), lameness (29%), recumbency (14%), pharyngeal paralysis (10%) and colic (10%). In 21 experimentally infected horses the most common signs were muzzle tremors (81%), lethargy (71%), ataxia (71%) and pharyngeal paralysis (71%). Death typically occurs within 7 days from the onset of clinical signs.

The clinical signs of rabies in the horse include: pyrexia, muzzle tremors, lethargy, ataxia and paresis, hyperaesthesia, pharyngeal paresis/paralysis, lameness, recumbency, tail, perineal and anal sphincter hypotonia, aggression, tenesmus, biting, convulsions, colic, head tilt, circling, hypersalivation and abnormal vocalisation.

### **Diagnosis**

The wide range of clinical signs and frequent absence of relevant history make clinical diagnosis difficult. Laboratory confirmation ante mortem is also challenging as CSF may be normal. Most cases in horses are only confirmed post mortem using CNS samples, primarily brainstem, cerebellum, hippocampus and medulla. Direct fluorescent antibody testing (FAT) of fixed brain smears will detect viral antigen, and confirmation of diagnosis can be made by inoculation of tissue culture, inoculation of mice or molecular tests. The most recent developments of real-time quantitative polymerase chain reaction (real-time PCR) not only allow rapid diagnosis but also differentiation between lyssavirus species.

### **Prevention**

Despite current interest in experimental therapy for humans, there are still no effective treatments and therefore control depends crucially on prevention of the disease developing. Immediate thorough wound cleaning is the most simple and effective preventive measure after potential exposure but that is rarely applicable for horses if a bite is not witnessed. Vaccination with modern tissue culture based vaccines is safe and effective for preventing disease. Although rabies in horses is rare, vaccination is generally recommended where possible in endemic countries. The difficulties in clinical diagnosis, combined with close contact between people and horses make vaccination also justified to reduce the risk to humans. This is particularly important for animals with exposure to large numbers of people, such as those in petting zoos or riding stables.



Although vaccinating horses will prevent disease, it has been shown repeatedly that the best way to reduce spill-over infections in humans and domestic animals is to control or eliminate disease in the reservoir species. Rabies is a notifiable disease in the UK and any clinical suspicion should be reported to the local Animal Health Office.

Article based on: Horton, D.L. and Fooks, A.R (2009). Equine Rabies. In: Infectious Diseases of the Horse. Eds T.S. Mair and R.E Hutchinson, Equine Veterinary Education, Equine Veterinary Journal Ltd, Ely, Cambridge.p128-131, with permission of the editors.



## Bacteriology Disease Report for the First Quarter 2012

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.

### VLA CEMO Data for the period January to March 2012

We are again pleased to include data relating to CEM testing from the Veterinary Laboratories Agency (VLA), in this quarterly report. The sample population for the VLA is different from that for the other contributing laboratories as the VLA tests are principally in relation to international trade and/or outbreak investigations. The CEM positive sample reported earlier in this report was first identified by an approved laboratory and later confirmed by AHVLA in the second quarter.

### 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 2012**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
CEMO (HBLB)	10022	1	29
CEMO (VLA)	496	0	1
<i>Klebsiella pneumoniae</i> <sup>#</sup>	10075 <sup>1</sup>	10	29
<i>Pseudomonas aeruginosa</i>	10079 <sup>1</sup>	29	29
Strangles*culture	2645	233	17
Strangles PCR	1363	200	3
Strangles ELISA	192	49	1
Salmonellosis	686	81	20
MRSA	362	4	9
<i>Clostridium perfringens</i>	185	4	6
<i>Clostridium difficile</i> (toxin by ELISA or immunochromatography)	189	7	8
Borrelia (by ELISA)	32	5	1
<i>Rhodococcus equi</i>	792	4	6
<i>Lawsonia intracellularis</i> **	52	6	2

CEMO = contagious equine metritis organism (*Taylorella equigenitalis*); HBLB = HBLB accredited laboratories; # =capsule type 1,2,5; VLA = VLA reference laboratory; \**Streptococcus equi* subsp. *equi*; MRSA = methicillin resistant *Staphylococcus aureus*. \*\* *Lawsonia intracellularis* identified using PCR applied to faeces; <sup>1</sup> reproductive tract samples only

### VLA Salmonella results

From the strains typed by the VLA the serotypes reported were Salmonella strain with the antigenic formula 1,4,5,12:i (5 samples), *S. Anatum* (14), *S. Enteritidis* 11 (2), *S. Enteritidis* RDNC (1), *S. Nagoya* (1), *S. Newport* (1), *S. Stourbridge* (1), *S. Typhimurium* (14).

The following definition of an incident applies: "An incident comprises the first isolation and all subsequent isolations of the same serovar or serovar and phage/definitive type combination of a particular *Salmonella* from an animal, group of animals or their environment on a single premises, within a defined time period (usually 30 days)."

For more information from Defra about *Salmonella* in the UK, please visit

[http://vla.defra.gov.uk/reports/rep\\_salm\\_rep07.htm](http://vla.defra.gov.uk/reports/rep_salm_rep07.htm).



## **Toxic and Parasitic Disease Report for the First Quarter 2012**

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 2012**

	<b>Number of Samples Tested</b>	<b>Number Positive</b>	<b>Number of Contributing Laboratories</b>
Grass Sickness	7	4	3
Hepatic toxicoses	22	5	2
Atypical myopathy	2	1	3
Tetanus	0	0	0

**Table 4: Diagnostic parasitology sample throughput and positive results for the first quarter 2012**

	<b>Number of Samples Tested</b>	<b>Number Positive</b>	<b>Number of Contributing Laboratories</b>
<b><u>Endoparasites</u></b>			
Ascarids	2523	28	18
Cyathostomes	2128	444	17
Dictyocaulus	807	61	13
Strongyles	3984	1313	24
Tapeworms (ELISA based testing)	36	30	6
Tapeworms (Faecal exam)	1860	9	10
Trichostrongylus	28	1	1
Strongyloides	2430	313	21
<i>Oxyuris equi</i>	502	5	6
Fasciola	148	15	4
Coccidia	14	0	2
Cryptosporidia	1	0	1
VLA <i>Theileria equi</i> (CFT)*	55	1	1
VLA <i>Theileria equi</i> (IFAT)**	285	9	1
VLA <i>Theileria equi</i> (cELISA)***	143	1	1
VLA <i>Babesia caballi</i> (CFT)*	55	1	1
VLA <i>Babesia caballi</i> (IFAT)**	285	5	1
VLA <i>Babesia caballi</i> (cELISA)***	143	4	1
<b><u>Ectoparasites</u></b>			
Mites	30	1	2
Lice	433	5	17
Ringworm	553	70	20
Dermatophilus	368	12	14
Candida	38	2	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) have been reported to the surveillance scheme during the first quarter of 2012 (January – March). Of these, two cases were reported by diagnostic laboratories and the remaining case was owner-reported. Complete case information was only available for the owner-reported case, which occurred in Scotland, affecting a Thoroughbred cross colt that presented with the acute clinical sub-type. Laparotomy and post mortem examination were reportedly performed in this case; however confirmation of diagnosis by histopathology was not obtained. The median age of affected horses was 4 years (range 8 months – 6 years).

**Request to Vets and Horse Owners**

Since the nationwide EGS surveillance scheme was established in spring 2008, details of over 1600 cases of EGS occurring in Great Britain between 2000 and the present day have been collated in a strictly confidential database. Unfortunately, the number of cases reported to the scheme each year is decreasing. Data gathered by this scheme facilitates the investigation of changes in geographic distribution and incidence of the disease, and will be an invaluable resource in the development of proposed vaccination field trials of a *Clostridium botulinum* type C toxoid vaccine. 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](mailto:jo.ireland@aht.org.uk)). Further information is also available at [www.equinegrasssickness.co.uk](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 First Quarter 2012**

### **East Anglia**

*A total of 68 cases were examined including 43 aborted fetuses and 3 neonatal foals.*

Of the aborted fetuses examined this quarter, umbilical cord torsion was identified as the precipitating cause in 10 of 43 cases. There were 2 cases of placental separation, 13 cases of placentitis, eight cases of placental insufficiency and five cases of EHV-1 infection. One fetus suffered exsanguination, two foetuses aborted due to hydrops and two of the examined cases were inconclusive.

Of the three neonatal foals examined, one suffered bacterial pneumonia, the second, bacterial septicaemia and the final case suffered asphyxiation during foaling.

One neurological case was reported this quarter. The horse had been euthanased following hyperaesthesia and recumbency and post mortem examination was inconclusive.

Thirteen horses were examined following gastrointestinal disease where the cause of death in eight of the cases was identified to be chronic parasitism, of which two horses suffered concurrent salmonellosis. One case comprised a horse that was euthanased following neurological deficits and post mortem examination revealed primary intestinal hyperammonaemia. One case of sand impaction of the large colon was identified along with single cases of gastric rupture, hypovolaemic shock as a result of gastrointestinal haemorrhage and endotoxaemic shock due to bacterial infection of the intestine.

Three respiratory cases were reported throughout the quarter. One case comprised of the death of a mare due to acute respiratory failure, a second case involved cranial mediastinal abscesses and a single case of pleuropneumonia was reported.

One cardiovascular case was reported in which a foal was affected by Tetralogy of Fallot.

Three musculoskeletal cases were reported of which fractures were identified in two horses and the third case was euthanased due to post-anaesthetic myopathy following orthopaedic surgery.

One other case was reported this quarter in which a horse's head was presented for examination with a gunshot wound. Post-mortem examination revealed the gun shot to be the cause of death.

### **Home Counties**

*Eighteen cases were examined in this quarter.*

One aborted foetus was examined this quarter and found to have extensive chorionic mineralisation leading to ischaemia and abortion.

One neonate was reported to have been euthanased and post mortem examination revealed a lack of colostrum intake, meconium retention and subcutaneous trauma.



Two neurological cases were reported in this quarter, both of which has been euthanased.. Post-mortem examination of the first case revealed a cholesteatoma and the second, hepatic encephalopathy.

Seven cases of gastrointestinal disease were reported all of which all had been euthanased. Three horses suffered colonic wall necrosis. Two horses showed clinical signs of colic of which one had an ileal stricture. A definitive diagnosis was not achieved in the second horse. Two further cases were examined in which a gastric rupture was identified in the first horse and equine dysautonomia in the second.

One cardiac case was examined in which post mortem examination identified cardiac mineralisation.

Two musculoskeletal cases were reported in this quarter. One horse suffered a pelvic fracture which led to an arterial laceration and death due to exsanguination, and a diagnosis of colic and atypical myopathy was made in the second horse.

One welfare case was examined. The horse had been found dead and post mortem examination revealed inadequate ingesta and taxus bacata intoxication.

Three other cases were reported this quarter. One horse was traumatised, hypovolaemic shock and DIC, a second horse was euthanased and bone marrow aplasia was identified and in the final case adenoma of the pars intermedia was reported but the cause of death is unknown.

### **South West**

*Ten cases were examined in this quarter.*

One aborted fetus was examined in which a definitive diagnosis could not be made.

Five musculoskeletal cases were reported in this quarter. Fusion and remodelling of the lumbar vertebrae was identified in the first case and cervical stenotic myelopathy identified in the second. Three further cases suffered fractures. One horse suffered a metatarsal fracture, a second suffered fractures of the tibia and fibula and in the final case, fractures of the tibia, fibula and skull.

A case of hepatic disease was reported in a donkey. Post mortem examination revealed severe hepatic atrophy and concurrent nephropathy.

Three welfare cases were examined. Gastrointestinal parasitism was identified in two horses, one of which also suffered verminous thromboarteritis of the cranial mesenteric artery. Examination of the third case revealed pediculosis, pulmonary abscesses and gastrointestinal parasitism with jejunal intussusception.

### **Northern England**

*Three cases were examined in this quarter.*

One gastrointestinal case was examined and identified a gastric rupture.



Two cases of hepatic disease were examined, the first of which identified hepatic lipidosis and the second, hepatic fibrosis with colitis.

### **West Midlands**

*Two cases were examined in this quarter.*

One gastrointestinal case was reported and a diagnosis of chronic eosinophilic and lymphocytic enteritis was made.

A respiratory case was examined and revealed pneumonia with intranuclear inclusion body formation in examined tissue. Infection with EHV-5 is suspected and cholangitis was also identified.

### **Scotland**

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

One aborted fetus was examined which showed evidence of mycosis.

Three gastrointestinal cases were examined this quarter. A strangulating lipoma was identified in two cases and an inguinal hernia in the third.

One respiratory case was examined in which EHV-5 was suspected.

Two cases of neoplasia were reported of which one horse suffered an oral squamous cell carcinoma and the second, lymphoma.

A case of hepatic disease was reported of which suspected ragwort toxicity was the cause of death.

One other case was examined in which a horse suffered trauma.

### **Northern Ireland**

*Four post-mortem examinations were carried out in this quarter.*

Two aborted fetuses were examined this quarter. One fetus suffered hydrocephalus however the cause of death was unknown. The fetus tested negative for equine herpes virus and *Leptospira*. The second fetus examined suffered an umbilical cord torsion.

Two other cases were examined. A three-year old female miniature pony with an unknown history was examined and found to have a necrotizing typhlitis with vasculitis and thromboses. *Listeria monocytogenes* was cultured from lung and liver tissue. The second case was a 12-year old gelding, which died following a week of a dull demeanour and anorexia. Post mortem examination revealed a large intra-abdominal haemorrhage, the cause of which was undetermined.



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**We would welcome feedback including contributions on focus articles  
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