

PEDv

PEDv (Porcine Epidemic Diarrhoea) is caused by a virus that is in the same main family as that which causes TGE (Transmissible Gastroenteritis). PEDv was previously reported in the UK in 1972, however the severe problems in North America have been related to a new strain that originated in the Far East and is much more severe.

The new strain of PEDv has been circulating in China, Thailand and Vietnam since around 2010. It was first diagnosed in the US in May 2013, and has now spread to 29 US States, Canada and Mexico. It has not been confirmed how the virus entered the US. No cases have yet been reported in Europe, and there is a currently (as of June 2014) a voluntary ban on the import of live pigs from North America.

There appears to be little cross protection between pigs affected with the old PED virus and the new strain, meaning that there are a lot of pigs that could be susceptible should disease break out over here.

Disease spreads rapidly between farms and within them. PEDv is highly virulent, meaning that only a very small amount of the virus is needed to cause clinical disease on farm. It is spread through infected faeces, along with contaminated vehicles, equipment and persons. It can also be spread by pig movement, and has been found in pig blood plasma products used in some early weaner diets and milk replacers. Semen has currently been proved to be free from the virus, although there is a small potential risk of contamination from the environment during collection and processing.

Research is currently being validated to ascertain whether aerosol spread is possible.

Clinical Signs

The old PED virus had a much lower impact on farm, with minor scour hitting young pigs, it spread slowly between pigs and farms.

The new strain causes a much higher mortality, with over 90% pre-weaning mortality seen when the disease first enters a farm. Clinical signs are seen within 2-4 days from when the pigs have become infected. Disease is most severe in younger animals, with affected piglets showing an acute scour, becoming severely dehydrated and lethargic, and occasionally they will vomit. Early reports indicate that up to five weeks production can be lost after the first outbreak of disease on a unit. Due to the damage to the intestines, absorption of nutrients from food is poor, leading to an ongoing effect on growth.

Older animals are also affected but to a lesser extent and can show some scour and have increased mortality. Background endemic diseases that are normally present on farm can flare and will present as more severe. Within 12-36 hours of infection, sows have been shown to exhibit diarrhoea and vomiting.

Diagnosis

As soon as it is suspected, early diagnosis of PEDv is essential in order to help prevent spread of the disease.

Diagnostic tests have been dramatically revised in the US in light of the new strain, with any suspected outbreak submitting affected piglets for full post mortem and testing. PEDv is currently diagnosed using a PCR test and also histopathology (examination of tissue under a microscope). These tests are carried out on intestines and faeces, while oral fluid tests are also being developed to enable rapid results – early indicators show that oral fluids remain PEDv positive for testing for up to 6 weeks after infection.

Treatment, Control and Prevention

Once clinical disease is seen on farm, the treatment and control of the infection is very difficult. As the disease is caused by a virus, antibiotics are not effective against the primary infection although, particularly in older animals where secondary clinical disease is also seen, antibiotics may help depending on what bacterial pathogens are present on your farm.

There are commercial vaccines available in Asia, but these have been shown to not be effective against the new strain of disease. In the US, autogenous vaccines (vaccines made specifically for the farm) are being trialled, but so far the results from this have been poor.

Transferred immunity to the piglets through milk appears to be short lived or not very strong. Some control is obtained by use of an on farm 'feedback' or 'controlled exposure' method to the virus to build up herd immunity. There are many pitfalls with this however, and certain aspects used abroad are currently illegal in the UK.

The virus is found in plasma-products, some of which are used in young pig diets used around the World. They do pose a significant potential risk to your pigs and should be excluded from your farm – the use of any plasma containing diets is currently not allowed under the Red Tractor Assurance Scheme.

Biosecurity is exceedingly important. Although the virus is not yet present within Europe, constant vigilance for any clinical signs is paramount. Biosecurity practices should be reviewed, including for incoming pigs, people, feed, all vehicles and deliveries. Lorry washing protocols should be tight and the farm perimeter should be checked both with regards to fencing and wash down procedures for the loading ramp.

Laboratory testing has shown PEDv is very sensitive to drying and disinfection, meaning that cleaning and resting of buildings and vehicles are very effective at removing the virus and assisting depopulation programmes within pig pyramids.

Please speak to your Vet to discuss any questions you may have about PED