Emerging Threats Quarterly Report

Pig diseases

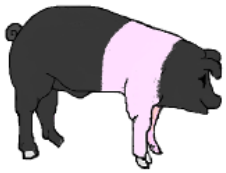
Animal & Plant Health Agency

Safeguarding public and animal health

Scanning Surveillance Programme – Detecting Emerging Threats – UK Veterinary Surveillance Strategy

SRUC

Quarterly Report 2014: July to September (Q3) **Date: November 2014**



VIDA diagnoses are recorded on the APHA FarmFile database and SAC C VS 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 Veterinary Investigation Centres and SAC Veterinary Surveillance Centres have UKAS Accreditation and comply with ISO 17025 standard.

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Highlights

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.
http://www.defra.gov.uk/APHA-en/publication/pig-survreports/

- **New developments in *Klebsiella* septicaemia outbreaks**
- **PRRS diagnoses show no summer reduction**
- **Second systemic porcine cytomegalovirus case in weaners**
- **Genotype 2 PRRSv remains a threat to GB pigs**

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editor: Susanna Williamson
tel: +44 (0) 1284 724499
fax: +44 (0) 1284 724500
email: susanna.williamson@apha.gsi.gov.uk

INTRODUCTION

This report contains analysis of disease data from APHA and SAC Consulting: Veterinary Services (SAC CVS) division of the Scottish Rural College (SRUC) from samples submitted for diagnosis to regional laboratories in the third quarter of 2014 compared to the equivalent quarter of previous years and the previous quarter in 2014. It aims to identify emerging disease related threats in pigs 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: https://www.gov.uk/government/publications/pig-disease-surveillance-reports-2014

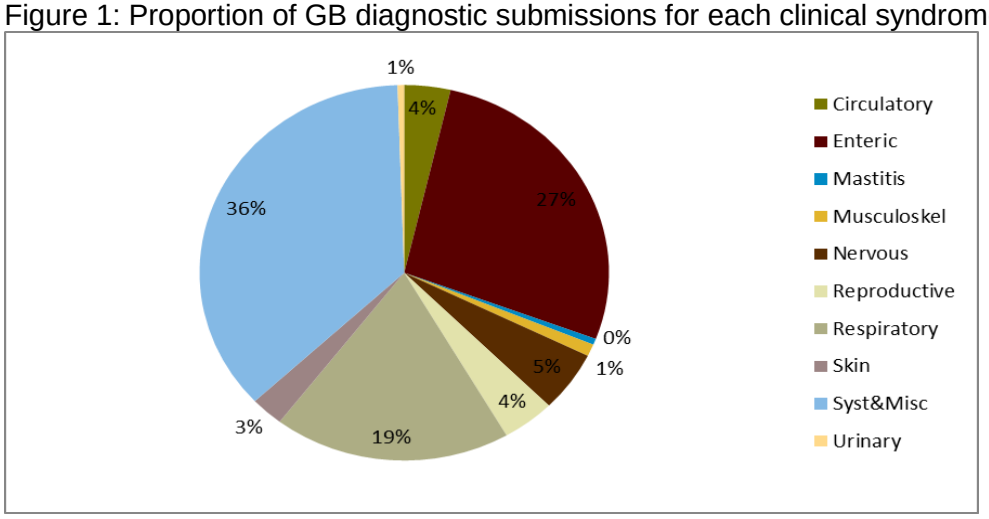
Table 1: Pig Diagnostic Submissions, Quarter 3 (July to September 2014), 2010-2014

	Non Carcase Submissions			Carcase Submissions			APHA Total	SACCVS Total	Grand Total
Jul-Sept	**APHA**	**SACCVS**	**Total**	**APHA**	**SACCVS**	**Total**			
2014	138	80	218	92	23	115	230	103	333
2013	131	58	189	64	2	66	195	60	255
2012	163	88	251	101	22	123	264	110	374
2011	149	87	236	120	30	150	269	117	386
2010	152	78	230	143	29	172	295	107	402
Apr-Jun									
2014	125	53	178	81	14	95	206	67	273

In the third quarter of 2014 (Q3, July to September), total diagnostic submissions were 31% higher than the same period in 2013 and 22% higher than the previous quarter in 2014. The increase occurred in both APHA and SACCVS submissions and in both non-carcase and carcase material. SACCVS carcase submissions have recovered following several low quarters. This is believed, in part, to reflect the effect of some change-over of veterinary practice provision. SACCVS has established a closer relationship with these practices and is receiving more submissions for post-mortem examination.

The proportion of total submissions which were carcases was 35% overall and remained similar to the previous quarter at 40% of APHA submissions and about 20% of SACCVS submissions. Figure 1 illustrates the proportion of diagnostic submissions in this quarter for each of the clinical syndromes. The proportion of enteric submissions has remained higher than respiratory (27%), possibly reflecting increased testing in response to concern about porcine epidemic diarrhoea.

Figure 1: Proportion of GB diagnostic submissions for each clinical syndrome in Q3, 2014



Although there is not a marked effect of season on diagnostic pig submissions compared to ruminants, there was a reduction in this period last year which was ascribed, in part, to genuinely better pig health due to good weather conditions. A similar effect was thought to have been affecting submissions between April and June 2014 but does not appear to have extended into this quarter of 2014 although climatic conditions were favourable. **This is likely to reflect several factors including concern about porcine epidemic diarrhoea and the fact that the expected seasonal dip in porcine reproductive and respiratory syndrome diagnoses was not seen in this quarter of 2014 (see later). Submission rates tend to be highter in the first and last quarters of the year and the pattern and number of submissions will be kept under review.**

NEW AND EMERGING DISEASES

ANALYSIS OF DIAGNOSTIC SUBMISSIONS FROM WHICH NO DIAGNOSIS WAS MADE

This report 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 2009-2013 for GB VIDA data.

DNR by Presenting Sign and Syndrome

- A total of 19.8% of GB pig submissions to Q3, 2014 did not reach a diagnosis. This was not significantly increased compared to the overall DNR for the same period in prior years of 18.4%. Overall DNR rates for SACCVS (19.4%) and APHA (20%) were not significantly elevated for this period compared to the same period in prior years.

- The DNRs for GB and APHA submissions with a presenting sign of "Wasting" were significantly increased to 31.9% (15/47) compared to 13.6% in prior years for GB and 33.3% (13/39) compared to 13.9% in prior years for APHA. This is due to the continued effect of an increase in the DNR in January to March 2014, the DNR has not been elevated in subsequent quarters. A review of the DNR submissions was reported in past quarterly reports and did not raise concern of an emerging syndrome. DNR for this presenting sign for SACCVS was not significantly increased.

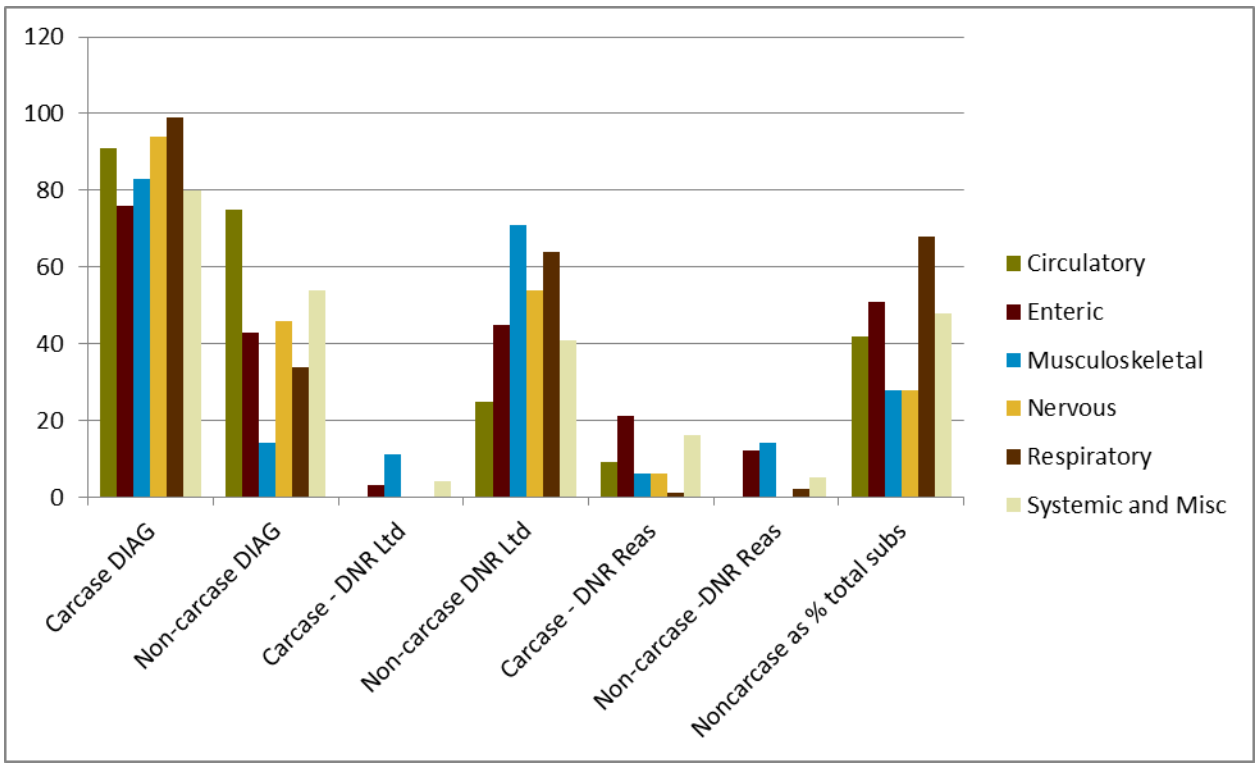
- The DNR for GB for submissions with a presenting sign of "Respiratory" was significantly increased in July to September 2014; DNR was 27.8% (5/18) compared to 9.3% in the same period in prior years. DNR for this presenting sign was significantly increased for APHA submissions but not SACCVS ones. The DNR for respiratory syndrome submissions was not significantly increased; 11% compared to 4.6 for this quarter in prior years.

Increase in DNR for respiratory disease as a presenting sign

- Although the numbers of undiagnosed respiratory cases in July to September were low, as a precaution, all eight DNR submissions for this presenting sign in 2014 were reviewed. There was no evidence of a common presentation or findings to suggest an emerging syndrome or disease. Four were non-carcase submissions on which testing was limited, diagnoses were subsequently established for two submissions and three were either treated or submitted at an inappropriate disease phase.

- The diagnostic rate for carcase submissions receiving reasonable testing is generally high for respiratory disease; in the 12 months ending September 2014, 99% of respiratory syndrome submissions were diagnosed and the increased DNR rate above was influenced by non-carcase submissions on which full diagnostic investigation could not be undertaken. Figure 2 shows the DNR rates for different syndromes for carcase and non-carcase submissions, and for submissions which were suitable for either reasonable or limited testing.

- A significant feature of Figure 2 is that non-carcase submissions make up a greater proportion of respiratory syndrome submissions than they do for any other syndrome. The figure also shows that in 64% of non-carcase submissions which were not diagnosed, testing was limited.



There may be an opportunity to improve the diagnostic rate of non-carcase submissions through provision of more specific guidelines and training, in particular for respiratory disease given the higher proportion of non-carcase submissions for this syndrome. A step towards this goal was achieved when guidance on sampling and tests for diagnosis of common disease presentations for farmed livestock and wildlife, with sections dedicated to each species, was made available on-line, available through this link: http://ahvla.defra.gov.uk/vet-gateway/surveillance/diagnostic-support.htm.

Analysis of undiagnosed submissions to Q3, 2014 has not revealed evidence of a new and emerging syndrome in GB pigs.

Negated Swine Fever Report Case

There were two suspect swine fever reports made to APHA in August 2014, samples were collected from both and they were negated after testing negative for classical and African swine fever. One of these was prompted when neonatal piglets dying from several litters were submitted to the RVC-APHA surveillance centre for investigation. The piglets had widespread multiple haemorrhages as illustrated in Figure 3 and it was not possible to rule out swine fever from the information available at the time.

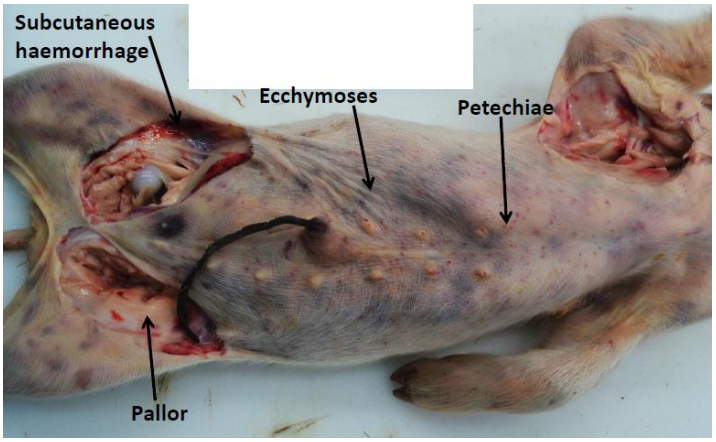


Figure 3: Cutaneous haemorrhages in piglet with thrombocytopaenia purpura (image courtesy of Tom Eley, RVC)

Ultimately, a diagnosis of thrombocytopaenia purpura was established, a sporadic disease which occurs in 4 to 30-day-old piglets after ingesting colostrum from a sow which has developed immunity to foetal thrombocyte antigens during pregnancy. The case was presented at the Pig Veterinary Society autumn conference ("Bloody piglets" Tom Eley, Royal Veterinary College) and served as a useful reminder of a differential diagnosis for the swine fevers in preweaned piglets because of the gross lesions which result which resemble those of the swine fevers.

A CPD meeting on notifiable and exotic diseases of pigs organised by the Pig Veterinary Society in October 2014 provided an excellent update on the swine fevers and their differentials, foot and mouth disease, porcine epidemic diarrhoea (PED), where the main threat of these diseases to the UK exist and guidance on the procedures that follow a suspect notifiable disease being reported.

Update On Porcine Epidemic Diarrhoea Virus

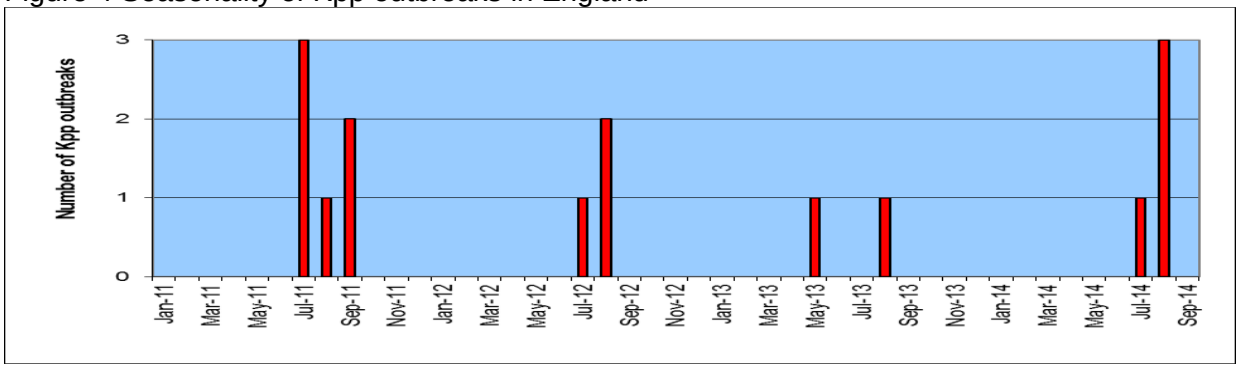
Following its emergence in the USA in April 2013, the virulent new variant of PEDv continued to cause outbreaks there but with some reduction in cases over the summer months, thought to be, in part, due to the effect of hotter dryer weather conditions on the virus and efficacy of cleaning and disinfection. The total number of pig farm samples that have tested positive for the Porcine Epidemic Diarrhoea (PED) virus in the USA stood at 8,758 in 31 states at the end of October 2014. The coordinated approach to PED control and stringent biosecurity procedures across the industry are credited with very limited spread of PED in Canada over the summer period although there is concern than outbreaks may reoccur over winter. The EFSA opinion (EFSA 2014) was published and reviewed what is known of PED viruses present in the EU http://www.efsa.europa.eu/en/efsajournal/pub/3877.htm. Italy and Germany have reported recent outbreaks but these have not had the clinical impact of those seen in North America. Characterisation of the viruses involved has shown high sequence identity between these and US PEDv strains. Quality Meat Scotland and NFU Scotland are distributing sampling kits to 934 pig units for immediate use if they see clinical signs suspicious of PED. PEDv PCR testing of diagnostic samples submitted to APHA from pigs with diarrhoea has continued through Defra-funded surveillance. No PEDv PCR-positive samples have been detected in 136 APHA diagnostic submissions from outbreaks of diarrhoea to October 2014. Two outbreaks of diarrhoea in preweaned pigs were tested for PEDv by SACCVS and SACCVS has undertaken monitoring testing of more than 900 samples for PEDv/TGEv and deltacoronavirus and none have tested positive for these viruses. The fact that no endemic PEDv has been identified through this testing supports the view that most of the GB pig population is likely to be susceptible to the virus whatever the infecting strain. **Maintaining surveillance and implementation of the exotic and roundtable recommendations remain key activities for all stakeholders and an another disease awareness item was included in APHA veterinary investigation centre newletters to practitioners. More information is available on the following link: http://www.bpex.org.uk/R-and-D/Pig-Health/pedv.aspx.**

ONGOING INVESTIGATIONS

New developments in *Klebsiella pneumoniae* septicaemia outbreaks

Consistent with each summer since 2011, *Klebsiella pneumoniae* subsp. *pneumoniae* (Kpp) septicaemia outbreaks were diagnosed in July and August. Four outbreaks were diagnosed bringing the total to 14 as shown in Figure 5, involving 12 separate units as two units have had outbreaks recur in a second year.

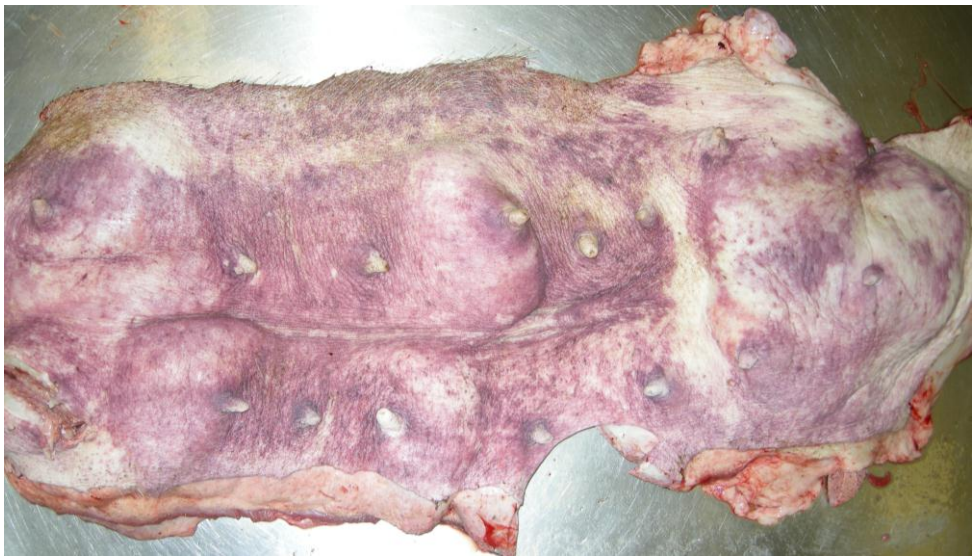
Figure 4 Seasonality of Kpp outbreaks in England



Preliminary analysis suggests that the outbreak Kpp isolates are the same as those involved in outbreaks in previous years; sequence type 25 with a particular combination of a small plasmid and a virulence gene not present in non-outbreak Kpp isolates. There were three notable developments in 2014. The first outbreak in 2014 was also the first outside East Anglia. An outdoor breeding unit submitted 10 to 12-day-old piglets to APHA Starcross. Findings were very similar to those seen in previous cases with piglets in good condition showing evidence of recent feeding but with a septicaemic appearance and marked haemorrhages on the intestinal serosa and Kpp was isolated from a wide range of internal sites. The outbreak was typical of most previous ones, with unexpected deaths of preweaned pigs in good body condition. However, mortality was significantly higher at 16% over a period of four weeks. Antimicrobial treatment was instituted at the same time as iron supplementation and, when treated pigs came through, mortality stopped. This treatment will be continued until the autumn as, so far, Kpp outbreaks have been confined to the summer. The herd has been closed for several years and litters from sows of all parities were affected, the reason for the outbreak is not known and no links to East Anglian units have yet been identified.

The other three outbreaks were diagnosed in East Anglia during August. These were also typical in causing sudden deaths of piglets from two-weeks-old on outdoor breeding units. However one outbreak was unusual and significant in that, just after Kpp was diagnosed in piglets on the unit, several sows in the same farrowing batch as the affected piglets became severely ill. Eight sows were affected from the group of 150 which were soon to be weaned, and five died. Affected sows were acutely depressed and inappetant with skin discolouration especially around the perineum, vulva and mammary glands due to severe mastitis – multiple glands were affected and Kpp was isolated in pure growth. Figures 5 and 6 show the mammary gland lesions.

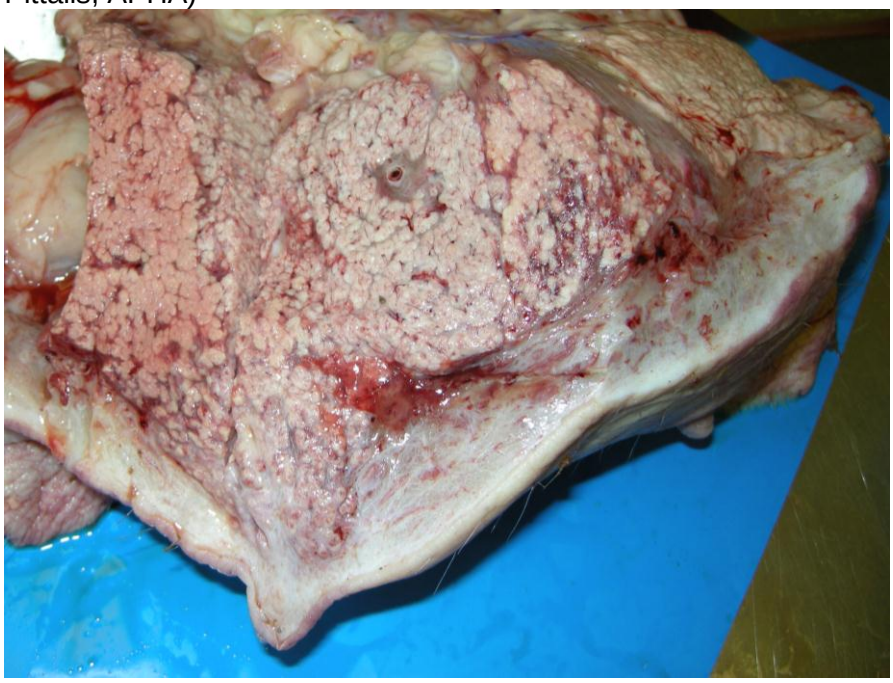
Figure 5 Mastitis due to *Klebsiella pneumoniae* infection (image courtesy of Livio Pittalis, APHA)



This was the first Kpp outbreak involving disease in sows and prompt treatment of affected sows with potentiated sulphonamide prevented further deaths.

The third development was the first detection of an outbreak Kpp isolate showing acquired antimicrobial resistance. The isolate was resistant to apramycin, spectinomycin, streptomycin, lincomycin-spectinomycin, doxycycline and tetracycline in addition to the innate resistance of all Kpp to ampicillin. The isolate was sensitive to amoxycillin/clavulanic acid, cephalosporins, trimethoprim-sulphamethoxazole, florfenicol and enrofloxacin. Kpp co-exists in the alimentary tract providing opportunity for acquisition of resistance from other members of the Enterobacteriaceae including *Escherichia coli* and *Salmonella* serotypes. Genetic analysis of the resistant isolate and comparison with the sensitive Kpp is to be undertaken to investigate the genetic basis of the antimicrobial resistance.

Figure 6 Cross section of gland affected with *Klebsiella pneumoniae* mastitis (image courtesy of Livio Pittalis, APHA)



The genetic analysis of outbreak and historic isolates is also investigating what features of the outbreak Kpp strain may have resulted in its emergence as a new pig pathogen**. A presentation was made at the Pig Veterinary Society autumn 2014 conference ("*Klebsiella pneumoniae* summer outbreaks: What's new in 2014?" Susanna Williamson and Cornelia Bidewell) to raise awareness and update pig practitioners on the features of Kpp outbreaks and developments seen in 2014.**

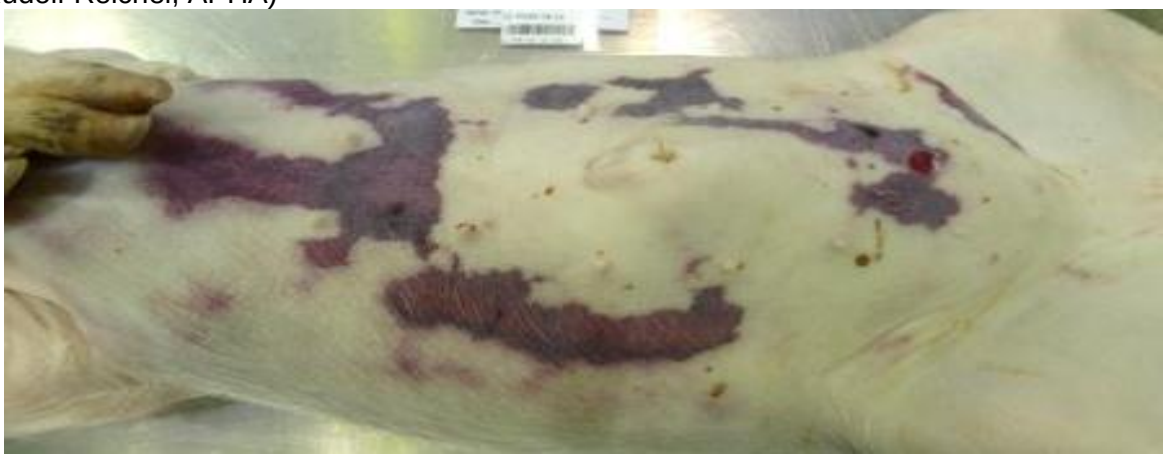
UNUSUAL DIAGNOSES OR PRESENTATIONS

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.

Glässers disease with severe skin lesions in weaned pigs

Six-week-old piglets were submitted to Thirsk from a batch of 700 where about 20 had died over a few days. The clinical problem began after weaning with a few pigs being found dead each day. Affected piglets appeared uncomfortable, with swelling of the ventral skin, inguinal area and parts of the limbs.

Figure 7: Unusual skin lesions on the ventral abdomen in a pig with Glässers disease (image courtesy of Rudolf Reichel, APHA)

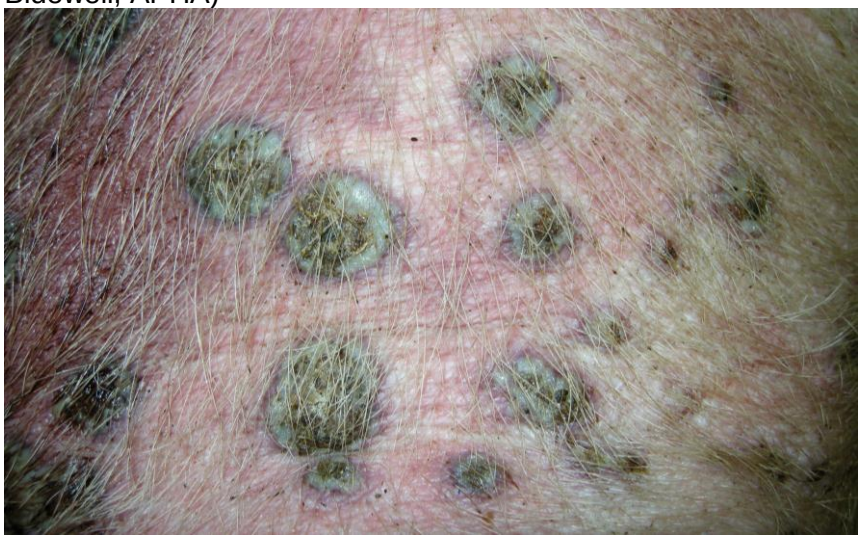


The submitted piglets were not pyrexic but walked with a stiff gait. There was marked pitting oedema of the skin of the ventral abdomen, scrotum and inguinal region and large well demarcated purple areas were present where the skin surface was necrosing as shown in figure 7. The affected skin was cold to the touch and, on incision, thick subcutaneous oedema was revealed as shown in figure 4. There was also evidence of generalised lymphadenopathy and a fibrinous pericarditis, pleuritis and peritonitis, typical of Glässers disease which was confirmed by isolation of pure growths of *Haemophilus parasuis*. Subcutaneous oedema and marked scrotal swelling have been reported in past outbreaks of Glässers disease (Hughes, 2003).

Staphylococcal skin disease causes skin lesions resembling pig pox

Housed finisher pigs were euthanased and submitted as part of an ongoing disease investigation. Clinical signs included pallor, coughing, wasting and 15% mortality. Approximately 200 of 880 pigs were affected over the five-week period and were from a single source. PCVAD had been diagnosed in a previous submission and the virus was a PCV2b typical of previous GB viruses. The pigs were vaccinated for *Mycoplasma hyopneumoniae* and should have been PCV2-vaccinated but it was suspected that several batches missed their scheduled PCV2 vaccination. Two of the pigs had multifocal circular raised lesions over the ear pinnae, dorsal neck, body and upper legs measuring 3mm to 3cm with pale peripheries and darker scabbed centres. Lesions in the more severely affected pig are illustrated in figure 8. Pig pox was considered a possible differential but pox virus was not detected by electron microscopy and histopathology was consistent with a primary bacterial cause, similar to juvenile impetigo, the pathogenesis of which involves staphylococcal exfoliative toxins. The pustules were more discrete and the acanthocytes were more numerous than is usual in *Staphylococcus hyicus* (greasy pig)-associated lesions. *Staphylococcus lentus* was isolated rather than *S. hyicus;* this organism is not usually associated with skin disease in pigs and is of doubtful clinical significance.

Figure 8: Bacterial skin disease causing lesions resembling pig pox (image courtesy of Cornelia Bidewell, APHA)

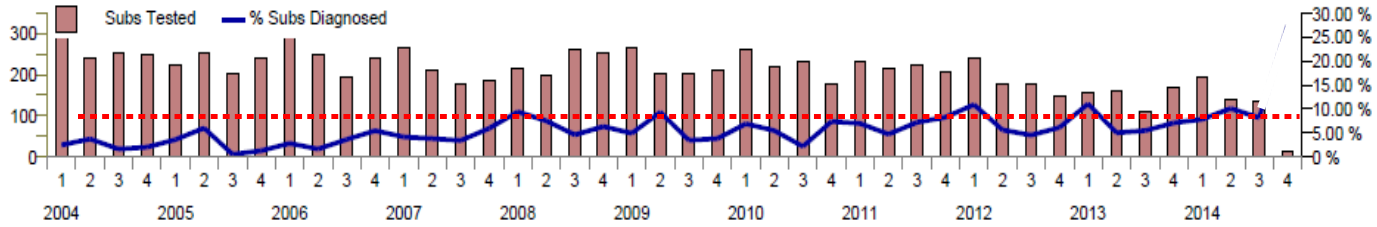


CHANGES IN DISEASE PATTERNS AND RISK FACTORS

Porcine reproductive and respiratory syndrome diagnoses show no summer reduction

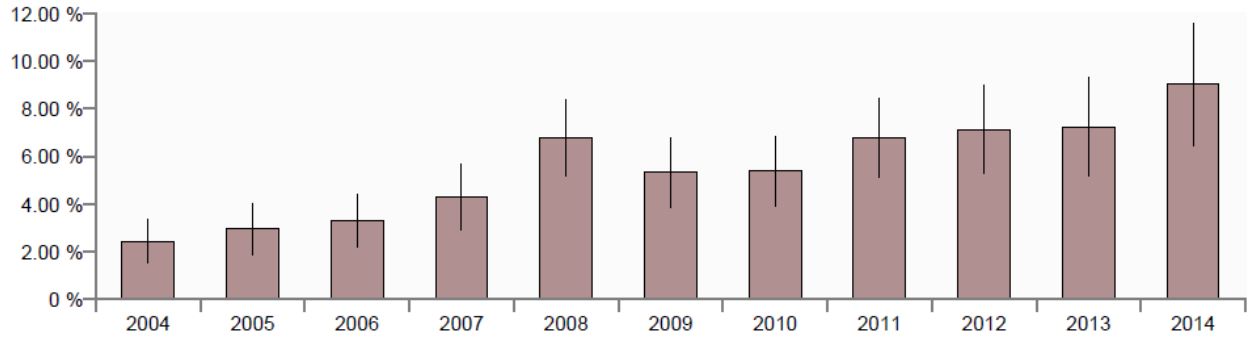
Trend analysis of the seasonality of GB porcine respiratory and reproductive syndrome (PRRS) over recent years has shown that there tends to be a peak in diagnoses in the winter months as illustrated in figure 9 below. This probably reflects the fact that climatic conditions over the winter tend to favour survival of PRRS virus and promote transmission. Survival of the virus in contaminated pig accommodation, vehicles or on other fomites is also more likely as effective cleaning and disinfection and drying of surfaces is harder to achieve in wet and cold weather. This year, the diagnostic rate of PRRS during July to September was higher than the same quarter in any of the last ten years.

Figure 9: Seasonality of GB incidents of PRRS



This raises concern that there will be more active infection present going into the cooler months, further increasing the risk of virus spread during this time and contributing to the upward trend in annual PRRS diagnoses illustrated in figure 10. Obtaining an accurate diagnosis in respiratory disease outbreaks assists in determining whether PRRS virus is involved and in deciding on specific control measures. Outbreaks of respiratory disease may involve more than one infectious cause and, ideally, a batch of three typically affected pigs early in the course of disease should be sampled or submitted to provide the best material for both diagnosis and pig disease surveillance.

Figure 10: GB incidents of PRRS as % of diagnosable submissions (data for 2014 incomplete)



Outbreaks of respiratory disease and, occasionally reproductive failure, due to PRRS continue to be diagnosed in vaccinated pigs. One such case was an acute outbreak of late-term abortions in sows on a PRRS-vaccinated indoor breeder-finisher.

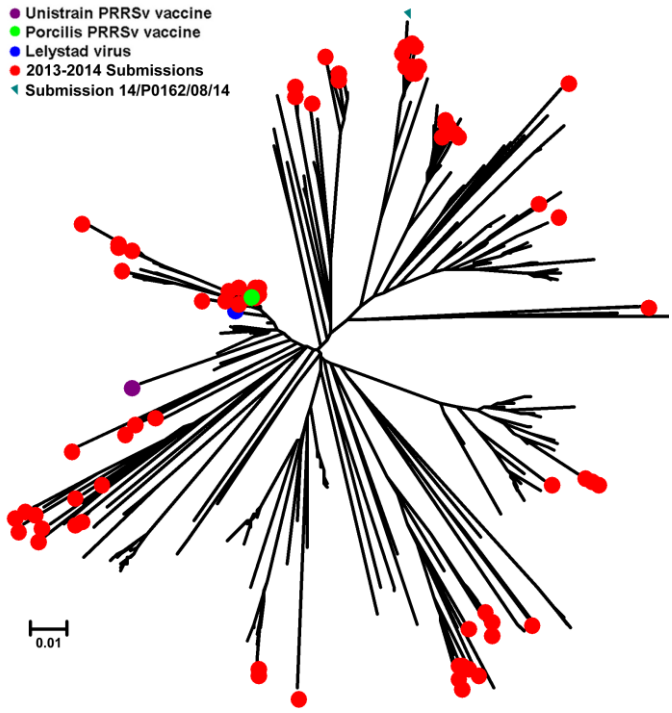


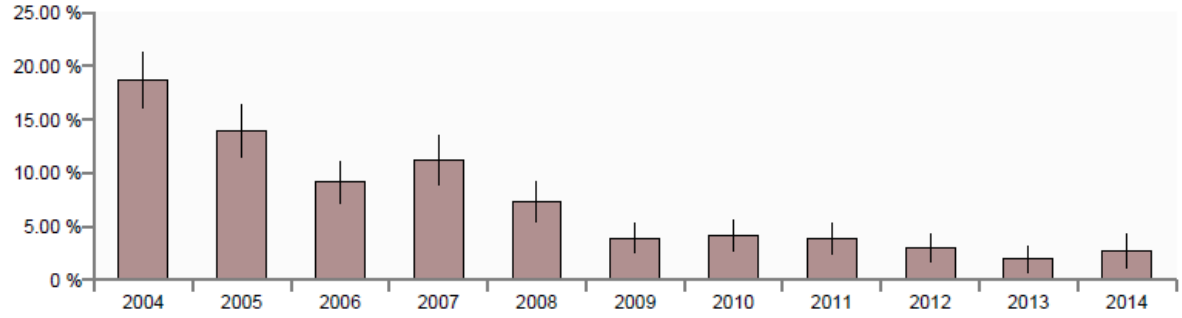
Figure 11: ORF5 phylogenetic tree showing virus strain from PRRS outbreak (14-P0162-08-14) with other 2013-14 strains sequenced from England

Following mass vaccination of the herd, disease reduced and abortions stopped, although increased returns and litters of poor viability persisted, typical of PRRS and causing significant economic impact. Gilts were homebred on the unit and their litters were not affected, raising the possibility that endemic virus has been circulating at a low level in the rearing herd, and disease followed spill-over into the breeding herd, affecting mainly older sows. PRRSv sequencing showed the virus to have 89.3%% and 87.6% homology to the two licensed vaccine virus strains.

An alert about this trend in PRRS was included in the presentation at the BPEX September producer workshop and the September monthly highlights which are circulated to Pig Veterinary Society, industry and others to increase awareness about the upward trend of PRRS. The alert is found in these highlights via this link:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/373068/pub-survrep-pig0914.pdf

Porcine circovirus 2-associated disease outbreaks in vaccinated pigs
The diagnostic rate of porcine circovirus 2-associated disease (PCVD) outbreaks remains at a low level but there was an increase in diagnoses in Q2 to the highest rate since Q3 2012 and a further increase in this Q3 2014. Figure 12 illustrates the trend in diagnostic rate.

Figure 12: GB incidents of PCVD as % diagnosable submissions



Some of the small numbers of cases seen have been on commercial units vaccinating for PCV2 however, the PCV2 vaccines claims are of a reduction in morbidity of PCVD and scale of disease is important in determining whether vaccine failure may have occurred. In the most severe outbreak diagnosed, several batches of pigs were thought to missed their PCV2 vaccination and once the problem was diagnosed, the following batches were definitely vaccinated and were not affected. There have also been smaller but significant outbreaks in units where PCV2 vaccination was delayed to 1-4 weeks post-weaning. Interestingly, on multi-source units, disease has sometimes only affected pigs from one breeding source. This may have been a reflection of variability in maternal PCV2 immunity between breeding sources, with variable maternal antibody and, therefore, variable vaccine-take in piglets from those sources. Joaquim Segalés of Cresa, Spain, gave a webinar on “Circovirus vaccination and the management of maternally-derived antibodies” on behalf of Zoetis and indicated that high maternal antibody at the time of vaccination was likely to reduce efficacy and, in these herds, later vaccination after weaning may be appropriate. On units receiving pigs from several sources with pigets with different PCV2 antibody statuses, the vaccination regime is the same for all sources and thus could provide better protection for pigs from some sources than for others. PCV2 genotyping was undertaken on further 2014 cases and has not detected another PCV2b variant from outbreaks; they have all been typical UK type 2b. **One PCVD outbreak in 2013 involved a PCV2b variant, this has not been detected since. Publication of the findings is planned. No further action is required at this stage but the trend in PCVAD diagnoses will continue to be kept under review.**

Serosurveillance for PRRS and swine influenza in Scottish slaughter pigs
SACCVS undertook a serological survey for PRRSv and swine influenza virus (SIV) in Scottish pig herds (SACCVS, 2014). Serum samples were collected from ten finishing pigs at slaughter from each of 112 pig herds in Scotland during 2012 to 2013. These herds comprised the majority of units in the Wholesome Pigs Scotland abattoir monitoring scheme/Quality Meat Scotland assurance. Pigs from 16

per cent of herds showed evidence of exposure to both PRRSV and SIV, 40 per cent to PRRSV only, 12 per cent to SIV only and 32 per cent showed no evidence of exposure to either PRRSV or SIV (Figure 13). The overall seroprevalence to PRRSv of 56% in Scottish pig herds is very close to the seroprevalence of 58% for PRRSv in a UK seroprevalence study on slaughter pigs (Cheney and Powell, 2013). The overall prevalence to SIV of 28% in Scottish pig herds is lower that the 52% herd prevalence reported by Mastin and others (2011), however there were differences in the sampling frame. The Scottish study was conducted in collaboration with Quality Meat Scotland.

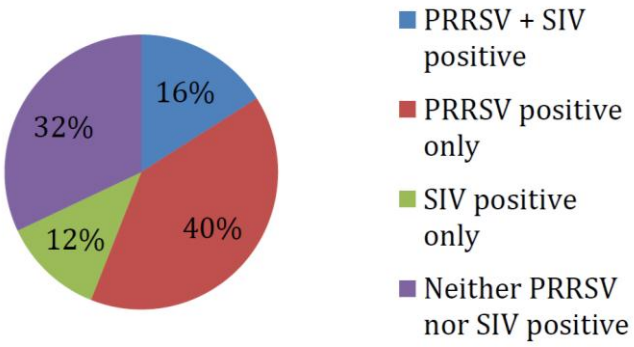


Figure 13: ORF5 phylogenetic tree showing virus strain from PRRS outbreak (14-P0162-08-14) with other 2013-14 strains sequenced from England

Second case of systemic porcine cytomegalovirus infection in weaners

Porcine cytomegalovirus (PCMV) due to a beta herpes virus is occasionally diagnosed in APHA, usually associated with rhinitis, and sometimes wasting, post-weaning. PMCV including systemic lesions was reported in the April to June Emerging Threats report, on that occasion with swine influenza and streptococcal disease. This second incident of PMCV with systemic lesions was diagnosed in September as the cause of sneezing and illthrift in 5-10% of pigs soon after weaning on a breeder-finisher unit.

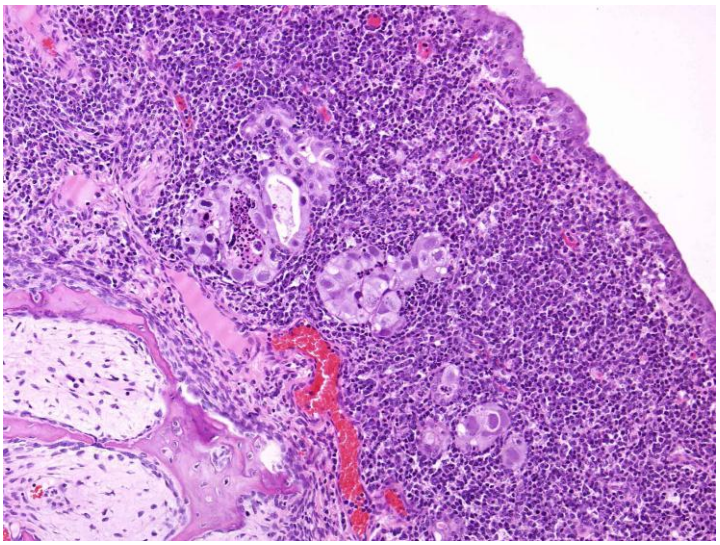


Figure 14: Nasal epithelium showing lesions and viral inclusions of PMCV (image courtesy of Sandra Scholes, APHA)

In this case, the PMVC was considered the primary cause of the illthrift, although the possibility of earlier involvement of swine influenza is being investigated. Histopathological lesions were present in nasal epithelium (figure 14) and kidney. It is likely that PMCV could be underdiagnosed if other more severe diseases are present and it is secondary in clinical significance. Eight PMCV diagnoses were recorded in VIDA over the last 10 years. In three submissions it was the only diagnosis made, in five it was with other diseases (mainly respiratory diagnoses but one with enteric colibacillosis). The primary clinical signs were respiratory or wasting, the secondary clinical signs were respiratory, wasting or diarrhoea. Pigs were submitted for diagnosis aged between 3 and 5-weeks-old. Interestingly, a severe outbreak of PMCV in Switzerland with clinical signs of lethargy, respiratory disease, wasting and one stillbirth was described at the joint Europathosurveillance network- European Society of Veterinary Pathologists meeting in Berlin in September 2014 (Marti and others, 2014). **The APHA case was presented at the Pig Veterinary Society autumn conference ("Sneezing pigs" Duncan Berkshire, Bishopton Veterinary Practice) which will help raise awareness. Exposure of replacement breeding pigs to ropes which have hung in weaner pens is being attempted for control.**

HORIZON-SCANNING

African Swine Fever spread in EU in Eastern Europe

During July to September 2014, ASF continued to cause disease and deaths in wild boar in Estonia and in wild boar and backyard pigs in Poland, Latvia and Lithuania and there was continued geographic spread in the region. A large commercial pig unit considered to be biosecure was infected in Lithuania for which the source of infection is not known although an infected wild boar carcase was found nearby. Biting fly transmission is being assessed by Pirbright as a rare but possible seasonal means of transmission. The herd was culled and there was no spread to other commercial units in Lithuania. ASF in Latvia is of concern as numbers of wild boar and backyard pig cases were reported and some significant geographical jumps have occurred. Some of the wild boar carcases were found scavenged and had been dead for a significant time. Each of the infected EU countries have instituted specific control measures to address the outbreak in their wild boar and pigs. It is considered that the risk of ASF would increase significantly if infection spreads into West Poland and/or into commercial pig herds. Up to date preliminary outbreak assessments are available on: https://www.gov.uk/government/collections/animal-diseases-international-monitoring#preliminary-outbreak-assessments. **The Pig Veterinary Society held a CPD event which included ASF and CSF to increase awareness amongst veterinarians attending pig units, three speakers from APHA contributed to this day which was well-received. BPEX held a biosecurity workshop for pig producers in September in York to which APHA contributed ("African Swine Fever – what is it?" and "Surveillance for Threats to GB pigs" Susanna Williamson).**

***Pasteurella multocida* septicaemia as a differential for porcine notifiable disease**

Haemorrhagic disease due to *Pasteurella multocida* septicaemia was diagnosed in pigs in the summer of 2010 for the first time in Germany since 1986 and the outbreaks in pigs since then were described in a poster presented at the joint EPSN- ESVP 2014 meeting (Bilk and others, 2014). In two herds, mortality was 11 and 14% and the lesions in the pigs are shown in figures 15 and 16. The haemorrhagic nature of these, distribution and associated subcutaneous oedema and reaction make this disease a differential diagnosis for both swine fevers and anthrax which, in pigs, results in marked throat swelling. *Pasteurella multocida* septicaemia outbreaks are occasionally diagnosed in GB pigs but show no increase at present. The results of multilocus sequence typing (MLST) of APHA *P. multocida* isolates from pigs was reported in the April to June 2014 Emerging Threats report and did not detect an emergent strain.

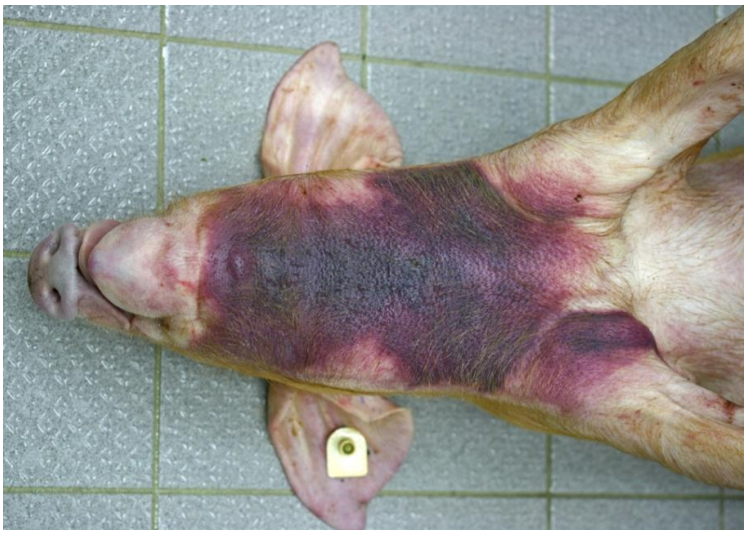


Figure 15: Haemorrhagic septicaemia in a pig – image kindly provided by Sabine Bilk, Christoph Schulze, Dirk Soike, Astrid Bethe and Peter Kutzer.

Increased risk of ergot in 2014 cereal crops used for pig feed

Veterinary surgeons attending pigs were asked to be vigilant for signs of ergotism following alerts to cereal growers to monitor their crops following high levels of ergot being found in heavily infested blackgrass areas. Feed compounders should be aware of the problem and reject cereals containing above a threshold number of ergots in a sample. The presence of ergots does not represent a general mycotoxin problem as a different fungal contamination is responsible. An alert was sent to pig

practitioners and circulated to VIOs raising awareness of this risk and the clinical signs of ergotism. No suspect cases have been diagnosed by, or reported to, APHA or SACCVS.

Genotype 2 PRRSv remains a threat to GB pigs

The threat of North American or genotype 2 PRRSv should not be overlooked while there is high concern about ASF and PED. Genotype 2 PRRSv has never been detected in UK pigs but remains a threat from many other pig producing countries in the world including Europe, North America and Asia. Immunity to the endemic European or genotype 1 PRRSv would not protect against genotype 2 PRRSv which also tends to be more virulent than genotype 1 virus. Genotype 2 PRRS is specifically mentioned as a threat in the National Pig Association's voluntary protocol for live pig imports. Although it is not a statutory requirement, it is vital that pigs imported live are tested prior to import and again while in quarantine to prevent incursion. Pigs can carry PRRSv for weeks to months in their tonsils after recovery from the initial infection and so can appear healthy while still infectious. The PRRSv PCR used at APHA and SACCVS distinguishes genotype 1 and 2 at the outset which would help early detection if samples are submitted. Investigation at APHA or SACCVS of disease outbreaks in pigs which are severe, unusual or unresponsive disease outbreaks is actively encouraged. The on-line advice provided will also assist practitioners to select suitable samples and tests: http://ahvla.defra.gov.uk/vet-gateway/surveillance/diagnostic-support.htm**.**

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