

Recognising exotic diseases of pigs

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This Primefact provides information on clinical signs that might indicate the presence of an exotic or a new, emerging disease in pigs.

Clinical signs of exotic disease

Most people familiar with livestock are able to identify when an animal is sick. Most sick animals will lose their appetite, be reluctant to rise and may have a fever (in pigs $>39.5^{\circ}\text{C}$). If left untreated, these animals are likely to lose weight and die.

Pigs are considered 'high risk' for the introduction of exotic diseases through the illegal feeding of prohibited substances (swill, essentially meat and meat products, refer to Primefact 637

<http://www.dpi.nsw.gov.au/agriculture/livestock/pigs/husbandry/swill-feeding>).

It is important that pig owners are familiar with what they can and can't feed their animals. It is also crucial that they are able to identify and report any potential exotic diseases. General indications of an exotic disease include:

- unusually high number of sick animals
- unusually high number of deaths
- blisters or vesicles on animals' snout, or feet
- unusually high number of lame animals
- unusually high number of animals with fevers ($39-41^{\circ}\text{C}$)
- unusually high number of animals not eating
- unusually high number of animals that do not want to get up
- discoloration of the ears, belly, rump, legs, or tail

There are a number of exotic diseases that are 'notifiable' – that is, there is a legal obligation to report them as soon as they are noticed. Refer to Primefact 402

(<http://www.dpi.nsw.gov.au/agriculture/livestock/health/general/notifiable-animal-diseases-nsw>).

Clinical signs for a number of these notifiable exotic diseases are described below.

Vesicular diseases of pigs

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

Clinical signs

Clinical signs of vesicular diseases include fever and fluid-filled blisters (vesicles). Affected animals will salivate excessively and will most likely be lame. The skin covering the feet and the gums will have fluid-filled blisters and ulcers. These vesicles can form on the snout, nose, inside the mouth, on the tongue, at the coronary band, between the claws of the feet and on the heel bulb. Vesicles can also be observed at pressure points such as teats, shoulders and hocks.

Classic swine fever ('hog cholera')

Classic swine fever is due to a pestivirus. It has infected pigs in Australia in the past, with the last outbreak in 1961. It has been successfully eradicated on each occasion. All cases in Australia are thought to have been introduced through the feeding of prohibited substances to pigs.

Clinical signs

Signs of infection from swine fever usually appear 5 to 10 days after exposure. In very acute cases, young pigs can die without signs. Acute cases can present as lethargy, conjunctivitis, arched backs, drooping heads or tails, loss of appetite, fever, 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 may show wasting and diarrhoea. Reproductive problems may also be noticed.

Aujeszky's disease ('pseudorabies')

The pig is the only natural host for pseudorabies virus. Infection may be inapparent or can result in clinical disease. Pseudorabies virus can also infect ruminants, dogs, cats and rodents. The disease is lethal in these animals and is called 'mad itch' disease due to the classical severe itch which is observed following infection.

Clinical signs

Clinical signs of pseudorabies vary with the viral strain, infectious dose, and the age and immune status of the pig. Infected newborn pigs usually die within 24 to 48 hours after birth. Fever, loss of appetite and nervous signs are commonly observed. Weaner pigs can also exhibit nervous signs, but to a lesser extent. Mortality can reach 50% in recently weaned pigs. Pigs exhibit fever and loss of appetite 3-6 days after exposure. 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 proportion of animals with a low number of deaths is most common in grower and finisher pigs. Infected adult pigs may not show clinical signs. While recovery from clinical signs usually occurs within 10 days, secondary infections can prolong the disease period. Sows and boars can develop respiratory disease. Reproductive consequences depend on the stage of gestation during which infection occurs and include returns to oestrus, abortions, mummies, stillbirths, and weak born pigs.

Swine influenza (swine 'flu)

Swine influenza was first described in 1918 when it was responsible for an epizootic (epidemic outbreak of disease in animals) in swine and a pandemic in humans. Today swine influenza is endemic in many pork production units overseas. Prior to 2009, influenza had not been recorded in pigs in Australia.

Clinical signs

All ages of pig can become infected. In Australia, infections are likely to be transmitted from infected humans to pigs, so are more likely to occur in autumn and winter. Although human cases of swine influenza are rare today, swine influenza viruses may cause typical influenza symptoms in humans

and should be considered a possible occupational hazard.

A large proportion of pigs are likely to be affected, with low death rates in uncomplicated influenza outbreaks. Pigs on the same site but in different sheds can be affected simultaneously. The onset of disease is sudden. Feed intake is reduced and affected pigs are lethargic. They lie down and are reluctant to move. Pigs may pile on top of each other due to the fever. Nasal and ocular discharges are observed. A characteristic dry, hacking, 'goose-honk' cough is associated with movement. Open-mouthed, laboured abdominal breathing can be observed. Recovery usually occurs in 5-7 days, but can take longer if secondary infections are involved.

Porcine reproductive and respiratory syndrome ('PRRS')

Porcine Reproductive and Respiratory Syndrome (PRRS) was first seen in the United States in 1987 and was later given the name 'Mystery Swine Disease'. In 1990, a similar syndrome was reported in Europe. The European strain of the PRRS virus caused purpling of the extremities, and the disease was initially named 'Blue Ear Disease'.

Clinical signs

In the first weeks after infection, clinical signs of PRRS may be seen in pigs of all ages. Signs in the breeding herd include animals off-feed, fever, listlessness and abortion. In suckers and weaner pigs, signs may include respiratory distress ('thumping', mouth-breathing), being off-feed and listlessness. Pre-weaning mortality may increase to 50-60% from starvation/diarrhoea/fading. In the grower/finisher pigs, animals may be off-feed, have increased breathing rate, listlessness, fever and there may be some hyperexcitability when stimulated. These signs gradually abate after 6 to 8 weeks, with a gradual recovery in respiratory symptoms but an underlying poor reproductive performance in breeders.

Transmissible gastroenteritis ('TGE')

In naïve herds infected with TGE, all ages of pigs are affected. The virus is spread via faeces and in the air. Overseas, starlings have been implicated in spread of disease. The disease causes high death rates in sucker piglets.

Clinical signs

Acute outbreaks of TGE result in severe illness 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

among pigs under 3 weeks of age. Sows may also become sick, with clinical signs including diarrhoea, vomiting, loss of appetite and milk failure.

Porcine myocarditis ('PMC')

Porcine myocarditis first occurred in a large piggery in NSW in mid 2003. The disease was characterised by a decrease in the number of piglets born alive per litter, increased stillbirths and an increase in pre-weaning deaths (sudden death in apparently good pigs). Pigs older than 5 weeks were not affected.

At post-mortem, pigs had enlarged, dilated hearts and evidence of congestive heart failure.

A new pestivirus (Bungowannah virus) has been isolated and is thought to be the cause of PMC.

Nipah virus

Nipah virus is an emerging zoonotic virus (a virus transmitted to humans from animals). In infected people, Nipah virus causes severe illness characterised by inflammation of the brain (encephalitis) or respiratory diseases. It can also cause severe disease in animals such as pigs, resulting in significant economic losses for producers.

Nipah virus was first recognised in 1999 in pig farmers in Malaysia. Other outbreaks have occurred since this time, all in South Asia. Fruit bats are the natural hosts of Nipah virus, but infected bats show no clinical signs of disease.

Clinical signs

Nipah outbreaks in pigs and other domestic animals (horses, goats, sheep, cats and dogs) were first reported during the initial Malaysian outbreak in 1999. Many pigs had no symptoms, but others developed acute feverish illness, laboured breathing, and neurological symptoms such as trembling, twitching and muscle spasms. Generally, mortality was low except in young piglets.

These symptoms are not dramatically different from other respiratory and neurological illnesses of pigs. Nipah should be suspected if pigs also have an unusual barking cough or if human cases of encephalitis are present.

Nipah virus is highly contagious in pigs. Pigs are infectious during the incubation period, which lasts from 4 to 14 days.

Japanese encephalitis virus

Japanese encephalitis is a mosquito-borne viral disease that infects water birds and pigs. Humans and horses may become infected, resulting in severe inflammation of the brain, and death. There is evidence of infection in animals and humans in the Torres Strait islands, just north of Australia. In tropical areas, the virus often circulates continuously between mosquitoes, birds and pigs.

Clinical signs

Adult non-pregnant pigs show no obvious signs of infection. However, pregnant sows show evidence of reproductive failure, including abortions or mummified piglets, or they may give birth to stillborn or weak piglets at term.

Central nervous signs are occasionally seen in pigs up to six months of age.

Reporting suspect exotic diseases

Should you suspect an exotic disease in your pigs, phone a veterinarian or the Disease Watch Hotline on 1800 675 888.

For further information about exotic diseases of pigs, please contact:

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