Recognising exotic diseases of pigs

July 2017, Primefact 955, third edition
Animal Biosecurity and Welfare, NSW DPI

This primefact provides information on some important exotic diseases that affect pigs. A number of diseases in animals are exotic to Australia and ‘notifiable’ under NSW legislation. There is a legal obligation to notify authorities if you know or suspect that an animal has one of these diseases. If you see clinical signs or deaths in animals that may be due to an exotic disease you have a legal responsibility to notify immediately by phoning:

- your Local Land Services (previously Livestock Health & Pest Authority) on 1300 795 299; or
- a NSW Department of Primary Industries veterinarian or authorised officer; or
- the animal biosecurity emergency hotline on 1800 675 888 (monitored 24 hours a day, 365 days a year).

Pigs are considered ‘high risk’ for the introduction of exotic diseases through the illegal feeding of prohibited pig feed, commonly known as ‘swill’. Prohibited pig feed includes meat, meat products and anything that has come into contact with meat or meat products. It is important that pig owners know what they can and cannot feed to their pigs. For further information, please refer to primefact 637 available at http://www.dpi.nsw.gov.au/agriculture/livestock/pigs/husbandry/swill-feeding.

Clinical signs of an exotic pig disease

General indications of an exotic pig disease include:

- unusually high number of pig deaths
- unusually high number of sick pigs
- unusually high number of lame pigs
- unusually high number of pigs not eating
- unusually high number of pigs with a fever (39.5 - 41°C)
- unusually high number of pigs that do not want to get up or have nervous signs
- vesicles (blisters) on pigs’ snouts or feet
- discolouration of the ears, belly, rump, legs or tail

Vesicular diseases of pigs

Vesicular diseases of pigs are viral diseases that include foot-and-mouth disease, swine vesicular disease, vesicular exanthema, vesicular stomatitis, and Senacavirus A.

Foot-and-mouth disease (FMD)

FMD is a highly contagious viral disease of cloven-hoofed animals. It is characterised by the formation of vesicles and erosions in the mouth, nose, teats and feet. Although not very lethal in adult animals, it causes significant production losses and is a major constraint on international trade.

In pigs, the main clinical sign is lameness. There is also fever and loss of appetite. Vesicles form along the top of the foot, on the heels and between the claws.
The feet are sore and affected pigs prefer not to move. Vesicles may also form on the snout, but tend to rupture quickly. Abortion is common and mortality in piglets can be high.

Figure 1 – Ruptured vesicle on snout

Figure 2 – Blister on claw

**Swine vesicular disease (SVD)**

SVD is a contagious disease of pigs characterised by vesicles on the coronary bands, heels of the feet and occasionally on the lips, tongue, snout and teats. The disease may be inapparent, mild or severe. Severe disease is usually only seen when pigs are housed on abrasive floors in damp conditions.

The main importance of SVD is that it is clinically indistinguishable from FMD and any outbreaks of vesicular disease in pigs must be assumed to be FMD until investigated by laboratory tests and proven otherwise.

**Vesicular exanthema (VE) and vesicular stomatitis (VS)**

VE and VS (when horses are not affected) are clinically indistinguishable from FMD and SVD.

**Senacavirus A (SVA)**

SVA (previously known as Seneca Valley virus) has been confirmed as the causative agent of swine idiopathic vesicular disease outbreaks in the United States of America (USA), China, Brazil and Canada. It is also associated with a syndrome known as epidemic transient neonatal losses.

In most cases the production impact is low, but the clinical signs of SVA infection are indistinguishable from those caused by other exotic vesicular diseases of pigs. SVA is therefore an important differential diagnosis of FMD. The clinical presentation of SVA in piglets can also resemble transmissible gastroenteritis and porcine epidemic diarrhoea.

**Transmissible gastroenteritis (TGE)**

In herds newly infected with TGE virus, all ages of pigs are affected. The virus is spread through the faeces and by aerosol. Overseas, starlings have been implicated in spread of disease.

Acute outbreaks of TGE cause severe disease in young pigs. There is likely to be an explosive pattern of infection including vomiting and yellow diarrhoea. Affected pigs become dehydrated and are likely to die. There will be a high mortality in piglets < 3 weeks of age. Sows may also become sick with clinical signs including vomiting, diarrhoea, inappetence and milk failure.

**Porcine epidemic diarrhoea (PED)**

PED was first identified in European pigs in the early 1970s. The PED virus strains in Asia, especially Korea and China appear to be mutations of the European strains. PED virus strains were identified in the USA in 2013 and are more than 99% identical to the Chinese strain identified in 2010. The PED virus is similar to, but genetically distinct from, the TGE virus.
PED is characterised by severe enteritis (inflammation of the intestines), vomiting, watery diarrhoea and weight loss. Piglets < 3 weeks of age are most severely affected with high mortality.

**Classical swine fever (‘hog cholera’)**

Classical swine fever (CSF) is due to a pestivirus. CSF has occurred in Australia in the past, but it has been successfully eradicated on each occasion. All Australian outbreaks are suspected to be a result of feeding infected prohibited pig feed to pigs.

Signs of infection with CSF usually appear 5-10 days after exposure to the virus. In very acute cases, young pigs can die without showing any clinical signs. Acute cases can present with fever, lethargy, inappetence, conjunctivitis, constipation followed by diarrhoea, discoloration of the extremities, and nervous signs including a staggering gait. Many affected pigs die after being sick for 1-2 weeks. Chronic cases can present with wasting and diarrhoea. Reproductive issues may also be noticed, including abortions, mummified foetuses, weak and stillborn piglets, and persistently infected piglets.

**Aujeszky’s disease (‘pseudorabies’)**

The pig is the only natural host of Aujeszky’s disease virus. Infection can be inapparent or can result in clinical disease. Aujeszky’s disease virus can also infect ruminants, cats, dogs and rodents causing a fatal disease.

Clinical signs of Aujeszky’s disease in pigs vary with the viral strain, infectious dose, age and immune status of the pig. Infected newborn piglets usually die within 24-48 hours after birth. Fever, loss of appetite and nervous signs are commonly observed. Weaned pigs can also exhibit nervous signs, but to a lesser extent. Mortalities can reach 50% in recently weaned pigs. Sneezing, coughing, nasal discharge and breathing difficulties persisting for 5-10 days are common in older weaners. Mortality can reach 10% in these pigs, but most production losses are the result of poor performance and stunted growth. Respiratory disease affecting a large number of pigs with a low number of deaths is most common in grower and finisher pigs. Infected adult pigs may not show clinical signs. Reproductive consequences depend on the time of infection during pregnancy and include abortion, mummified foetuses, weak and stillborn piglets.

**Porcine reproductive and respiratory syndrome (PRRS)**

PRRS was first seen in the USA in 1987 and in 1990 a similar syndrome was reported in Europe. The European strain caused purpling of the extremities and the disease was initially named ‘blue ear disease’.

In the first weeks after introduction of the PRRS virus, clinical signs may be seen in all ages of pigs. Clinical signs in the breeding herd include inappetence, fever, lethargy and abortion. In piglets and weaner pigs, clinical signs may include respiratory distress (‘thumping’, mouth breathing), inappetence and lethargy. Reproductive losses are evident over the following 1-4 months where pre-weaning mortality may increase to 50-60% as a result of starvation, diarrhoea and fading.

**Nipah virus infection (NV)**

NV is a serious zoonotic disease (transmissible from animals to humans) and was first recognised in 1999 in farmed pigs and pig farmers in Malaysia. Other outbreaks have occurred since then in the human population, all in south-east Asia. Fruit bats are the natural host of NV, but infected bats show no clinical signs of disease.

NV is highly infectious in pigs and can cause severe disease resulting in significant economic losses for pig producers. Generally, mortality is low except in young piglets. In the Malaysian outbreak, affected pigs developed an acute illness with fever, coughing, laboured breathing and nervous signs including twitching, trembling and muscle spasms. These clinical signs are not dramatically different from other respiratory and neurological pig diseases. NV should be considered if pigs have an unusual ‘barking’ cough or there are human cases.
Japanese encephalitis (JE)

JE is a mosquito-borne viral disease, which is maintained in nature by transmission cycles involving *Culex* sp. mosquitoes, certain species of wild and domestic birds and pigs. Humans and horses may also become infected resulting in encephalitis and death in severe cases. Historically, there has been evidence of JE infection in humans and pigs in the Torres Strait islands, just north of Australia.

Adult non-pregnant sows show no obvious signs of infection. However, pregnant sows show evidence of reproductive failure including abortions and mummified foetuses or they may give birth to weak or stillborn piglets. Nervous signs are occasionally seen in pigs up to six months of age.

More information

For more information on notifiable diseases that affect pigs, refer to:
