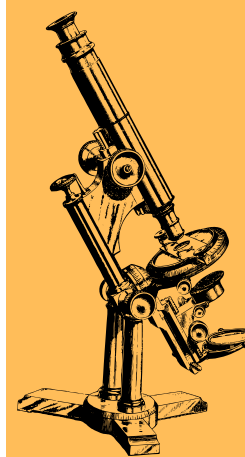


ALL ABOUT SWINE DYSENTERY



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Why you should care



The food we eat

Pork is the most widely eaten meat, making up about 36% of meat consumption worldwide (7) through foods such as bacon, pork ribs, lard, and sausage.



The products we use

Other products from pigs made for non-food uses include suede for clothing, skin for leather goods, and gelatin for drug capsules.



Human health

Swine are one of many animals used in organ transplantation research to better improve surgical procedures and develop new transplant medications (8).



World agriculture

B. hydrodysenteriae was identified in pigs in Hong Kong, China, for the first time (9), which may influence swine trade regulations between countries. The emergence of more sensitive antibiotic strains (10) also raises concerns about SD treatment, as this rise may limit the number of effective antibiotics available for use.

What is swine dysentery?

Swine dysentery (SD) is an infectious disease seen only in swine, or pigs. Pigs with SD have bloody diarrhea and inflammation to the large intestine, or colon (1).

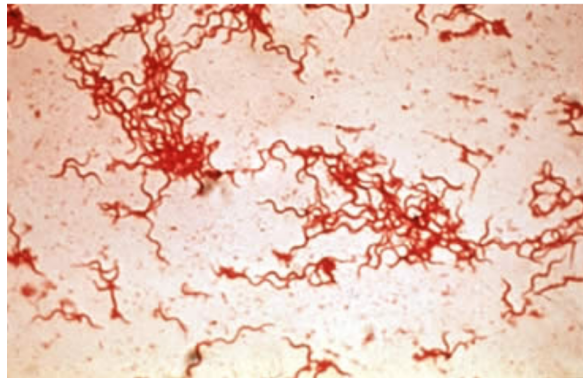


Top: Healthy piglets (Herrold 2019).
Bottom: 7 week piglets with SDF (Burrough 2017). Note the blood stains on the anus and hind legs caused by the blood in the feces.

A common first sign of SD is bloody, watery feces. The anus area becomes blood stained as a result. Pigs may also become dehydrated due to large amounts of water loss (2).

What causes SD?

SD is caused by *Brachyspira hyodysenteriae*, a disease-causing spiral shaped bacterium. However, not all the different types, or strains, of this bacteria will cause SD. This bacterium can also spread to pigs by mice (3).



Merck Veterinary Manual, photo by Joann Kinyon from Iowa State University.

What exactly happens in the pig's colon?

- Research suggests (4) *B. hydrodysenteriae* causes blood in the feces by:
 - preventing blood from clotting
 - increasing blood flow through vessels
 - preventing damaged cells in the colon from repairing
- The number of B cells also decreases after infection (4). B cells help fight harmful bacteria in many animals, including humans (5). In infected pigs, the colon skin cells die at a faster rate as the pig has an impaired defense response, which may lead to inflammation of the colon.

Complications

If left untreated, the mortality rate of infected pigs can reach 50%. This can cause pig farms to lose large amounts of money (2).

How to know it is SD

Looking at colon tissue or feces samples underneath a microscope may help identify *B. hyodysenteriae*. Color stains can be applied to these body samples for accurate identification. A test known as the polymerase chain reaction (PCR) can also be done to confirm the identity of the bacterium (2) by creating many copies of its DNA.

Prevention & Treatment

Prevention may checking imported pigs for SD and maintaining clean housing conditions (6). No vaccine is currently available for SD (3).

Treatment includes (6):

- isolating infected pigs
- disinfecting housing areas
- using antibiotics only when necessary
- changing the herd diet, such as adding probiotics

