Pseudorabies (Aujeszky's Disease)

Pseudorabies is a viral disease affecting swine primarily; the virus is not a risk to either human health or food safety.

Virology

Pseudorabies, also known as Aujeszky's disease, is caused by Suid herpesvirus 1 (SHV-1), an enveloped virus that is a member of the subfamily Alphaherpesvirinae and the family Herpesviridae. Isolates vary in virulence and pathogenicity. Studies have demonstrated that the virus can survive for up to 7 hr in nonchlorinated well water; for 2 days in anaerobic lagoon effluent and in green grass, soil, feces, and shelled corn; for 3 days in nasal washings on plastic and pelleted hog feed; and for 4 days in straw bedding. Among domestic animals, swine are the only natural host of the virus.

In 1989, the US began a program to eradicate the pseudorabies virus (PRV); eradication of PRV from the commercial industry was achieved in 2004 but remains in some localized feral swine populations. Pseudorabies has been reported in most countries, with the exception of Canada, Greenland, Australia and any African country.

Clinical Signs

Swine show different signs of the virus depending on age, with the youngest animals being the most severely affected:

Neonates/suckling pigs: In very young pigs, the only sign may be an inability to move or stand up; they may sit like dogs due to posterior paralysis. Slightly older piglets may have a fever, loss of appetite, vomiting and nervous system signs such as incoordination, drowsiness, muscle twitching, convulsions and paralysis. Mortality in suckling pigs is close to 100 per cent.

Weaner pigs: The mortality rate is lower (five to 10 per cent). The clinical signs may resemble those in suckling pigs but respiratory signs including coughing, sneezing and laboured breathing, are more prominent.

Grower and finisher pigs: Respiratory disease is the most common sign. Mortality rates are low (one to two per cent).

Adult pigs: Infection in adult pigs is often mild or unapparent. Gilts and sows may have reproductive problems, such as early embryonic mortality, abortion, mummified fetuses, stillbirths or they could give birth to weak and trembling pigs who quickly die.

Infections in species other than pigs are almost always fatal. Symptoms may include intense itching, scratching and self mutilation, an inability to rise, incoordination, paralysis and rapid death.

Epidemiology of Transmission

Pseudorabies is highly contagious in pigs and the disease will spread rapidly throughout an entire herd. The virus is spread mainly via the respiratory route and nose-to-nose contact. Piglets can become infected in utero and through milk from an infected sow.

Pseudorabies is a herpes virus; once an animal is infected, it remains infected for life and it may not demonstrate any signs of disease even though it is shedding the virus.

Transmission can also occur by contaminated drinking water, coming in contact with contaminated fomites (ie clothing, footwear, or equipment), especially in cool, damp weather which helps virus survival. There is evidence of airborne transmission.

Treatment and Control

Pseudorabies is currently considered a Foreign Animal Disease (FAD) in Canada and the US. In countries where the disease remains endemic, it may be possible to prevent exposure of a negative herd to PRV through strict quarantine and isolation procedures. Cats, dogs, rats, mice and all wildlife should be prevented from coming into contact with swine.

The stability of Pseudorabies in the environment makes it important to properly disinfect contaminated areas. The virus is easily inactivated by most commonly approved EPA and Health Canada registered disinfectants. There is no effective treatment for PRV-infected swine, but weaned and older swine often recover. However, vaccination can alleviate clinical signs in pigs of certain ages. Typically, mass vaccination of all pigs on the farm with a modified-live virus vaccine is recommended. Intranasal vaccination of sows and neonatal piglets 1–7 days old, followed by IM vaccination of all other swine on the premises, helps reduce viral shedding and improve survival.

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