

## 83 – Porcine parvovirus I

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## Introduction

Porcine parvovirus was first isolated in Germany in 1965 as a contaminant in porcine cells used for the multiplication of swine fever virus in the laboratory. Several years later this virus was shown to be linked with reproductive problems and to have a worldwide distribution.

Porcine parvovirus causes stillbirths, mummifications, embryonic deaths and infertility, hence, many people refer to it as the SMEDI virus. It is a major cause of reproductive losses around the world.

## Epidemiology

Porcine parvovirus readily replicates in susceptible pigs although of course the problem of reproductive losses only occurs in pregnant females. Infected pigs shed the virus in their faeces and bodily secretions. This virus can survive for months in the environment and this can be a constant source of infection for susceptible animals. The virus can also easily be carried between herds on fomites. Infected boars can bring the virus into herds, as can semen for AI.

## The disease

The clinical picture arises because of the ability of porcine parvovirus to infect the foetus. The high multiplication rate of most of the foetal cells provides the perfect environment in which the virus can multiply.

Different biotypes of porcine parvovirus have marked differences in their pathogenicities – some are completely non-pathogenic, whereas others can cause disease in immunological foetuses, that is, after the 70th day of gestation.

The pathogenicity of porcine parvovirus is also influenced by the presence of other viruses. In the presence of porcine circovirus type 2 it increases the severity of PMWS lesions but the co-infection is not necessary for the actual development of PMWS.

## Clinical signs

Reproductive failure in the female is the only sign of porcine parvovirus infection. Such reproductive losses are low in vaccinated herds but this virus can cause serious abortion storms where there is no immunity.

The reproductive signs correlate to the stage of gestation at which infection occurs. Foetal death and resorption at days 12-35 and death and mummification at days 35-70. After day 70 foetal infection is subclinical and piglets are born with anti-porcine parvovirus antibodies. The frequency of reproductive losses is often difficult to assess because the evidence of infection occurs weeks after the infection took place.

## Serology

The use of serum antibody titers to detect porcine parvovirus is complicated by the use of inactivated vaccines. Various surveys around the world have shown porcine parvoviruses to be present in 70-100% of herds.

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