International Pig Topics

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Enteroviruses

Introduction

Porcine enteroviruses are ubiquitous and present in all herds. The majority of infections are symptomless but in other instances they have been associated with various conditions including polioencephalomyelitis, female reproductive disorders, enteric disease and pneumonia.

The first porcine enterovirus related disease to be noted was Teschen disease, a polioencephalomyelitis with high mortality that was seen in central Europe 60 years ago. The relationship between enterovirus and reproductive and respiratory disorders is less clearly understood.

Aetiology

Enteroviruses are single-stranded ribonucleic acid viruses that are highly resistant to the environment and relatively resistant to common disinfectants. Teschen virus can survive six months at 15°C and for relatively long periods in slurry. Porcine enteroviruses are divided into about a dozen serogroups and pigs are susceptible to infection with an enterovirus which they have not previously exposed to.

Clinical signs

Severe polioencephalomyelitis (Teschen disease) is characterised by high mortality. Early signs include fever, anorexia and listlessness followed by ataxia. In severe cases nystagmus, convulsions, opisthotonus and coma are seen. Death occurs within 3-4 days of first clinical signs being seen. SMEDI (Stillbirths, Mummified foetuses, Embryonic Deaths and Infertility) viruses were subsequently shown to be enteroviruses.

The role of enteroviruses in diarrhoea is unclear but they have been shown to produce a mild and transient diarrhoea in pigs free from other enteric pathogens. When pigs are infected with reovirus and rotavirus the resulting disease is more than the disease produced by either virus on its own.

The role of enteroviruses in respiratory disease is also uncertain, but at least two serogroups have been shown to produce pericarditis, while pneumonia is invariably subclinical.

Pathology, diagnosis and prevention

No specific intestinal lesions have been reported. In Teschen disease a polioencephalomyelitis is seen. One virus strain produces pericarditis experimentally.

Clinical signs associated with polioencephalomyelitis are suggestive of a viral infection but differentiation from other viral causes requires virus isolation.

Treatment is not possible so control centres on prevention. Teschen disease vaccines are available. Exposing gilts to infected material at least a month before breeding can be practised.