

Rotavirus

Infection of piglets, usually in the first week of life, with Rotavirus can cause diarrhoea, septicaemia and death.

The virus is widespread in pig populations. Three of the four different strains of the Rotavirus are capable of causing disease in piglets. Once a piglet has been infected with one strain, it builds up an immunity to it. The Rotavirus strains are different however, and so immunity to one strain does not give immunity to another. This means clinical disease can re-occur.

Up to 30% of sows excrete Rotavirus in their faeces during the farrowing period and so piglets can become infected through this route. Piglets can also become infected from the environment, with the virus surviving particularly well in warm moist conditions. In a litter, clinical signs can start in one or two piglets before spreading throughout the litter. Infection is then transmitted to other groups of pigs by carrier pigs (pigs not showing clinical signs), by people, equipment or rodents. It can persist in farrowing pens where cleaning and disinfection is inadequate.

Clinical Signs

The function of the small intestine is to absorb nutrients from the food as it passes through from the stomach. In order to increase the available surface area so that more nutrients can be absorbed, the gut lining has many finger-like projections called villi.

Rotavirus damages the gut lining by shrinking these villi, so decreasing the surface area of the small intestine. As food passes through the small intestine therefore, fewer nutrients are absorbed. The upper small intestine is where the majority of milk digestion occurs, and damage to this area can cause piglets to become intolerant to milk. Undigested food passes from the small intestine through to the large intestine, causing two effects: firstly the undigested food allows bacterial multiplication in the large intestine; secondly, since the function of the large intestine is to absorb water, the undigested food prevents water absorption, giving a combined effect of diarrhoea.

Piglets affected by Rotavirus show a pasty to watery scour. The piglet becomes anorexic and loses weight rapidly, which is also due to dehydration. Clinical signs can persist for 7-14 days.

Mortality is very variable. Secondary bacterial infection can occur resulting in a toxemia (the presence of bacterial toxins in the blood), and dehydration can be severe, resulting in weak piglets that may be overlaid or crushed.

Diagnosis

Rotavirus can sometimes be found in faeces without any clinical problems on farm occurring, so to diagnose it as a cause of scour, a fresh section of intestine needs to be tested to demonstrate damage caused by the virus.

The intestine starts to auto-digest 10 minutes after death, so it may be required that a live clinically ill pig needs to be submitted to the laboratory. Investigation into the presence of secondary bacterial infections would also be advised.

Treatment & Control

Antibiotics can be used to control secondary bacterial infections, whilst the piglet develops its own immunity to the primary rotaviral infection. Which antibiotic is most suitable will depend on the infectious agents on your farm.

Individual supportive therapy is beneficial whilst the piglet recovers and develops its own immunity. Electrolytes provide both protein and glucose (energy), and maintains hydration. These must be administered at the correct dilution rate to have most benefit.

There is no effective vaccine available for pigs. Control is based on hygiene and trying to raise sow immunity so that there is a better transfer of antibodies in the colostrum. Farrowing houses should be run all in, all out. After a batch, the farrowing house should be thoroughly cleaned and disinfected. The virus survives well in warm moist conditions, but is vulnerable to both drying and many disinfectants. Ensure feed and water spillages do not allow the pen to become wet and dirty, and remove sow faeces (a potential source of infection) from the pens as frequently as possible.

To improve the breeding herd's immunity, feedback of the Rotavirus to the sows before farrowing may be advised – you must consult your vet before attempting this. Pigs pass many different infectious agents in their muck and so this method may not be suitable on your farm.

The most common secondary infection is *E. coli* so, if appropriate, ensure correct vaccination of the breeding herd to protect against this potential issue.

Please speak to your Vet to discuss any questions you may have about Rotavirus on your farm.

