



Absolute Swine

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## Pathogenesis of swine dysentery

*Brachyspira hyodysenteriae*, the causal agent of swine dysentery, infects pigs following their ingestion of faecal material. The organism survives the stomach's acidity and passes through the small intestine to reach the large intestine which it colonises. Lesions develop and *B. hyodysenteriae* appear in the faeces 1-4 days before scouring starts.

Scouring appears to result from a colonic malabsorption and a failure of the epithelial transport mechanisms for sodium and chloride ions and not from enterotoxins and/or prostaglandins released from the damaged and inflamed mucosa. Subsequent invasion of the mucosa by secondary bacteria and the protozoan *Balantidium coli* may contribute to the lesions.

Diet influences the manifestation of swine dysentery and protective mechanisms may involve changes in colonic microbiota with an increase in those species which inhibit *B. hyodysenteriae*. Conversely, some anaerobic bacteria facilitate *B. hyodysenteriae* colonisation.

## Clinical signs

Swine dysentery mainly occurs in growers and finishers weeks after they have left nursery accommodation and often coincides with a dietary change and the withdrawal of antibiotics being used to control respiratory disease.

The incubation period for this disease is variable (two days – three months but typically just under two weeks).

The first signs of swine dysentery are usually soft yellowish to greyish faeces accompanied by a mild anorexia and a rise in body temperature to 40.0-40.5°C. A few hours later large amounts of mucus and often flecks of blood are seen in the faeces, which then become more fluid and contain mucus, blood and shreds of white muco-fibrinous exudate. Most pigs recover over several weeks but they remain slow growers. Some have a prolonged period of scour and become weak and emaciated. Occasionally a peracute swine dysentery occurs which kills within hours.

In outbreaks of swine dysentery morbidity in weaners can reach 90% with a 30% mortality rate without treatment.

On endemically infected farms swine dysentery can cycle every 3-4 weeks. When in feed antibiotic is used any depression in feed intake can stimulate a re-emergence of swine dysentery