



SELECTED HIGHLIGHTS FROM

AHVLA SURVEILLANCE MONTHLY REPORT OCTOBER 2011

Reproductive Disease

Abortion due to bacterial infection possibly associated with rodents

Foetuses with placentas were submitted from a batch of 120 outdoor sows in which seven were found not-in-pig near-term and three abortions occurred one week pre-term. *Pasteurella pneumotropica* was isolated from two of three foetal stomach contents cultured and *Trueperella pyogenes* was isolated from all three foetal stomach contents. *Pasteurella pneumotropica* can be an opportunist pathogen in pigs and as it is carried by rodents, it was recommended that rodent control should be reviewed. The *Trueperella pyogenes* infection may reflect a suppurative focus elsewhere in the sow's body or could be a secondary suppurative infection in the foetuses. It was recommended that if problems were ongoing, submission of further foetuses with placentae would be worthwhile to investigate further.

Alimentary Diseases

PCV2-associated disease causing wasting and diarrhoea in unvaccinated pigs

Porcine circovirus 2-associated disease (PCVAD) was diagnosed on a unit reporting rapid weight loss with malaise and diarrhoea in approximately 20 of 580 11-week-old pigs. All affected pigs were from gilt litters with no PCV2 vaccine being used in either breeding pigs or the affected pigs. Three euthanased pigs were submitted, all in poor body condition and pale. All three had enlarged inguinal lymph nodes and two had pneumonia affecting cranioventral parts of the lung and diarrhoea. *Pasteurella multocida* and *Actinobacillus pleuropneumoniae* were isolated from pneumonic lung and histopathology revealed lymphoid lesions with intracytoplasmic viral inclusions which, together with the wasting confirmed a diagnosis of PMWS. There was also PCV2 involvement in the enteritis in the two pigs with diarrhoea.

Neonatal scour due to rotavirus developing rapidly after birth

Three live piglets were submitted from an indoor breeding herd which was experiencing a problem of diarrhoea within 24 hours of birth followed by loss of condition in a third of litters in each batch. Affected piglets were from sows of all parities and, in affected litters, approximately 50% of piglets showed signs. There was partial response to antimicrobial treatment if cases were detected early. The three piglets submitted were two to three days old and had excessively liquid intestinal contents in which rotavirus was detected. Histological findings were predominantly those of villus atrophy, consistent with a diagnosis of rotaviral enteritis. In one pig, there was also a mild to acute suppurative enteritis with villus atrophy and Gram positive clostridium-like organisms were present in the small intestine suggesting possible concurrent *Clostridium perfringens* infection, which the mild lesions suggest would be type A. Gammaglobulin estimation in two piglets suggested that colostral antibody transfer was less than optimal in one and borderline for the other (no reference ranges are available for pigs, this is based on comparison with calf and lamb reference ranges).

Postweaning *E. coli* diarrhoea

A nine week-old Duroc cross pig was submitted to investigate sudden deaths on a small farrow to finish unit with continuous flow. Animals were affected approximately ten to fourteen days

after they were weaned at six weeks old. Post mortem examination revealed marked dehydration and dark purple discoloured, distended small intestine with watery brown flocculent contents. Culture of small intestine produced a growth of *E. coli* 0149:K91, K88 ac (also known as Abbotstown), an enterotoxigenic serotype of *E. coli* involved in post-weaning diarrhoea.

Low grade scour in growers due to *Brachyspira pilosicoli*

Brachyspira pilosicoli colitis was diagnosed as the cause of green-grey diarrhoea in 15% of 1,900 13-week-old pigs on an indoor unit which developed over the weekend prior to submission of faecal samples from which the organism was isolated.

Respiratory Disease

Swine influenza diagnosed by submission from nasal swabs from coughing pigs

Bury St Edmunds diagnosed two outbreaks of swine influenza, the virus strains involved are being identified but were not pandemic H1N1 2009. In both cases there was widespread coughing in four or five-week-old pigs on indoor units with low level mortality and swine influenza was diagnosed by detection of influenza A virus by PCR on nasal swabs submitted for free testing under the Defra-funded swine influenza surveillance project.

Complex respiratory disease including swine influenza and bacterial pathogens

Complex mixed disease was diagnosed in five dead pigs in poor body condition submitted from a nursery-finisher where approximately 70 of 3,200 pigs six-weeks or older had died in the two weeks prior to submission. Some had shown nervous signs, others dyspnoea and some pigs were looking pale. Post mortem examination revealed fibrinous polyserositis of varying severity and cranioventral consolidation affecting 20 to 30% of lung tissue. *Streptococcus suis* type 2 was isolated from lesioned sites and swine influenza virus (not pandemic H1N1 2009 strain), *Pasteurella multocida*, *Mycoplasma hyopneumoniae* and *M. hyorhinis* were all detected in pneumonic lung. Histopathology suggested that the pneumonias were primarily of bacterial aetiology, although the swine influenza virus was suspected to be a likely initiating factor. There was no evidence of PCV2 or PRRS virus involvement. Two pigs had gastric ulcers which accounted for anaemia and reported pale appearance. Pneumonia is a recognised risk factor for the development of gastric ulcers, probably due to an interruption in food intake.

Pasteurellosis in weaners

Systemic pasteurellosis was diagnosed as the cause of dyspnoea and rapid death of six-week-old pigs from one litter on a small backyard holding of 15 pigs. Despite antimicrobial treatment prior to death, there was a very heavy growth of *Pasteurella multocida* in systemic distribution. Pig lice (*Haematopinus suis*) were also found on the carcass.

Iron deficiency anaemia and PRRS in pre-weaned piglets

A problem described as 'pale pigs fading from two to three weeks old' with approximately 25% of all piglets affected was investigated. Five pre-weaned piglets were submitted, of which all appeared markedly pale and hairy. There were a few areas of purple-grey consolidation in lung lobes. Histopathology revealed pronounced extramedullary haematopoiesis in the spleen consistent with iron deficiency anaemia which was confirmed by low liver iron concentrations (average 736 $\mu\text{mol/kg}$ DM (reference range 5,000-120,000). Interestingly, two of the piglets also tested positive by PCR for the presence of PRRSv (European strain), which was likely to be involved in the pneumonia.

Systemic & Miscellaneous Diseases

***E. coli* septicaemia in neonatal piglets**

Illness was reported in neonatal piglets on a large indoor weaner-producer unit. Piglets were born healthy, but at three to four-days-old became lethargic and developed red-purple discolouration of the skin of the ventral body and approximately 80% of affected piglets died if left untreated. Examination of submitted neonatal piglets revealed varying degrees of fibrinous peritonitis, pleuritis and pericarditis with generalised lymphadenopathy. Cultures revealed septicaemic distribution of *E. coli* O20:K17; serogroup O20 has been reported in the literature in association with septicaemia in neonatal piglets. Problems were seen at a higher prevalence in gilt litters and there was some evidence of suboptimal transfer of passive immunity via colostrum. There was no evidence of PRRS. The importance of farrowing house hygiene and colostrum management were emphasised, but given the consistent isolation of an organism with an association with neonatal porcine septicaemia, implementation of an autogenous vaccine is being considered.

Electricity failure followed by outbreak of likely greasy pig and *Streptococcus suis* septicaemia in weaned pigs

Thirsk investigated a severe outbreak of suspected greasy pig disease affecting three quarters of 220 five-week-old weaned pigs. A few days after the pigs were weaned and placed in the pens, there was an electricity failure that resulted in poor ventilation and no feed for a number of hours. Three days after this event, clinical signs started to develop. A piglet submitted to investigate had extensive scab formation, erythema and greasy exudate covering the whole body with peeling skin, especially on the ears and the nasal plane. There was also generalised lymph node enlargement, lung oedema, excess pericardial fluid and prominent meningeal vessels suggestive of septicaemia and *Streptococcus suis* type 1 was isolated from the liver, pericardial fluid and skin. The cause of greasy pig disease, *Staphylococcus hyicus*, was isolated although only from the lungs in this particular pig (with *Staphylococcus aureus*) but was considered the likely original cause of the skin lesions. The period of stress resulting from the electricity failure was thought to be the precipitating factor causing multiple infections involving several resident pathogens.

Deaths due to erysipelas septicaemia and heart valve lesions

Multiple diagnoses of erysipelas were made, most in unvaccinated smallholder pigs. Two typical examples are described below.

Erysipelothrix rhusiopathiae septicaemia was established as the cause of death of a five-month-old fattening pig on a smallholding. It was one of two kept outdoors, which presented with pyrexia and anorexia, with one having a slight cough. The coughing pig recovered but the other deteriorated and died. Necropsy findings were suggestive of septicaemia and *Erysipelothrix rhusiopathiae* was isolated from the spleen. In addition a louse infestation (*Haematopinus suis*) and a significant ascarid worm burden were found. Advice was given on treatment and management.

One of three 10-week-old growing pigs on a smallholding was affected for two days with pyrexia, lethargy, respiratory distress, weakness and inappetence. The problem began the day prior to submission and the pig showed terminal fitting and died. The pigs were brought onto the site three-weeks prior to submission and the other two pigs in the group were well. The significant gross findings were a vegetative valvular endocarditis affecting the left atrioventricular valve, fibrinous pericarditis, pulmonary oedema and no evidence of recent food intake. *Erysipelothrix rhusiopathiae* was isolated from the heart valve lesion confirming a diagnosis of erysipelas. Vaccination of the remaining pigs was implemented.

Clostridial hepatitis in sows

The carcase of a 2 year-old Landrace sow in late pregnancy was submitted to Preston from a group of 120 dry sows, two of which died suddenly over four days. Although most of the carcase appeared quite fresh, the liver was very decomposed and contained numerous gas bubbles giving it an 'aero-chocolate' appearance. Heavily blood stained fluid was present in the pericardial sac and thorax. *Clostridium novyi* was detected in liver by FAT confirming clostridial disease as the cause of death.

Nervous Disease

Typical streptococcal meningitis due to *Streptococcus suis* 2 infection

Two of 20 10-week-old pigs were found dead on a breeder-finisher unit. There were non-specific gross lesions of fibrin stranding, moderately enlarged submandibular lymph nodes and there was marked dilation of the superficial cerebral vessels and some accumulations of cloudy to turbid material within cerebral sulci suggesting meningitis which was confirmed by detection of *Streptococcus suis* type 2 by FAT and culture.

Skin Disease

Ringworm in breeding sows

Ringworm was diagnosed by Aberystwyth when fungal hyphae were seen in a stained smear taken from large circular reddened scaly skin lesions on two adult breeding sows. The lesions were widespread across the body of both sows on the holding.

Mange in an organic herd

A skin scrape was submitted from an organic breeder-finisher unit to investigate the cause of a ventral rash including the perineal area and the tops of the legs, which developed into scaly lesions. Approximately 20% of the pigs were affected and itchy and several had very thickened skin. Microscopic examination of the skin scrapes revealed many round mites typical of *Sarcoptes* species confirming a diagnosis of mange. The origin of infection was uncertain as the herd was closed with good biosecurity but could be recrudescence of inapparent infection; this species of mite occurs in a wide range of mammals but has evolved into host-specific 'strains' although zoonotic infections do occur in humans from contact with infested dogs, cattle and pigs.

Musculoskeletal Disease

Staphylococcus hyicus causing severe joint ill in preweaned pigs

An eight-day-old piglet was submitted to investigate an outbreak of what was described as 'aggressive joint-ill', which affected large numbers of pre-weaned piglets from four to ten days old from various litters on a breeding unit. There was some response to amoxicillin treatment by injection. Post-mortem examination confirmed arthritis with joints swollen and distended with turbid joint fluid. The surrounding tissues were also extensively swollen, red discoloured and oedematous and the navel was also swollen, red and oedematous. *Staphylococcus hyicus* was cultured in profuse pure growth from the affected joints, while *Trueperella pyogenes* was isolated from the navel. Control measures include attention to colostrum intake and hygiene and addressing any factors which could damage the skin allowing the organism to enter.

Streptococcal septicaemia and joint infections

Two dead pigs were submitted from an indoor nursery unit where six of 1300 pigs were affected 10 days after arrival with lameness and recumbency and four had died in the three days prior to submission. Gross findings were of a fibrinous polyarthritis in both pigs and polyserositis in one,

with meningitis. Surprisingly, food was present in the stomach of both pigs indicating a very acute onset of disease. *Streptococcus suis* type 2 was isolated from meninges, livers, lungs and joints confirming the involvement of this organism with the disease. There was no evidence of underlying viral involvement.