



# DEFRA / AHT / BEVA EQUINE QUARTERLY DISEASE SURVEILLANCE REPORT Volume 7, No.4: October – December 2011



## Highlights in this issue:

- **Equine Infectious Anaemia in Europe**
- **Equine Influenza in the United Kingdom**
- **Focus article: Schmallenberg Virus**

### 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 fourth quarterly equine disease surveillance report for 2011 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 Herpes Virus-1 (EHV-1)**

Between 1<sup>st</sup> January and 22<sup>nd</sup> February 2012, four outbreaks of Equine Herpes Virus-1 (EHV-1) abortion have been reported and confirmed by the Animal Health Trust.

The first outbreak was confirmed on 16<sup>th</sup> January 2012 in a vaccinated thoroughbred mare in Lincolnshire. Diagnosis was made by positive PCR on foetal tissues and placenta. The affected mare did not show any clinical signs prior to abortion. Fifteen in-contact mares are being closely monitored and control measures are being undertaken in accordance with the HBLB Codes of Practice.

The second outbreak was confirmed on 23<sup>rd</sup> January 2012 in a vaccinated Thoroughbred mare in Suffolk. Diagnosis was made by positive PCR on foetal tissues and placenta. The affected mare did not show any clinical signs of disease prior to abortion. Four in-contact mares are being closely monitored and control measures are being undertaken in accordance with the HBLB Codes of Practice.

On 1<sup>st</sup> February 2012 an outbreak was confirmed in an unvaccinated Warmblood mare in Buckinghamshire. Diagnosis was made by positive PCR on foetal tissues. There are five in-contact mares involved in the outbreak and control measures are being undertaken in accordance with the HBLB Codes of Practice.

The final outbreak was confirmed on 20<sup>th</sup> February 2012 in a vaccinated Thoroughbred mare in Suffolk. Diagnosis was made by positive PCR on fetal tissues. There are three in-contact mares involved with the outbreak and control measures are being undertaken in accordance with the HBLB Codes of Practice.

#### **Equine Influenza (EI)**

Equine influenza continues to be of importance within the United Kingdom. In this issue we report on five outbreaks that have occurred in East Sussex, Devon, East Renfrewshire, Berkshire and Cheshire. The index cases in each outbreak involved unvaccinated horses. As of 1<sup>st</sup> February 2012, no further outbreaks of EI have been reported.

These outbreaks have 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). 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 Autumn 2011 and 9<sup>th</sup> February 2012, Europe and North America have seen an increase in the number of clinical cases of atypical myopathy. The Atypical Myopathy Alert Group (AMAG) coordinated through the University of Liege, Belgium reported 193 cases that had displayed clinical signs consistent with the disease. These cases were reported in Belgium (16 cases), Spain (30 cases) France (41 cases), Germany (57 cases), Great-Britain (35 cases), Switzerland (7 cases), Austria (3 cases), USA (3 cases) and Canada (1 case).

### **Equine Herpes Virus-1 (Neurological disease)**

Numerous outbreaks of Equine Herpes Virus-1 (EHV-1) neurological disease have been reported between 1<sup>st</sup> October 2011 and 27<sup>th</sup> January 2012.

On 25<sup>th</sup> January 2012, the *World Organisation for Animal Health (OIE)* reported an outbreak of EHV-1 in Tel Aviv, Israel. The outbreak resulted in the death of two horses, sixteen positive cases and sixty susceptible horses. Affected horses have shown clinical signs and confirmed positive by virus isolation and PCR. Quarantine measures have been implemented along with disinfection of the premises and movement controls.

An outbreak of EHV-1 neurological disease was reported in Canada by the Ontario Ministry of Agriculture, Food and Rural Affairs on 19<sup>th</sup> January 2012. The affected horse was from Wellington, Ontario and showed severe neurological signs. The horse tested positive for EHV-1 and was later euthanased. Biosecurity measures have been implemented to prevent disease transmission.

Eighteen cases of EHV-1 have occurred in the USA between 1<sup>st</sup> October 2011 and 27<sup>th</sup> January 2012. A single case of EHV-1 neurological disease was confirmed in a horse from Rockingham County, North Carolina. Background details of this isolated case, nature of the disease and outcome of genotypic characterisation of the strain of virus involved are not yet available. Appropriate biosecurity measures have been implemented to minimise the risk of further spread of the virus.

With respect to the outbreaks reported in California in the last issue further cases of EHV-1 have been reported. As of 27<sup>th</sup> January 2012 sixteen cases have been identified on the same premises in Orange County, California. Only the index case showed neurological signs and is recovering from the disease. The California Department of Food and Agriculture is maintaining a strict quarantine on the premises and not allowing movement horses onto or off the property. One further case was reported in Riverside, California which is not linked to the initial outbreak. The affected horse showed clinical signs consistent with EHV-1 and was euthanased. This premises is also under quarantine restrictions.



### Eastern Equine Encephalomyelitis (EEE)

The number of equine cases of EEE in the USA increased during the quarter from 41 to 65. The total number of cases recorded in each state during 2011 is as follows: Wisconsin (34), New York (12), Florida (4), Louisiana (3), Michigan (3), North Carolina (3), Mississippi, New Jersey, Pennsylvania and Vermont (1 case each).

### Equine Infectious Anaemia (EIA)

A number of outbreaks of equine infectious anaemia (EIA) have been reported throughout Europe during this quarter.

Five outbreaks were reported in Italy on 12th October 2011. The first outbreak was reported in Padova, confirmed on 26th September 2011 and involved one horse. Four further outbreaks were reported of which the most recent occurred in the Campania region and one horse was confirmed positive on 22nd September 2011. Prior to this, cases were confirmed in early 2011 in Lazio where two outbreaks confirmed in April involved three horses. A third outbreak in March comprised five horses. It is unclear as to whether any of the affected horses showed clinical signs of disease or had been euthanased. In all cases, movement restrictions were implemented and epidemiological investigations are ongoing.

Five outbreaks of EIA occurred in Romania. The initial case was confirmed in Dobroudja on 12th September 2011. Four further outbreaks were confirmed in the same region during October 2011. Twelve horses were involved and it is unclear as to whether the affected horses showed clinical signs of disease or had been euthanased. Movement restrictions were implemented in all outbreaks and epidemiological investigations are ongoing.

One outbreak of EIA was reported in Northern Hungary on 19th October 2011 which was confirmed by serology. One horse was affected and later died.

On 12th December 2011 one clinical case of EIA was reported in Thuringia, Germany. The diagnosis was confirmed by an Agar Gel Immunodiffusion (AGID) test. The horse was destroyed and control measures include control of arthropods; quarantine; movement controls inside the country; screening of contact animals and disinfection.

### Equine Influenza (EI)

Numerous outbreaks of EI have occurred in Europe and Scandinavia throughout the fourth quarter.

A total of seven outbreaks have occurred in France this quarter.

Four outbreaks occurred over two weeks during November 2011 at four different training establishments in Val-de-Marne. A total of eleven horses were affected which were all French Trotters of various ages. They showed similar clinical signs, diagnosis was confirmed by PCR and the outbreaks were epidemiologically linked.



Three further outbreaks were reported in France. One horse was affected in an outbreak in Sarth, one horse was confirmed positive in Loire Atlantique, and a third horse was confirmed positive in Orne.

Seven outbreaks involving fifty five Standardbred Trotter horses were confirmed in Sweden throughout December 2011. Four outbreaks were located near to the Boden racetrack, and three in close proximity to the Umåker racetrack. A commercial horse transporter which had transported a number of horses to the area from Stockholm was identified as a common factor to all cases.

One outbreak of EI was reported on 25<sup>th</sup> November 2011 in Lower Saxony, Germany. The affected horse was an unvaccinated Warmblood gelding and a diagnosis was confirmed by PCR of a nasal swab.

### West Nile Virus (WNV)

The fourth quarter has once again seen numerous reports of West Nile Virus. Twenty outbreaks were reported in Italy between 1<sup>st</sup> October and 31<sup>st</sup> December 2011. Ten outbreaks occurred in various regions of the mainland involving twelve horses and ten outbreaks occurred on Sardinia involving twenty three horses.

Three outbreaks of West Nile Virus have been reported in Greece during this quarter. The largest outbreak occurred in Viota in which four horses were confirmed positive. Two further outbreaks were reported in Epire and Central Greece where only one horse was affected in each outbreak.

Outbreaks were also reported in October 2011 in Andalucía, Spain where seven horses were confirmed positive; and one horse was affected in an outbreak in Hungary.

There have been a number of cases of WNV reported in the USA. Since 28<sup>th</sup> September 2011, there have been 58 new cases of the disease, bringing the national total of equine cases to 114 during 2011. The total number of cases recorded in each state as are follows: California (39), Pennsylvania (12), N Dakota (7), Arizona (6), Texas (5), Ohio (4), Florida, Georgia, Indiana, Nevada, Tennessee and Wisconsin (3 each), Connecticut, Iowa, Maryland, New Mexico, New York, Oregon (2 each), Delaware, Idaho, Kentucky, Massachusetts, Michigan, Minnesota, Mississippi, Nebraska, New Jersey, S. Dakota and Virginia (1 each).



## **Defra/ Animal Health and the Veterinary Laboratories Agency (AHVLA business**

**The Tri-partite Agreement (TPA)** - It is hoped that the operation of the TPA can be tightened to reflect the original intention of the agreement, which was to facilitate the movement of horses for international competitions/events without unduly increasing the risk of disease transmission, especially through the movement of low value horses. This is a complex issue and a submission is being prepared and will be discussed with Ministers.

**The new African Horse Sickness (AHS) regulations** - The new regulations for the control of AHS and the related disease control strategy document have been finalised and are currently awaiting regulatory clearance via the Parliamentary process.

**Animal Health Veterinary Laboratories Agency (AHVLA) AHS exercises** - The AHVLA have been holding a number of country-wide disease control exercises involving stakeholders and operational partners in order to test the various equine disease control contingency plans, especially the new AHS regulations. These have been linked to other staff training events for equine handling skills.

**Equine Species Group at AHVLA** - AHVLA are in the initial stages of considering the establishment an internal Equine Species Group to improve the co-ordination of field, policy, operational and laboratory related equine issues within Defra and AHVLA.

**Equine semen certification & TRACES** – Defra / AHVLA are working with the BEF / BEVA AI Committee to develop practical solutions to the problems associated with the movement and use of illegal uncertified equine semen imported from other EU Member States.

**The 2012 Equestrian Olympic Games** – Defra and AHVLA continue to work with LOCOG on contingency planning for notifiable disease outbreaks that would impact on the Games. Key issues have been the movement of horses into Greenwich Park, and how LOCOG and AHVLA will respond to notifiable disease suspicions. Defra and AHVLA highlight that that the imported competition horses are being moved under standard legal trade arrangements and pose a very low risk of introducing notifiable diseases; however, the impact of any case of notifiable disease (or suspicion that requires statutory restrictions to be imposed) would be enormous, so contingency planning is essential.

**The Queen's Jubilee pageant** - The disease risk for this event is again considered to be very low and the horses will be imported under standard legal trade arrangements. Defra and AHVLA are co-operating with the organisers and providing advice when requested.

**The Equine Communication Strategy** - Communication with the equine sector and equine veterinary surgeons, and the development of a communication strategy are recognised as being of great importance, and such a strategy is currently being worked on. Considerable practical assistance has been offered by World Horse Welfare and the British Equine Veterinary Association and Defra is confident that if the need arises, information can be cascaded rapidly to a large proportion of horse owners and the majority of specialist equine vets in the UK.

**The Infectious Diseases of Horses Order (IDHO) 1987** - Defra policy have sought, and received, helpful analysis and comments on the IDHO from the equine sector (through the



Equine Disease Coalition). This has been complemented by formal legal advice from the government legal service. In summary, taking into account all existing animal health legislation, plus the forthcoming AHS and revised Specified Diseases Regulations, no fundamental gaps in the existing legislation have been identified for the control of an equine notifiable disease incident or outbreak. On this basis, it has been decided that there is no justification to re-make the 1987 Order as a high priority at the present time. A report is being drafted and will be circulated to the Equine Health and Welfare Strategy group shortly.

**Updating of European Animal Health law** – There is a considerable amount of work underway in Europe to consolidate EU Animal Health law. Defra is fully engaged in this and will report as more information becomes available.

**FVO report on live equidae, semen, embryos and ova** – The report has been published and can be found at: [http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2760](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2760)

### **Focus article**

In this report we are pleased to include a focus article written by Caterina Termine from the Animal Health Trust. The article provides an overview of the current knowledge relating to Schmallenberg virus, an example of syndromic surveillance. It also includes an up to date account of cases identified in the UK and Europe, the changing nature of the disease as well as the uncertainties surrounding the situation.

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 Fourth Quarter of 2011

The results of virological testing for October to December 2011 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 fourth quarter 2011**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b><u>Serological Tests</u></b>			
EVA ELISA	1853	10 <sup>#</sup>	5
EVA VN	290	2 <sup>#</sup>	4
VLA EVA VN	750	18	1
EHV-1/-4 CF test	371	20 <sup>*</sup>	3
EHV-3 VN test	6	3	1
ERV-A/-B CF test	213	0 <sup>*</sup>	1
Influenza HI test	238	2 <sup>*</sup>	2
EIA (Coggins)	164	0	6
EIA ELISA	724	0	4
VLA EIA (Coggins)	1302	0	1
VLA WNV (PRNT)	2	0	1
<b><u>Virus Detection</u></b>			
EHV-1/-4 PCR	108	1	2
EHV-2/-5 PCR	32	14	1
Influenza NP ELISA**	192	7	2
Influenza Directigen	227	0	1
Influenza VI in eggs	7	5	1
EHV VI	123	7	1
EVA VI/PCR	0	0	1
VLA EVA VI/PCR	5	0	1
Rotavirus	9	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  
# = Seropositives include vaccinated stallions, \* = Diagnosed positive on basis of seroconversion between paired sera  
\*\* = 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 Fourth Quarter of 2011**

### **Equine Influenza**

Five outbreaks of equine influenza (EI) were reported in this quarter and confirmed by the Animal Health Trust.

#### **Outbreak descriptions**

On 14th October 2011 equine influenza was confirmed in a horse in East Sussex. Diagnosis was made on the basis of a positive result on nucleoprotein antigen ELISA on a nasopharyngeal swab taken from an unvaccinated four-year-old gelding with signs of harsh cough, mucoid nasal discharge and mild malaise. The affected horse had been imported from Ireland approximately one week previously and had travelled to the same premises with one other horse that was also showing clinical signs consistent with influenza virus infection. The two clinically affected new horses were isolated and all the other horses on the premises which were fully vaccinated were monitored for any clinical signs.

On 27th October 2011 equine influenza was confirmed in a horse in Devon. The diagnosis was made on the basis of a positive result via ELISA on a nasopharyngeal swab. The affected premises consisted of number of horses that had been showing clinical signs of coughing, nasal discharge and malaise.

Equine influenza was confirmed in two horses in East Renfrewshire, Scotland on 1st November 2011. A diagnosis was made on the basis of positive results via ELISA on nasopharyngeal swabs. The affected premises consists of two horses that had been showing clinical signs of coughing, nasal discharge and lethargy. One horse was a three year old stallion used competitively and the second horse was a four year old gelding which had recently been imported. Further investigations are being carried out regarding the source of the outbreak.

An outbreak of equine influenza occurred in Berkshire on 23rd November 2011. Two horses were affected and diagnoses were made on the basis of seroconversions to H3N8 influenza virus in a haemagglutination inhibition (HI) test. Both horses were unvaccinated, used for hunting and showed clinical signs of bilateral purulent nasal discharge, pyrexia, dull, inappetent and a hacking cough. The source of the infection was thought to be from a horse that temporarily visited the yard on which the affected horses were kept.

A case of equine influenza was confirmed in Cheshire on 22nd December 2011. The affected horse was an un-vaccinated three-year-old Thoroughbred gelding who showed clinical signs of pyrexia, cough, inappetance and nasal discharge. The horse started to show clinical signs on arriving at a new yard three days previously. The diagnosis was made on the basis of a positive nucleoprotein antigen ELISA result for a nasopharyngeal swab. A foal on the same yard also had similar clinical signs.

Isolates of the H3N8 equine influenza viruses recovered have been characterised by sequencing of their haemagglutinin (HA) genes as belonging to clade 2 of the Florida lineage of the American lineage.



## **Equine Herpes Virus-1**

Two outbreaks of equine herpes virus 1 (EHV-1) were confirmed and reported in this quarter.

### Outbreak descriptions

On 18th November 2011 EHV-1 was confirmed in two horses in the West of England. Diagnosis was made on the basis of virus isolation and/or PCR on nasopharyngeal swabs and on heparinised blood samples collected from two clinically affected horses. Both of the affected horses were sports horse mares with foals at foot. One of the affected mares was euthanased after becoming recumbent and the second horse showed signs of ataxia. The premises was isolated and further testing is currently being carried out.

A single case of EHV-1 abortion was confirmed on 19th November 2011 in a vaccinated non-Thoroughbred mare from the West of England. Diagnosis was made by positive PCR on placental tissues only as foetal tissues were unable to be recovered for post mortem examination and laboratory testing. The aborting mare was one of a group of four vaccinated pregnant mares, which are now being maintained and monitored in isolation until foaling. There is no obvious link or geographical proximity between this case and the neurological EHV-1 outbreak reported on 18th November 2011, also in the West of England.



## Focus Article: Schmallenberg Virus

**Caterina Termine BSc(Hons) BVSc MRCVS Animal Health Trust, Newmarket, UK**

Schmallenberg virus (SBV) is an emerging disease of ruminants which was first documented in Northern Europe during August 2011. Outbreaks have been reported in Belgium, France, Germany, Italy, Luxembourg, the Netherlands and the first cases occurred in the UK on 23<sup>rd</sup> January 2012. It is presumed to be a predominantly vector-borne infectious disease which to date has only been identified in ruminants.

SBV is classified as an Orthobunyavirus. Although the risk of infection and transmission to horses and other species is currently unknown, Orthobunyaviruses have been reported to infect horses with clinical disease, although the reported cases occurred several decades ago, were incidental and affected only a few individuals. To date there are no data relating to the presence of horses on farms infected with SBV, the presence of pregnant mares or of horses showing unusual clinical signs, however, subclinical infection cannot be ruled out. A PCR test is available via the Animal Health Veterinary Laboratories Agency (AHVLA) for the screening of suspect cases.

### History

The first cases of SBV infection were identified in August 2011 in the Netherlands and Germany. Disease outbreaks in cattle comprising clinical signs of pyrexia, losses in production and condition, diarrhoea and inappetance were reported. Although individuals made a recovery within a few days, outbreaks lasted for up to three weeks and a morbidity of 20-70% was seen. Outbreaks continued throughout September which slowly declined and had stopped by the end of October. Since November 2011 cases of abortions and still births associated with congenital abnormalities have been reported in the Netherlands, Germany and Belgium which comprised torticollis, arthrogryposis and hydranencephaly, as seen in figure 1. Sheep have been mostly affected however cases have also occurred in cattle and goats.

Initial testing, carried out by the Friedrich Loeffler Institute (FLI) in Germany eliminated causes such as Bluetongue, Epizootic Haemorrhagic Disease, Rift Valley Fever, Bovine Viral Diarrhoea and other pestiviruses, however 9% of samples received were positive by PCR for novel viral material. Further work was carried out to isolate the virus and artificial infection of a small number of cattle resulted in viraemia and clinical signs of pyrexia and diarrhoea.



Fig. 1: A lamb affected by SBV, born dead with arthrogryposis, torticollis and deformed flexed limbs .



### **Viral Characterisation**

SBV is a previously undescribed virus and our knowledge of it is incomplete. The virus belongs to the genus *Orthobunyavirus*, serogroup Simbu. Orthobunyaviruses are commonly seen in cattle in Australia, Asia and Africa. Initially, only very mild clinical signs are noted, however over time the clinical signs become more severe and congenital abnormalities occur e.g. neurological disorders, blindness and hyperexcitability in the offspring of infected breeding stock. Since many other Orthobunyaviruses are transmitted via arthropod vectors such as midges, mosquitoes and flies, as well as vertically across placenta; it is assumed that SBV is also transmitted via such routes. Potential vectors have not yet been definitively identified, along with geographical distribution of the virus, viral origin and its transmissibility. Serological surveillance has not been carried out due to the lack of a serological test however work is currently being carried out in Germany and the Netherlands to develop a test.

### **Current situation as of February 2012**

Since August 2011 surveillance programmes have been on-going in the UK, monitoring cattle on a monthly basis for clinical signs of disease. Schemes have been initiated to raise awareness of the disease and to encourage farmers and vets to submit suspicious cases to the AHVLA/SAC for investigation. A PCR test has been obtained from the Friedrich Loeffler Institute (FLI) in Germany for use in the UK and meteorological studies identified a list of 4 days per month between July and November 2011 during which incursion of potentially infected vectors may occur. The counties at the highest risk were identified to be Sussex, Kent, Essex, Suffolk and Norfolk

The first cases of SBV were reported in the UK on 23<sup>rd</sup> January 2012 on sheep farms located in Norfolk, Suffolk and East Sussex. As of 24<sup>th</sup> February 2012, farms in the counties of Berkshire, Cornwall, East Sussex, Essex, Hampshire, Herefordshire, Hertfordshire, Isle of Wight, Kent, Norfolk, Somerset, Suffolk, Surrey, West Sussex and Wiltshire have been affected. A total of 58 animals have tested positive for the virus by PCR of viral RNA, of which 55 involved sheep and 3 involved cattle. The apparent morbidity rate in sheep is 1.37% and 0.14% in cattle. Due to the uncertainties surrounding the epidemiology of the virus, its source is unknown. Possible routes of viral introduction to the UK include the importation of apparently uninfected ruminants originating from infected areas; and windborne incursion of infected arthropod vectors, especially *Culicoides* spp. of midge. All of the affected farms are located in areas that have been previously identified as 'at-risk' for vector incursion from continental Europe.

As of 23<sup>rd</sup> February 2011, the situation in Europe comprises 668 cases that have tested positive for the virus in Germany involving cattle sheep and goats, 144 cases in Belgium, 152 in Northern France, 108 in the Netherlands and single cases in Italy and Luxembourg. These cases are geographically demonstrated in Figure 2. There are no control measures in place in any of the affected European countries.

### **Transmission risk to horses and other species**

So far SBV has only been identified in cattle, sheep, goats and bison. Transmission to other species such as horses and exotic ruminants (e.g. llamas and alpacas) is currently unknown, although if any, the risk is considered to be very small. There are still uncertainties such as whether neonates can still be viraemic, if the immune status has any effects on future parities and how long the disease has been present in Europe.



There have been no reported cases in people who have had close contact with infected livestock. There are a small number of Orthobunyaviruses that are zoonotic but a risk profile carried out at the RijksInstituut voor Volksgezondheid en Milieu (RIVM) in the Netherlands has considered the zoonotic risk to be unlikely, and the European Centre for Disease Prevention and Control has also suggested a low risk to public health. More evidence to support the proposed level of risk is expected once further epidemiological investigations have been carried out.

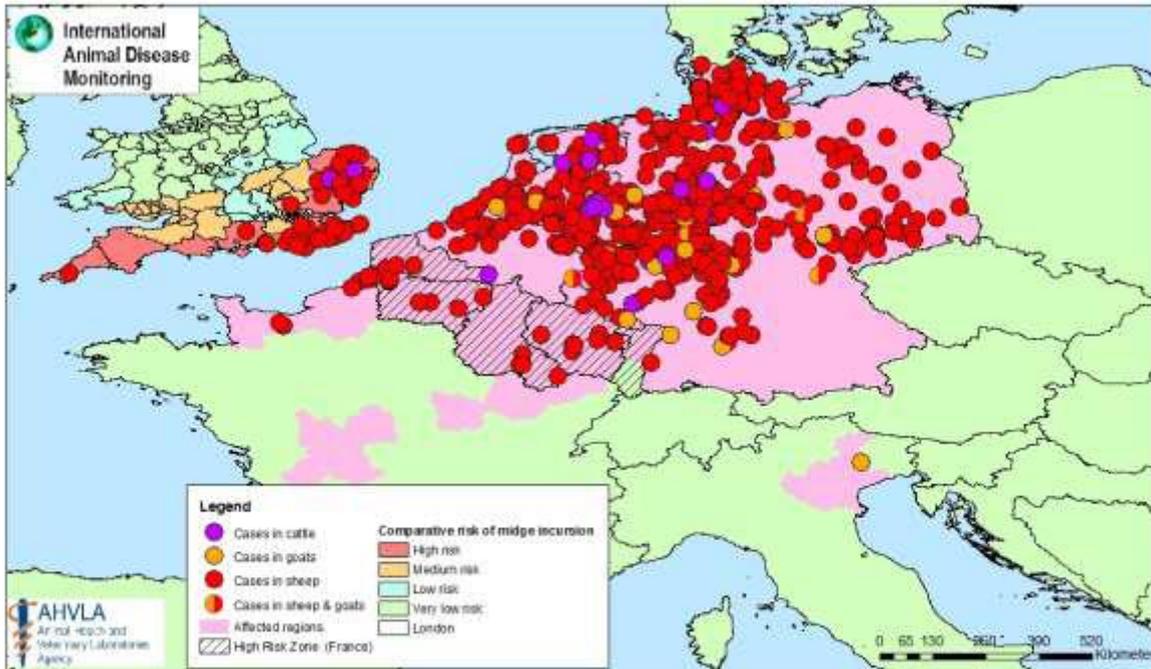


Figure 2: The distribution of outbreaks of Schmallenberg virus throughout Europe

### Suspect Cases

Although SBV is now a reportable disease in the Netherlands and in an area of high risk in France, this is not the case in the UK. SBV is not a notifiable disease and there are no movement or associated trade restrictions in place. Livestock owners and vets are encouraged to be vigilant and report any suspected cases to the AHVLA as part of their surveillance scheme. Stillbirths, deformities and neurological disease in neonates or fetuses of imported animals should be sent to the AHVLA for screening.

### References

Animal Disease Situation: Schmallenberg Virus:

[http://www.fli.bund.de/no\\_cache/de/startseite/aktuelles/tierseuchengeschehen/schmallenberg-virus.html](http://www.fli.bund.de/no_cache/de/startseite/aktuelles/tierseuchengeschehen/schmallenberg-virus.html)

OIE Alert – Schmallenberg Virus, United Kingdom:

[http://web.oie.int/wahis/public.php?page=single\\_report&pop=1&reportid=11539](http://web.oie.int/wahis/public.php?page=single_report&pop=1&reportid=11539)

ProMED Digest V2012 #75

[www.promedmail.org](http://www.promedmail.org)



'Risk Profile of Schmallenberg in people' National institute of public health and the environment, Bilthoven, The Netherlands.

<http://www.rivm.nl/dsresource?objectid=rivmp:60483&type=org&disposition=inline>

New Orthobunyavirus isolated from infected cattle and small livestock – potential implications for human health, European Centre for Disease Prevention and Control (ECDC)

[http://www.ecdc.europa.eu/en/publications/Publications/231112\\_TER\\_Risk\\_assessment\\_Schmallenberg\\_virus.pdf](http://www.ecdc.europa.eu/en/publications/Publications/231112_TER_Risk_assessment_Schmallenberg_virus.pdf)

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<http://www.defra.gov.uk/animal-diseases/a-z/schmallenberg-virus/>

Update No.5 on Schmallenberg Virus in Northern Europe

<http://www.defra.gov.uk/animal-diseases/monitoring/poa/>

Schmallenberg Virus

[http://vla.defra.gov.uk/science/sci\\_schmallenberg.htm](http://vla.defra.gov.uk/science/sci_schmallenberg.htm)



## **Bacteriology Disease Report for the Fourth Quarter 2011**

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 October to December 2011

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.

### 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 fourth quarter 2011**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b>CEMO (HBLB)</b>	1310	0	29
<b>CEMO (VLA)</b>	980	0	1
<b><i>Klebsiella pneumoniae</i><sup>#</sup></b>	1294 <sup>1</sup>	4	29
<b><i>Pseudomonas aeruginosa</i></b>	1296 <sup>1</sup>	12	29
<b>Strangles*culture</b>	2008	113	17
<b>Strangles PCR</b>	1314	119	3
<b>Strangles ELISA</b>	1425	269	1
<b>Salmonellosis</b>	550	35	20
<b>MRSA</b>	236	3	9
<b><i>Clostridium perfringens</i></b>	211	8	6
<b><i>Clostridium difficile</i> (toxin by ELISA or immunochromatography)</b>	208	6	8
<b>Borrelia (by ELISA)</b>	44	8	1
<b><i>Rhodococcus equi</i></b>	666	0	6
<b><i>Lawsonia intracellularis</i><sup>**</sup></b>	126	33	2

CEMO = contagious equine metritis organism (*Taylorella equigenitalis*); HBLB = HBLB accredited laboratories; <sup>#</sup> =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 *S.* 4,5,12:i (1 sample), *S.* Agama (1 sample), *S.* Agona (2 samples), *S.* Enteritidis (3 samples), *S.* Enteritidis 11 (1 sample), *S.* Enteritidis RDNC (2 samples), *S.* Newport (2 samples), *S.* Typhimurium 40 (2 samples), *S.* Typhimurium RDNC (1 sample).

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 Fourth Quarter 2011

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 fourth quarter 2011**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
Grass Sickness	10	5	3
Hepatic toxicoses	1	0	1
Atypical myopathy	10	5	3
Tetanus	0	0	0

**Table 4: Diagnostic parasitology sample throughput and positive results for the fourth quarter 2011**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b><u>Endoparasites</u></b>			
Ascarids	2173	50	17
Cyathostomes	1863	303	17
Dictyocaulus	724	14	13
Strongyles	3297	1026	24
Tapeworms (ELISA based testing)	128	34	6
Tapeworms (Faecal exam)	1508	16	8
Trichostrongylus	19	0	1
Strongyloides	2189	207	19
<i>Oxyuris equi</i>	320	2	5
Fasciola	103	6	3
Coccidia	51	3	3
Cryptosporidia	0	0	0
VLA <i>Theileria equi</i> (CFT)*	175	2	1
VLA <i>Theileria equi</i> (IFAT)**	741	20	1
VLA <i>Theileria equi</i> (cELISA)***	398	7	1
VLA <i>Babesia caballi</i> (CFT)*	175	8	1
VLA <i>Babesia caballi</i> (IFAT)**	741	5	1
VLA <i>Babesia caballi</i> (cELISA)***	398	2	1
<b><u>Ectoparasites</u></b>			
Mites	29	0	1
Lice	607	0	16
Ringworm	782	303	20
Dermatophilus	587	98	14
Candida	59	1	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))

A total of 78 equine grass sickness (EGS) cases have been reported during 2011. In the fourth quarter (October - December 2011), eight cases were reported, of which three occurred in England, four in Scotland and the location of one case was not reported. The median age of affected horses was 6.25 years (range 2.5 – 32 years). A greater proportion of cases occurred in females: 75% of cases were mares/fillies (n=6), one case occurred in a gelding and the remaining case was reported in a stallion.

The majority of cases were crossbreeds, with three of the affected horses (37.5%) reported as purebreds (two Welsh purebreds and one Cob).

Sixty-two percent of cases (n=5) were reported to have acute EGS, 25% (n=2) were diagnosed with chronic EGS and one horse was reported to have the subacute clinical subform. Of the two horses with chronic EGS, one case has survived to date and one was reported to have been euthanased due to the disease.

Diagnostic information was provided for the majority of cases (87.5%, n=7); of which 71% (n=5) were diagnosed based on clinical signs alone and diagnostic confirmation by biopsy examination was not obtained for any of the reported cases. One case underwent surgery and a subsequent post-mortem examination. Post-mortem examination was performed in two cases, without confirmation of diagnosis by histopathology.



## **Report on Post-mortem Examinations for the Fourth Quarter 2011**

### **East Anglia**

*A total of 81 cases were examined including 65 aborted fetuses and two placentas.*

Of the aborted fetuses examined this quarter, umbilical cord torsion was identified as the precipitating cause in 34 of 65 cases; and two of these fetuses also showed evidence of placental separation. There were 19 cases of placental separation, 8 cases of placentitis, one case of bacterial pneumonia and a single case of EHV-4. Two placentas were examined in absence of a submitted fetus following abortion. EHV-1 was isolated from one placenta and a cause of death could not be established from the second however placental mineralisation was evident.

Seven horses were examined following gastrointestinal disease where the cause of death in three cases was identified to be chronic parasitism. One case of grass sickness was identified along with single cases of small intestinal volvulus, colonic torsion and necrotising typhlocolitis.

Three cases of neoplasia have been reported. Two cases of lymphosarcoma were identified and both confirmed by histology. One horse had a nasal tumour.

One musculoskeletal case was reported in this quarter in which post-anaesthetic myopathy was confirmed following castration of a colt.

One cardiovascular case was reported in which a 10 year old gelding suffered sudden heart failure on ridden exercise.

Other reported cases include a foal with nutritional myopathy, a horse with angiomatosis and a pony with laminitis. One further case was reported in which the cause of death was uncertain although toxicity of the central nervous system was suspected.

### **Home Counties**

*Seventeen cases were examined in this quarter.*

One neurological case was reported in this quarter. The horse was euthanased with respect to a poor prognosis and on post mortem examination a neoplasm was identified of which a definitive diagnosis could not be made.

Eleven cases of gastrointestinal disease were reported. Two horses were euthanased, one due to equine dysautonomia and the second due to ulcerative colitis. In addition, single cases of pedunculated lipoma, duodenal perforation with peritonitis, pelvic flexure impaction, liver fibrosis, rectal tear and finally haemorrhagic colitis with endotoxaemia were reported. One horse was euthanased due to progressive weight loss and a definitive diagnosis could not be achieved.

Two musculoskeletal cases were reported in this quarter with one horse suffering a tibial fracture and the second, septic tendonitis.



Two welfare cases were examined. One mare had died due to starvation and on examination very poor dentition was reported. The second mare was euthanased due to extensive sarcoidosis.

One further case was examined comprising a horse with pericarditis and pneumothorax.

### **South West**

*Ten cases were examined in this quarter.*

Four aborted fetuses were examined of which one had an umbilical cord torsion, two showed evidence of placental insufficiency and in one case, a definitive diagnosis could not be made.

Two cases of gastrointestinal disease were reported. One horse, euthanased due to clinical deterioration, suffered severe acute colitis; and a donkey was identified to have colitis, typhlitis and enteritis with concurrent liver failure.

A case of hepatic disease was reported in a donkey that had shown clinical signs of anorexia.

Two welfare cases were examined. Both horses were identified to have gastrointestinal parasitism and a ruptured cranial mesenteric artery was evident on one of the horses.

One other case was reported of which a definitive diagnosis was not made. The horse was found to have abdominal haemorrhage of unknown source, ileal ischemia, multifocal mesenteric haemorrhage and hepatic atrophy.

### **Northern England**

*Six cases were examined in this quarter.*

One aborted fetus was examined and found to have an umbilical cord torsion.

Two gastrointestinal cases were reported on post mortem examination. The first suffered peritonitis and a caecal impaction was reported in the second case.

Two cases of neoplasia were reported one being a haemangiosarcoma and the second, lymphosarcoma.

One other case was examined but the post-mortem was inconclusive.

### **West Midlands**

No cases were reported this quarter.

### **Scotland**

No cases were reported this quarter.



## **Northern Ireland**

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

One aborted fetus was examined but no definitive cause of abortion was determined.

Five gastrointestinal cases were examined this quarter. A yearling with a history of unresponsive weight loss and collapse was found to have large numbers of *Oxyuris equi* free in the lumen of the large intestine. Histology of the mucosa of the large intestine revealed extensive transmural lymphohistiocytic colitis and typhlitis with an associated cyathostome infection. A yearling with a history of acute colic and collapse was found to have caecal intussusception with associated venous infarction and acute hepatic necrosis. Evidence of healed renal infarcts was also detected. An eight-year-old mare was examined revealing 360 degree volvulus of the large intestine and intussusception of the apex of the caecum with devitalisation and perforation of the caecal wall. A five-year-old pony was examined and found to have hepatic lipidosis with gastric ulceration and renal infarction. Finally, a six month-old foal was examined and found to have gastric rupture with a large quantity of ingesta free in the abdominal cavity.

Two welfare cases comprising a mare and gelding with a history of ill-thrift were reported. Examination revealed cyathostomiasis with concurrent *Salmonella* Typhimurium infection.

One hepatic case was examined this quarter. This comprised a thirteen-year-old pony with a history of nervous signs associated with the onset of jaundice. Liver histology was consistent with pyrrolizidine alkaloid (ragwort) toxicity.



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**We would welcome feedback including contributions on focus articles  
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