SELECTED HIGHLIGHTS FROM APHA PIG DISEASE SURVEILLANCE REPORTS
JULY 2015

- Coccidiosis in young replacement boars following arrival on an outdoor unit
- Pandemic H1N2 2009 swine influenza detected in weaners with acute respiratory disease
- Growers with respiratory disease due to Glässer’s disease
- First 2015 case of Klebsiella pneumoniae (Kpp) septicaemia diagnosed in East Anglia

**Alimentary Disease**

**Coccidiosis in young replacement boars following arrival on an outdoor unit**
Three of eight young replacement breeding boars were affected with diarrhoea two weeks after arrival on an outdoor unit and entering a training paddock which had been used for previous batches of pigs. *Salmonella* or porcine epidemic diarrhoea virus were not detected but a high coccidial oocyst burden was present in the faeces sample submitted to Bury St Edmunds; the count was very high (630,000 oocysts per gram faeces) and speciation revealed a mix of *Eimeria* species (including *E. suis, E. debliecki, E. perminuta, E. polita*) which is typical of these cases. Clinical coccidiosis is unusual in post-weaned pigs but, when diagnosed at APHA in the last decade, it has been in similar scenarios to this incident; replacement gilts or boars born and reared indoors in likely hygienic environments, then moved and exposed to ground heavily contaminated with oocysts with disease occurring around two weeks later, sometimes concurrent with salmonellosis.

**Respiratory Disease**

**Concurrent swine influenza and PRRSv with secondary streptococcal disease**
Three four to five-week-old pigs were submitted to Bury St Edmunds investigate poor growth and respiratory disease affecting around 7% of 4000 growers on an outdoor unit. The pigs were vaccinated for *Mycoplasma hyopneumoniae*, PCV2 and PRRSv. The pigs had fibrinous polyserositis and cranioventral pneumonias and *Streptococcus suis* type 3 was isolated from the lungs. This *S. suis* type does not generally cause primary disease and the detection of swine influenza strain H1N2 as well as confirmation of pneumonia due to PRRSv by immunohistochemistry and PCR indicated that it was a likely secondary pathogen.

**Pandemic H1N2 2009 swine influenza detected in weaners with acute respiratory disease**
An outbreak of respiratory disease due to pandemic H1N1 2009 swine influenza was diagnosed when nasal swabs were submitted for the Defra-funded swine influenza surveillance and tested positive by PCR. Disease was characterised by acute sneezing, nasal discharges and coughing in pigs in the first week after weaning. The practitioner targeted acutely affected pigs for sampling which is important for swine influenza as the window of opportunity for virus detection by nasal swabbing is around seven days in individual pigs.

**Growers with respiratory disease due to Glässer’s disease**
Glässer’s disease was confirmed as the cause of dyspnoea and coughing in 10 to 11-week-old outdoor pigs on an organic nursery-finisher. The pigs were vaccinated for *Mycoplasma hyopneumoniae*, PCV2 and PRRSv and none of these pathogens were detected in two typically-affected pigs euthanased for diagnostic investigation. Both pigs had pneumonia and polyserositis with *Haemophilus parasuis* (Hps) isolated from both confirming the diagnosis.
There was a peak in the diagnostic rate of GB disease incidents due to Hps in the first six months of 2015, as illustrated in Figure 1 and serotyping of archived isolates from 2014-15 is to be undertaken to see if there has been any change compared to previous serotypes.

Figure 1: Seasonality of GB *Haemophilus parasuis* disease incidents (to Q2 2015)

**Systemic Disease**

**First 2015 case of Klebsiella pneumoniae (Kpp) septicaemia diagnosed in East Anglia**

The first case of *Klebsiella pneumoniae* (Kpp) septicaemia of 2015 was diagnosed at Bury St Edmunds and was typical of outbreaks seen each summer in the East Anglian region since 2011. Preweaned piglets were found dead at two and a half-weeks-old on an outdoor breeding unit which had a Kpp outbreak in 2013. Pure growths of Kpp were obtained from multiple internal sites including joints which, less typically, showed lesions of supplicative polyarthritis. In this incident, the isolate showed greater antimicrobial resistance than most previous outbreak isolates and was resistant to lincomycin/spectinomycin, trimethoprim/sulphamethoxazole, tetracycline, doxycycline and apramycin. It may be of note that post-weaned pigs on the same unit have experienced significant disease problems in recent weeks necessitating group medication which could be influencing acquisition of resistance in the Kpp.

**Mixed septicaemic and enteric disease causing preweaning deaths**

Sudden deaths in pre-weaned pigs were also investigated on an indoor three-weekly batch-farrowing breeder-finisher. Gilt litters were over-represented in those affected and some diarrhoea was also reported in three-week-old pigs as well as sudden or rapid deaths. Dead piglets aged 26 days were submitted; two in poor body condition with diarrhoea and one in good body condition with lesions suggestive of septicemia. All were described as having died rapidly and one had been treated. In spite of the prior treatment, *Haemophilus parasuis* was isolated from the meninges of the septicaemic piglet and also one of the pigs with diarrhoea. An enterotoxigenic F4-positive *Escherichia coli* strain (G1253) was isolated from the intestine of the other diarrhoeic pig which also had lesions of greasy pig disease from which *Staphylococcus hyicus* was isolated. No other enteropathogens were identified but the poor body condition of the two diarrhoeic pigs suggests the initial cause, such as rotavirus or coccidiosis, may no longer have been present. The mixed findings and diseases suggest that a review of farrowing house management and hygiene was needed as well as consideration of how to improve the quality of maternal immunity to Hps in piglets especially in gilt litters so that piglets are protected when infected and can mount their own immune response without becoming diseased.

**Meningitis and pneumonias due to Haemophilus parasuis**

Disease due to *Haemophilus parasuis* (Hps) was also diagnosed when three dead pigs were submitted to Shrewsbury to investigate 14 deaths and eight further pigs affected with fitting and recumbency on a unit of 1500 growing pigs sourced from two different farms. A few pigs had responded to penicillin by injection. All pigs submitted had pneumonia and also fibrinous exudate in the abdominal cavities and suspected meningeal exudate in two. They had been on medicated feed which can affect bacteriological findings, but Hps was isolated from one lung and histopathology confirmed lesions typical of bacterial bronchopneumonias due to organisms such as Hps.

**Nervous Disease**

**Sudden deaths and nervous signs due to Streptococcus suis type 14**

Streptococcal meningitis due to *S. suis* serotype 14 was diagnosed as the cause of nervous signs and increased mortality on a an indoor nursery-finisher. Eight pigs were affected with four dying in a batch of 1000 six-week-old pigs and two pigs found dead were submitted to Bury St Edmunds. One in fact had a
congenital heart septal defect resulting in heart failure while the other had non-specific lesions and *S. suis* serotype 14 was isolated from the meninges in pure growth. This serotype is less common than *S. suis* 2 but is recognised as a primary pathogen causing septicaemia, meningitis and arthritis in growing pigs.

**Brain abscessation following inner ear disease**

A four-month-old piglet had reportedly been “wobbly” on its legs almost since birth and farmer believed the pig was deaf. It was kept indoors with some smaller piglets and appeared to develop slowly. However the incoordination worsened, the pig became recumbent and was euthanased and submitted to the Royal Veterinary College. Postmortem examination revealed a likely bilateral inner ear infection that had tracked into the cranium and resulted in bilateral small abscess formation at the ventral brain stem near the site of the inner ears.

**Musculoskeletal disease**

**Polyarthritis in weaners**

‘Swollen shoulders’ were reported in weaned pigs. Just over 800 were weaned every three weeks into groups in flat decks. Approximately 20 cases occurred over the several weeks until three euthanased pigs were submitted to Shrewsbury. There was marked swelling of one elbow in all three pigs, one toe in one pig and mild erosion of the soles of the front feet in all three pigs. Lesions of severe polyarthritis were present in all three pigs with varying amounts of thick green-yellow liquid purulent material in and around elbow joints with marked periarticular fibrosis, similar lesions were visible in some hock joints and the distal interpharyngeal joint of one toe, with purulent material in the bone marrow cavity of the distal humerus. *Trueperella pyogenes* was consistently isolated from affected joints and is not commonly associated with outbreaks of polyarthritis in pigs; predisposing factors including trauma may have played a role.