Highlights

- Severe reproductive disease due to PCV2-associated foetopathy
- Ampicillin-resistant *Actinobacillus pleuropneumoniae* detected
- Increase in salmonellosis due to monophasic *Salmonella* Typhimurium-like variants
- Swine dysentery diagnostic rate remains low for another quarter

These reports aim to identify emerging animal disease related threats. Their production is underpinned by a large amount of surveillance data and information compiled as part of the Defra Food and Farming Group animal disease surveillance programme. Some of these data can be viewed on the APHA website. 

VIDA diagnoses are recorded on the APHA FarmFile database and SAC Consultancy: Veterinary Services LIMS database and comply with agreed diagnostic criteria against which regular validations and audits are undertaken.

The investigational expertise and comprehensive diagnostic laboratory facilities of both APHA and SAC C VS are widely acknowledged, and unusual disease problems tend to be referred to either. However recognised conditions where there is either no diagnostic test, or for which a clinical diagnosis offers sufficient specificity to negate the need for laboratory investigation, are unlikely to be represented. The report may therefore be biased in favour of unusual incidents or those diseases that require laboratory investigation for confirmation.

APHA VICs have UKAS Accreditation and comply with ISO 17025 standard. SAC C VS have UKAS accreditation at their central diagnostic laboratory and at the Aberdeen, Edinburgh, Perth, Ayr, Dumfries, Inverness, St Boswells and Thurso Disease Surveillance Centres which comply with ISO 17025 standard.
INTRODUCTION

This report contains analysis of disease data from APHA and SAC Consulting: Veterinary Services (SAC CVS) division of the Scottish Rural College (SRUC) and partner post mortem providers from samples submitted for diagnosis to laboratories in the first quarter of 2015 compared to the equivalent quarter of previous years. It aims to identify emerging disease related threats in species covered by this project and comment on trends. The production of the report is underpinned by a large quantity of surveillance data and information compiled as part of animal disease scanning surveillance programmes in Great Britain. Further information can be found on the APHA Vet Gateway: http://ahvla.defra.gov.uk/vet-gateway/surveillance/reports.htm

Table 1: Pig Diagnostic Submissions, Quarter 1 (January to March 2015), 2011-2015

<table>
<thead>
<tr>
<th>Jan-March</th>
<th>Non Carcase Submissions</th>
<th>Carcase Submissions</th>
<th>APHA total</th>
<th>SACCVS total</th>
<th>Grand Total</th>
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<tbody>
<tr>
<td></td>
<td>APHA</td>
<td>SACCVS</td>
<td>Total</td>
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<td>SACCVS</td>
</tr>
<tr>
<td>2015</td>
<td>143</td>
<td>77</td>
<td>220</td>
<td>106</td>
<td>11</td>
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<tr>
<td>2014</td>
<td>161</td>
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<td>190</td>
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<td>141</td>
<td>108</td>
<td>249</td>
<td>106</td>
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<tr>
<td>Oct to Dec</td>
<td>149</td>
<td>56</td>
<td>205</td>
<td>75</td>
<td>18</td>
</tr>
</tbody>
</table>

Contributors of diagnostic submission data include APHA VI Centres, SAC CVS Disease Surveillance Centres and partner post mortem providers. Partner post mortem providers in prior years were the Royal Veterinary College and University of Liverpool surveillance centres. From September 2014 APHA introduced partner providers of subsidised post-mortem examinations (PMEs), together with new carcase collection sites and subsidised carcase transport arrangements, to support veterinary businesses in their diagnostic work. These include the Royal Veterinary College (RVC) serving an area of the East of England, University of Bristol serving an area of the South West England and SAC CVS St Boswells serving an area of the North East of England. These partner post mortem providers have contributed data for the first quarter (January-March) of 2015. Data from the University of Surrey and Iechyd Da will be included in future reports.

In the first quarter of 2015 (Q1, January to February), overall total diagnostic submissions were 6% lower than in the same quarter in 2014 and 13% higher that the previous quarter (Q4) in 2014. Total, carcase and non-carcase APHA submissions were similar to, or slightly greater, than those in both 2013 and 2011 for the same quarter. SACCVS carcase submissions were the lowest for this quarter compared to the same quarters in prior years 2011-14, while non-carcase submissions have been steady since 2013. Compared to the previous quarter, diagnostic submissions increased, perhaps not surprisingly as there was only a moderate autumn-winter month increase seen in Q4, 2014.

Carcase submissions represented 43% of total APHA pig submissions this quarter which is similar to previous years while carcases represented just 12% of total SACCVS submissions. The higher proportion of non-carcase submissions to SACCVS reflects, both the provision of diagnostics for pig diseases nationally by the Edinburgh SACCVS laboratory, and a low carcase throughput for the quarter. Pig carcase submissions from partner post-mortem providers contributed nearly 5% of APHA pig carcase throughput in the first quarter of 2015.

Figure 1 illustrates the proportion of diagnostic submissions in this quarter for each of the clinical syndromes. The proportion of enteric submissions (17%) has fallen compared to the previous quarter (Q4, 2014) but is similar to Q1 of 2014 (20%).
Information extracted from Pig Market Weekly publications from BPEX during the first quarter of 2015 pointed to several features which could reduce the economic success of pig farming and negatively impact on pig health by limiting investment in diagnostics or other interventions to address health issues. Finished pig prices have been lower than the same period in 2014 influenced, in part, by plentiful supplies across the EU as a result of the continued ban on imports by Russia. In the UK there was also a decline in average retail prices, coupled with a reduction in the amount of pork purchased, resulting in a sharp decline in consumer spending. Cull sow prices are considerably lower than they have been for years, which can lead to increased retention as sow replacement becomes less economically attractive, and can negatively impact the efficiency of production. The British premium from retailers is important to many British pig producers; and is already under pressure with supplies being plentiful from other EU countries.

NEW AND EMERGING DISEASES

ANALYSIS OF DIAGNOSTIC SUBMISSIONS FROM WHICH NO DIAGNOSIS WAS MADE

This section reviews VIDA data where a diagnosis was not reached (DNR)* despite the sample receiving “reasonable” testing. This allows monitoring of this class with the aim of providing information on potential new or emerging diseases or syndromes. ‘Prior years’ refers to pooled data for 2010-2014 for GB VIDA data.

* When a VIDA diagnostic code is assigned to a specific submission, the decision has to be made if it meets the stated diagnostic criteria. If the criteria are not met, it is marked as “Diagnosis Not Reached” or DNR. If it is a DNR, the next step is then to decide if this was due to limited testing or if reasonable testing had been done. If it is deemed that reasonable testing had been done, there may be reasons why a diagnosis could not be reached and this should be recorded and can include inappropriate disease phase, treatment, inconclusive results, or other reasons. Typical examples of such submissions include; chronic pleurisy or non-infectious reproductive disease. However, in some cases there is no apparent reason to explain why a diagnosis could not be reached in spite of reasonable testing and these are the submissions, if present in significant numbers and with common features, which may indicate new and emerging disease.
DNR by Presenting Sign and Syndrome

- A total of 18.5% of GB pig submissions in Q1, 2015 did not reach a diagnosis. This was not significantly increased compared to the overall DNR for the same period in prior years of 18.0%. The overall DNR rate for SACCVS was not significantly changed at 16% (4/25) compared to 14.6% for the same period in prior years. The overall DNR rate for APHA (18.9%, 25/132) was not significantly changed compared to the same period in prior years (19%).

- No individual presenting sign had an elevated DNR in Q1, 2015 for GB, APHA or SACCVS data in Q1, 2015.

- No individual syndrome had an elevated DNR in Q1, 2015 for GB, APHA or SACCVS data in Q1, 2015.

- GB submissions with a presenting sign of wasting in Q1, 2015 had a DNR of 25% (3/12) which was increased, but not significantly so, from the DNR of 13% for this period in prior years. Review of the three undiagnosed cases showed they did not share common features to suggest emerging disease.

DNR for enteric syndrome and submissions with a presenting sign of diarrhoea

- GB submissions with a presenting sign of diarrhoea in Q1, 2015 had a DNR of 29% which was increased, but not significantly so, from the DNR of 20% for this period in prior years. However, there was no parallel increase in DNR for enteric syndrome submissions in GB, APHA or SACCVS submissions. Nine undiagnosed submissions from pigs with diarrhoea to APHA and SACCVS in January to March 2015 were reviewed and there was no evidence of an emerging enteric disease. Six of the nine were faeces samples on which diagnostic testing is more limited than on carcase submissions. Three were from adult pigs, three were neonatal/preweaned and three were postweaned. One preweanede submission had rotavirus diagnosed. In the carcase submissions, one was likely clostridial disease, one postweaned case was found to be polyserositis and not a case of diarrhoea, and the third was not diagnosed despite full diagnostic testing including for porcine epidemic diarrhoea virus (PEDv). The DNR for enteric syndrome is kept under review and the importance of selecting typically affected pigs early in the course of disease and preferably untreated for sampling or submission was emphasised at a recent regional meeting with practitioners at APHA Bury St Edmunds. This advice is also included in the diagnostic guide now available on line for practitioners on this link: http://ahvla.defra.gov.uk/documents/surveillance/sub-handbook.pdf.

Analysis of undiagnosed submissions in Q1, 2015 has not revealed evidence of a new and emerging syndrome in GB pigs.

Outbreaks of Porcine Epidemic Diarrhoea in Europe

Porcine epidemic diarrhoea virus (PEDv) similar to the reportedly lower virulence strain described in the US (OH-851, INDEL strain) has now been detected in 2014 or 2015 causing diarrhoea in pigs in Germany, Italy, Netherlands, Austria, Belgium and Spain. Several PED outbreaks were described at the European Symposium for Porcine Health Management in April in Nantes, France. In order to try to establish the extent of PEDv outbreaks in the EU and obtain information on the clinical impact and PED strains involved, the European Food Safety Authority have requested information on confirmed PED cases and PED testing in EU Member States and their first report is expected in July 2015. No further outbreaks of the virulent form of PEDv in Europe have been reported since those in December 2014 in Ukraine. The threat of PED virus to GB pigs remains a priority issue and it is vital that strict biosecurity measures are implemented and maintained to keep the infection out of the country and out of pig farms and that pig keepers and their attending veterinary surgeons are aware of the clinical signs of PEDv. As part of surveillance to ensure prompt detection of a PED outbreak, BPEX is contributing funding for APHA to test diagnostic samples from outbreaks of diarrhoea in pigs for PEDv by PCR; 204 APHA diagnostic submissions from outbreaks of diarrhoea have tested PCR-negative for PEDv from June 2013 to the end of March 2015. A joint APHA-BPEX-Boehringer meeting on PEDv was held at Bury St Edmunds for pig practitioners in the region and reinforced these messages. A presentation on PEDv
“What is it and where is it” was also given to a meeting for pig producers organised by Hybu Cig Cymru (Meat Promotion Wales) in Builth Wells in April 2015. At the same meeting, Bob Stevenson provided advice on preventing introduction of PEDv and controlling its spread should it occur. Further information is available on http://www.bpex.org.uk/R-and-D/Pig-Health/pedv.aspx.

ONGOING INVESTIGATIONS

Investigations into Klebsiella pneumoniae septicaemia
As expected, no outbreaks of Klebsiella pneumoniae subsp pneumoniae (Kpp) septicaemia were diagnosed in the first three months of 2015; the disease has occurred with a strict seasonal pattern since emerging and outbreaks so far have been restricted to the months between May and September each year since the summer of 2011. A small study using faeces from pigs submitted to APHA veterinary investigation centres (VIC) for diagnostic investigation assessed different media for isolation of Kpp from 100 faeces and the most successful method is now being used to continue Kpp isolation. Kpp was isolated from 14 of the first 100 faeces. Isolates are being tested to see if any are the outbreak strain based on presence of a particular plasmid found in the outbreak sequence type 25 strains and not in non-outbreak strains. Initial testing has shown that one is likely to be the outbreak strain. Further details are being sought on the farm of origin; the isolate was from a five-week-old pig submitted to Bury St Edmunds in February 2015. This is a significant finding for several reasons; first the outbreak Kpp strain has been identified outside the time period that Kpp septicaemia outbreaks have been diagnosed; second it was isolated from a pig which showed no evidence of disease due to Kpp infection; and thirdly, its presence in the faeces demonstrates faeco-oral transmission as a potential means of spread of this strain. This work will be extended to the end of December 2015 and is taking place alongside whole genome sequencing of outbreak isolates to further investigate the Kpp strain involved with outbreaks of septicaemia.

Investigation of astrovirus involvement in type A2 congenital tremor
A report in the literature of detection of astrovirus in the brains of piglets affected with congenital tremor (CT) type A2 and also in brains of unaffected piglets (Blomström and others, 2014) and recent confirmation of cattle astrovirus cases prompted testing of porcine samples from type A2 cases CT and control material archived at APHA using a panastrovirus PCR by the Virology department at APHA Weybridge. Astrovirus nucleic acid was detected in two of five CT submissions and not in one control case. The product in the two positive samples was sequenced and was found to be different from the astrovirus detected in the 2014 publication and also different from each other, although limited information was available and only a short fragment was available for sequencing. No other virus was implicated by the previous virus discovery work undertaken and the causative agent of CT type A2 is still not known. The work also did not provide evidence to support the involvement of PCV2, a possibility raised by others. The detection of astrovirus in some samples from some CT cases is an interesting finding but is not conclusive and it is difficult to attribute significance to the finding. Further testing will be considered on future cases if control material can also be obtained.

UNUSUAL DIAGNOSES OR PRESENTATIONS

There were a number of unusual diagnoses this quarter; details of these have been included in monthly APHA or SACCVS reports; http://www.defra.gov.uk/APHA-en/publication/pig-survreports-monthly/. These will be kept under review to assess whether they justify initiation of emerging disease investigations.

Severe reproductive disease due to porcine circovirus 2-associated (PCV2) foetopathy
Following submission of several litters of mummified and stillborn piglets delivered at term to the Thirsk VIC, a diagnosis of porcine circovirus 2-associated reproductive disease was made. This is only the second confirmed GB case of PCV2-associated foetopathy, but has been reported elsewhere in the field in Europe and North America (West and others, 1999) and following experimental infection of pregnant pigs (Park and others, 2005). Disease manifested on two linked units as severe SMEDI in second-litter sows, with mummified pigs and stillbirths, not abortions. At the peak of disease, 75% of litters in a farrowing batch were affected. Histopathology revealed severe non-suppurative myocarditis in foetal
hearts with abundant PCV2 antigen detected by immunohistochemistry. PCV2 was also detected by virus microarray which did not detect any other viruses, and no other infectious agent was detected, including no PRRSv, *Leptospira*, porcine parvovirus or fungal or bacterial involvement. Both units were newly established young sow herds. The sows had been vaccinated for PCV2 as weaners and, following the diagnosis, were revaccinated and PCV2 vaccination of replacement breeding gilts prior to service has been instituted.

Figure 3: Mummified and stillborn piglets delivered at term due to PCV2-associated foetopathy

![Image of mummified and stillborn piglets](image)

This case confirms that PCV2-associated foetopathy can occasionally occur under certain management conditions and justifies surveillance for this disease being undertaken routinely in undiagnosed foetopathy cases if suitable material is submitted to APHA. The outbreak was described at a regional pig practitioner meeting at the APHA Thirsk VIC and has been presented to the Pig Veterinary Society by the practitioner involved, ensuring that pig specialists are aware of this occurrence.

Illthrift and lameness in growers associated with deficient home-mix diet

A severe osteochondropathy was diagnosed in 16-week-old growing pigs from a small indoor breeder-finisher unit submitted to Penrith VIC to investigate illthrift and lameness, some with swollen joints. The pigs were fed a commercial diet with some home-mix feed for about two months after weaning and then changed to just the home-mix including soya and home-grown barley without mineral-vitamin supplementation. It was after this feed change that problems developed. A typical case was euthanased for submission and the significant gross findings included poor body condition and polyarthropathy with
articular cartilage fissures affecting humeri, and the mandible broke with minimal manipulation. The pig had a low serum calcium concentration but bone analysis (bone ash, calcium, phosphorus and magnesium) was, surprisingly, unremarkable. Histopathology revealed severe osteochondropathy with osteoelasis, presumptive osteochonritis dissecans and growth plate arrest. The combination of lesions present were highly suggestive of metabolic bone disease which would include macro element, trace element and vitamin deficiency/imbalance. Further biochemistry revealed hypocuprosis and suboptimal selenium status in this pig and also in two others tested. The attending veterinary surgeon has advised appropriate dietary changes to address the problem and the progress of the next batch of growers will be kept under review.

Figure 2: Appearance of pig with lameness due to severe osteochondropathy (image kindly provided by the attending practitioner)

This is the third case recorded in VIDA over a six-month period relating to inadequate supplementation of home-mix diets for pigs and emphasises the need to ensure the diets of rapidly-growing pigs are suitably supplemented and provide adequate vitamins, minerals and trace elements. Guidance on investigation of outbreaks of possible bone disease is to be produced, emphasising the value of targeted biochemistry and histopathology.

CHANGES IN DISEASE PATTERNS AND RISK FACTORS

This section of the report gives information on occurrence of selected diseases. The data originate from submissions and are summarised and presented according to the diagnosis reached and assigned as a VIDA code. These charts may show the number of diagnoses (numerator) as a proportion of the number of submissions in which that diagnosis was possible (denominator), for all of GB, England & Wales or for Scotland. The bars indicate the 95% confidence limits. Note that the y-axis scale of the charts varies and therefore care must be taken when comparing individual charts.

Ampicillin-resistant *Actinobacillus pleuropneumoniae* detected

Two *Actinobacillus pleuropneumoniae* (APP) isolates from different pig farms showed *in vitro* resistance to ampicillin, confirmed to be through betalactamase production by further testing. In one of the cases, 14-week-old pigs found dead were submitted and had typical APP lung lesions, the pigs had been treated with amoxicillin with a reported partial response. Porcine reproductive and respiratory syndrome virus was also detected in these pigs and was suspected to have played a role in the severity of disease. Ampicillin (betalactam) resistance in APP has been detected by APHA previously but is not common in GB pigs with resistance being detected in 14% of submissions from which APP was recovered at APHA since November 2009. No betalactam resistant APP were found in 2014 and two of 12 tested so far in
2015 have been resistant. The finding is of concern as penicillin/penicillin derivatives are drugs of choice for the control of APP outbreaks. Improving pig flow and ventilation and avoiding other predisposing factors such as viral disease and stresses are important in controlling disease due to APP and reducing reliance on antimicrobial treatment. There is no increase in the diagnostic rate of APP in GB, in fact in Q1, 2015 the diagnostic rate (1.91%) was the lowest since Q3 2013 (0.9%) as shown in Figure 5.

Figure 5: Seasonality of APP diagnoses (data up to Q1, 2015)

Increasing beta-lactam resistance in APP is reported in other countries and, in Italy, ampicillin resistance increased from 11% of isolates in 1994 to 80% in 2009 (Vanni et al, 2012). Surveillance for antimicrobial resistance in APP is in place and ampicillin resistance will be kept under review to see if the finding reflects an increasing trend in APP isolates from diagnostic submissions. It is known that this resistance can be plasmid-encoded and transferable. Increasing resistance would mean wider use of second-line antimicrobial treatments with potential public health implications.

Monitoring penicillin sensitivity in Streptococcus suis isolates from pigs

Previous Emerging Threats reports have described the detection of a small number of clinical isolates of Streptococcus suis from pigs with raised penicillin Minimum Inhibitory Concentration (MIC) values above the human clinical breakpoint for Streptococcus pneumoniae central nervous system (CNS) infection (>0.25mg/l). These isolates were from 2009, 2010 and 2013. Periodic penicillin MIC testing of APHA clinical S. suis isolates is undertaken and a further batch of 33 from the first six months of 2014 have been tested. All had MICs less than 0.064mg/l except two isolates in which the MICs were raised but did not exceed the human clinical breakpoint for S. pneumoniae given above. One was S. suis type 9 (MIC 0.25mg/l) isolated from the lung of one of three 8-week-old pigs submitted with respiratory disease. The S. suis was secondary in clinical significance to both Glässer’s disease and salmonellosis. These pigs had been treated prior to submission with amoxicillin in-water for earlier clinical signs of greasy pig disease, and also with apramycin. The other was S. suis type 7 (MIC 0.19mg/l) isolated from lung of one of five growing pigs of mixed ages submitted to investigate increasing mortality. The pig also had swine influenza (strain H1N2) and the S. suis was likely secondary to this and significant in this pig but there were other diseases in the group, namely swine influenza, Glässer’s and salmonellosis. The pigs had been treated prior to submission with potentiated sulphonamide in-water and earlier in rear with apramycin in-feed. No clinical S. suis isolates showing penicillin resistance have been detected in 2014 so far and testing continues. Periodic testing of APHA S. suis isolates will continue to monitor for emergence of penicillin resistance. The detection of a few isolates with raised MICs highlights the need to maintain this surveillance.

Increase in salmonellosis due to monophasic Salmonella Typhimurium-like variants

There was an increase in the GB rate of diagnosis of salmonellosis in this quarter from 11.2% in Q1, 2014 to 17.8% in Q1, 2015 as shown in Figure 9. This was due to an increased rate of incidents due to monophasic Salmonella Typhimurium-like variants (4,12:i:- and 4,5,12:i:-). The diagnostic rate of incidents due to Salmonella Typhimurium (STM) remained fairly constant and of incidents due to other (non-STM, non-monophasic) Salmonella was reduced compared to Q1, 2014. Figures 10 and 11 illustrate this. This was the first quarter that the monophasic variants were responsible for a greater proportion of disease incidents than S. Typhimurium reflecting the increasing prevalence of these variants in the pig population since 2010.
Salmonella 4,12:i:- has typically been less common than the S. 4,5,12:i:- variant. However, reports of S. 4,12:i:- increased almost six-fold compared to the first quarter of 2014 while reports of S. 4,5,12:i:- and S. Typhimurium remained stable, making Salmonella 4,12:i:- the most common serovar isolated from pigs in the first three months of 2015. Phage type U288 was found in 83% of the S. Typhimurium incidents whilst DT193 was found in 71% of the Salmonella 4,12:i:- incidents and all of the Salmonella 4,5,12:i:- incidents. An abstract has been submitted to Safepork 2015 (September 2015) on APHA data on salmonellosis incidents in pigs in England and Wales which involves detailed analysis of the clinical and epidemiological features of salmonellosis diagnoses and concurrent diagnoses. In 60% of salmonellosis incidents diagnosed between 2005 and 2014 in post-mortem examinations, at least one other disease was also diagnosed indicating that salmonellosis in post-weaned pigs is often part of more complex disease and emphasising the need for comprehensive diagnostic investigations in more severe, unusual or non-responsive disease outbreaks.

Porcine reproductive and respiratory syndrome diagnostic rate stabilises
The increased rate of PRRS diagnoses in the last quarter of 2014 has not continued into the first quarter of 2015. The seasonality of diagnoses illustrated in Figure 6 shows that PRRS diagnoses peaked in Q4 2014 (12.1%) and that in Q1 2015 the diagnostic rate was lower (7.8%) and similar to Q1 2014. There were still more PRRS diagnoses in the Bury St Edmunds region than elsewhere.
Regional pig practitioner meetings were held in February and March 2015 at APHA Bury St Edmunds and Thirsk VICs respectively. These provided an opportunity to update practitioners on PRRS surveillance and virus diversity, and to discuss issues in relation to diagnosis and control.

Swine dysentery diagnostic rate remains low for another quarter
A single GB diagnosis was recorded in VIDA for Q1, 2015, this was in a 7-week-old pig from a herd of 15 sows in South West England. The *Brachyspira hyodysenteriae* isolate was tested for resistance to tiamulin by MIC under funding from the ‘Monitoring of Antimicrobial Resistance in Bacteria from Animals and their Environment Project’ within APHA and was found to be sensitive to tiamulin. The VIDA data is not a measure of prevalence of swine dysentery but often mirrors active spread of disease as new diagnoses are made and a low diagnostic rate may reflect better control of disease spread.

African Swine Fever persists in wild boar in Eastern Europe
African Swine Fever cases continues to be reported in wild boar in the affected Member States of the Eastern EU (Poland, Estonia, Latvia and Lithuania) in zones established under disease control measures. There have been no further outbreaks of ASF reported in domestic pigs since January 31st 2015 when a small backyard farm was infected in Poland. Table 2 shows the total ASF cases in Eastern EU to March 6th 2015.

Table 2: Total ASF cases in wild boar and pigs in affected Eastern EU countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Wild Boar</th>
<th>Domestic Pigs</th>
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<tbody>
<tr>
<td></td>
<td>Backyard</td>
<td>Commercial</td>
</tr>
<tr>
<td>Estonia</td>
<td>93</td>
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<tr>
<td>Latvia</td>
<td>225</td>
<td>31</td>
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<td>Lithuania</td>
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</tr>
<tr>
<td>Poland</td>
<td>60</td>
<td>3</td>
</tr>
</tbody>
</table>

In Latvia, although the disease has not spread the larger distances seen in the summer of 2014, ASF in wild boar is continuing to spread. These affected countries also remain at constant risk of introduction of ASF from Russia and Belarus. A useful March 2015 update from the European Commission on the situation in Eastern Europe is available on the following link: http://ec.europa.eu/food/animal/diseases/african_swine_fever/index_en.htm. The Commission is supporting the veterinary authorities in the affected EU countries to apply control measures and
restrictions and the Community Veterinary Emergency Team made recommendations which focus on surveillance in wild boar and domestic pigs, standstill and movement control, carcass disposal, swill feeding, biosecurity, awareness campaigns and wild boar hunting practices. **Two practical training days were provided by the Pig Expert Group and veterinary investigation officers at APHA Bury St Edmunds to APHA veterinary field staff on the recognition and differential diagnosis of swine fevers, post-mortem technique and sampling for swine fevers.**

**Pandemic H1N1 2009 influenza in India with mutations in gene coding for haemagglutinin**

A publication was highlighted by BPEX (BPEX Weekly 13 March 2015 http://www.bpex.org.uk/news%5CBPEX-weekly) showing that recent pandemic H1N1 2009 influenza strains from people in India carry new mutations in the gene coding for the haemagglutinin protein that are known to make the virus more virulent in people (Tharakaraman and Sasisekharan, 2015). There is concern that these strains are involved in an ongoing outbreak of influenza in people in India which began in December 2014. The mutations affect the influenza hemagglutinin protein which binds to glycan receptors found on the surface of host respiratory cells. The Defra-funded swine influenza surveillance project provides funding for influenza virus detection in pigs and pandemic H1N1 2009 remains one of the two predominant influenza strains detected in GB pigs. Strain H1N2 is the other predominant strain with avian-like H1N1 occasionally being detected. Live pigs cannot be imported from India to UK. **Sequencing of recent pandemic H1N1 2009 strains identified in pigs is planned to contribute to this surveillance and will provide information on the haemagglutinin gene.**

**New cluster of porcine circovirus type 2b strains in pigs in Germany**

Within one year (April 2013–April 2014) newly emerging PCV2 strains (known as PCV2b-IC) were detected on seven German pig farms on which pigs were routinely vaccinated against PCV2. (Eddicks et al, 2015). The PCV2 virus from five farms was closely related to the PCV2b-1C reference strain BDH (GenBank no. HM038017). Genotyping of PCV2 virus from outbreaks of PCV2-associated disease diagnosed by APHA has, to date, detected this strain in just one outbreak, the virus sequence had 99.8% homology with the BDH strain (HM038017). All others that have been sequenced were typical PCV2b strains. This was reported in the January to March 2014 Emerging Threats report https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/350666/pub-survrep-p0114.pdf. As the authors of the German findings indicate, although they detected the emerging strain in pigs on farms where PCV2 vaccination was practiced, they cannot be sure that vaccination had been performed correctly. **The significance of this variant of PCV2b with respect to virulence and vaccine efficacy is not yet clear but further genotyping of PCV2 involved in outbreaks diagnosed by APHA will be considered.**

**REFERENCES**


