



STREPTOCOCCUS SUIS

Pathology description

Streptococcus suis is a streptococcal bacterium which has a distinctive boat shape, possesses a capsule to resist phagocytosis (digestion by white cells in the body) and a toxin. *S. suis* is sensitive to a wide range of antimicrobials and farm disinfectants but survives 512 days on the tonsils in carrier animals and 25 days at 9°C in dust. *S. suis* infects pigs at or shortly after birth from the sow or by aerosol or contact within 5-25 days of mixing with carrier animals. It multiplies in the tonsillar crypts, is taken up by white blood cells and is distributed in the blood to the brain and joints. It can cause septicaemia within a few hours which may kill the animal or cause meningitis which is frequently fatal. Arthritis also occurs.

Symptoms

Serotype 1 causes disease in piglets of 10-14 days of age. Affected animals cease to thrive, become rough-coated, develop fever (40.6-41.1°C, 105-106°F) and may die. Enlarged, hot, painful swollen joints develop later or animals become stiff, bind or show muscular tremors ending in ataxia or death. Sudden death may occur in endocarditis due to streptococcal infection. Typically, up to two thirds of the litter develops some form of the disease.

Serotype 2 causes disease in pigs aged 3-12 weeks or more with an incubation period of 24 hours to 2 weeks. Outbreaks often begin with the death of a pig in a good condition. Fever of 40.6-41.7°C, 105-107°F and flushing of the skin may occur in live pigs. Nervous signs such as incoordination, tremor, paralysis, paddling, opisthotonus and tetanic spasms develop in that order. Death can occur within 4 hours of the onset of the clinical signs. Animals developing meningitis have a glassy stare, flushed skin and unsteady gait. Head tilt is sometimes present. Arthritis may occur in younger pigs and occasionally in gilts and sows. Bronchopneumonia may occur. Mortality varies from 1-50% in any batch of pigs and in herds with enzootic infection may be 0.5% with 1% morbidity.

Costs of the disease

- Increased feed cost
- Mortality
- Less weight gain

Vectors

S. suis can be transmitted between pigs by direct contact, aerosols, fomites and possibly ingestion. *S. suis* can survive for a period of time in feces, dust and carcasses, particularly under moist, cool conditions. It has been reported to survive in pig feces for a week, decomposing carcasses for almost 2 weeks, and on flies for up to 5 days. Most human infections are thought to occur through cuts and abrasions in the skin and by handling infected meat.

- **Environment**

Initial exposure takes place when pigs are placed on a site that has been contaminated with *S. hyodysenteriae* (The bacteria can survive up to 2 months in feces). *S. hyodysenteriae* can be spread between sites by contaminated boots, trucks, rats, mice or flies.

- **Material**

Contaminated equipment

- **Animal**

Most clinically healthy pigs are carriers of multiple serotypes of *S. suis*. Pigs can be infected either during birth by passing through the birth canal of an infected sow and *S. suis* entering the umbilical cord or by pig to pig transmission through cuts caused by fighting or dirty processing equipment. There may also be simple respiratory transmission from pig to pig in the farrowing house and nursery.

- **Feed and drinking water**

S. hyodysenteriae is spread between the pigs by the consumption of food or drinking water contaminated by faeces containing *S. hyodysenteriae*.

- **Working method**

Insufficient cleaning and disinfecting of the barns.

Overcrowding

→ MAIN VECTOR: The infected pig

Preventive action

- Hygiene: cleaning and disinfecting of barn, let dry before new animals are entering
- Rodent and insect control
- Keep pens as dry as possible and in particular those areas of the floor where the piglets defecate.
- All-in-all-out principle

Controlling action

- Affected pigs should be treated by injection with antimicrobial for 3-5 days. Administration of these drugs must happen under the advice of your veterinarian.
- Penicillin is the drug of choice although amoxicillin, ampicillin, cephalosporins, trimethoprim sulphonamide and other antimicrobials can be used but not aminoglycosides or the tetracyclines.
- Affected pigs should be removed to a quiet pen and given water and food, manually if necessary.
- Paralysed animals should be rehydrated using saline given per rectum. Animals with advanced septicaemia, meningitis and arthritis rarely respond and all cases should be re-assessed 3 days after the onset of treatment.
- Paralysed animals should be killed humanely.
- Pigs in the same pen as affected animals should be treated in feed or in water

Advised Protocols

For every possible vector, a hygiene protocol must be implemented. See these Specific Purpose Protocol:



HOUSING
HYGIENE



PERSONAL
HYGIENE



TRANSPORT