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## Introduction

Blue eye disease is caused by the blue eye paramyxovirus or porcine rubulavirus. The disease was first seen in Mexico in 1980 when outbreaks of encephalitis with corneal opacity (hence the name) were seen. The first reported outbreak of this disease was on a 2,500 sow farm. The disease then became widespread in central Mexico, but in recent years its importance has declined. Blue eye disease is not seen outside Mexico.

## The causal virus

Blue eye paramyxovirus or porcine rubulavirus is a paramyxovirus and, unlike some other paramyxoviruses, this virus has no public health significance.

## The disease

Infected pigs are the primary source of infection and transmission is by nose to nose contact. Transmission can occur via urine or semen and this virus can be spread on fomites. In closed herds this infection is self-limiting. Infection is acquired by inhalation and the initial site of virus replication is the nasal mucosa and tonsils from where the virus spreads to the brain via the trigeminal and olfactory nerves, to the lungs via inhalation and to other organs via the blood (viraemia). Nervous signs appear quickly in piglets (1-3 days) but take longer in older pigs, for example, about 11 days in weaners. Reproductive failures are seen in pregnant sows. Intranasal infection of young boars results in an epididymitis and testicular oedema.

## Clinical signs

Blue eye disease can break out in any section of the farm but is often first seen in the farrowing accommodation. A significant mortality spike occurs. Healthy piglets suddenly become prostrate in lateral recumbency or show nervous signs. Typically the disease starts with a fever and an arched back. This is sometimes accompanied by constipation or diarrhoea. Nervous signs include ataxia, rigidity of hind legs, muscle tremors and abnormal positions such as sitting. Some show an apparent blindness. Death typically occurs 4-9 days after first clinical signs. Older pigs show milder, more transient clinical signs. In sows reproductive failures are seen and these include increasing 'returns', reduced farrowing rate, increased stillbirths, increased mummies and an increase in non-productive sow days.

## Diagnosis

Encephalitis, corneal opacity, reproductive failures and orchitis and epididymitis are all typically seen in blue eye disease. Disease confirmation is by blood test.

## Treatment

There is no specific treatment for blue eye disease and pigs with just corneal opacity often recover. The disease can be removed from a farm by herd closure, cleaning and disinfection and switching to all-in, all-out production.