

Porcine Epidemic Diarrhea (PED)

Porcine Epidemic Diarrhea (PED) is a production-limiting disease affecting swine, and does not impact food safety or human health.

Virology

PED virus is an enveloped RNA virus that belongs to the *Alphacoronavirus* genus of the *Coronaviridae* family. It does not demonstrate cross-immunity with other porcine enteric coronaviruses such as transmissible gastroenteritis (TGE) virus. Pigs are the only known hosts.

Clinical Signs

The virus causes severe diarrhea in young piglets. The clinical signs are dependent on the age of the pigs, previous exposure to the virus and the immunological status of the pigs, presence of secondary infection, etc.

Signs of PED virus infection in a swine herd:

- Morbidity: up to 100%,
- Mortality varying according to age:
 - Suckling pigs: up to 100%
 - Piglets older than 10 days: less than 10%
 - Market hogs, sows and boars: less than 5%
- Diarrhea and vomiting
- Dehydration and Death

Epidemiology of Transmission

PED was first reported in the United Kingdom in 1971 and has since then been identified in several European countries, large parts of Asia and the Americas; it was first seen in North America in 2013.

The virus is spread through the fecal/oral route directly via contact with infected manure or through indirect contact with contaminated fomites (equipment, humans, etc.) and or environmental surfaces. The most common materials or items that can be contaminated by feces from infected pigs include transport vehicles, footwear, clothing, feed and feed trucks. The virus survives well in cold weather.

Basic Prevention

Strict biosecurity is the most effective measure to prevent the introduction and spread of the PED virus. Introducing pigs of known health status; on-farm movement control of pigs, material and people; disinfection of vehicles, equipment and; appropriate disposal of dead pigs and manure are all important components of prevention and control.

The virus is easily inactivated by most commonly approved EPA and Health Canada registered disinfectants. Several disinfectants have been demonstrated to effectively inactivate PEDV, including: Accelerated Hydrogen Peroxide, Oxidizing Agents, Lipid Solvents, Strong Iodophors in Phosphoric Acid, Phenolic Compounds and Aldehydes.

Treatment and Control

There is no specific treatment other than symptomatic treatment of diarrhea and control of secondary infections. Most growing pigs recover without treatment within 7-10 days unless secondary infections occur.

The implementation and maintenance of high biosecurity programs has been efficient to control PED. Contaminated vehicles used for the movement of pigs have been identified as an important risk factor for spreading the disease. Following proper protocols for cleaning and disinfection is critical in stopping the spread of the virus.

References

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