SALMONELLA ON PIG FARM

Pathology description

Salmonellosis is a bacterial disease caused by strains of Salmonella. It occurs in animals and humans. In both cases it is an enteric disease of varying severity, usually involving diarrhoea. With pigs, however, most Salmonella infections are without symptoms. Salmonella infection is a Public Health Concern. Many strains of Salmonella are zoonotic agents, spreading to man from contaminated animal origin food products. In humans Salmonellosis is one of the most common causes of food poisoning. The commonest serotypes causing disease in humans are Salmonella Enteritidis and Salmonella Typhimurium. National control measures, often including legislation, have been implemented in many countries. In the European Union the Zoonoses Directive (EC/2003/2160) was enacted in 2003 to minimize Salmonella infection in pigs.

Costs of the disease

- Treatment with antimicrobials
- Culling

Vectors

- **Environment**
  The animal house can be contaminated by *Salmonella*.
- **Material**
  All equipment used are high risk items.
- **Animal**
  The main source of infection is the pigs themselves. Piglets may be infected with Salmonella via contaminated sows. Effective measures should be taken to ensure pig houses are not infested by vertebrate or invertebrate pests.
- **Feed and drinking water**
  Raw materials presenting a high risk of contamination with salmonella must be excluded. Heat or other effective anti-salmonella treatment should be used in manufacture.
- **Working method**
  Insufficient cleaning
- **People**
  Farm staff and visitors should be encouraged to understand and practice hygiene and security standards.

➔ MAIN VECTOR: contaminated pigs

Preventive action

Preventive action will control the routes by which Salmonella can enter the unit. Effective prevention means reducing the risk of disease occurring in, or spreading to other animals and can be achieved through a number of practices.

- **Incoming stock**: Incoming stock represents a significant risk to the pig herd due to the risk of Salmonella transmission between pigs. Ideally stock should be sourced from a Salmonella-free unit and producers should be aware of the status of their source unit.
- **People** have the potential to introduce Salmonella into herds from outside the farm and for causing cross-contamination within the farm. It is important to have a comprehensive and well thought out biosecurity policy that all staff understand and adhere to without prompting.

- **Incoming vehicles**: vehicles that visit other pig units should be kept off-site wherever possible.
- **Equipment**: should be kept clean and disinfected to reduce the risk of spreading Salmonella.
- **Wild birds and vermin** are known carriers of Salmonella and are a potential source of infection. Anything that can be done to reduce their numbers, for example by removing their shelter and food supply, will help lower the quantity of infection arriving on the unit.
- **Cats and dogs**: may help control the population of mice and rats but they are also a potential source of Salmonella infection. Direct contact with pigs should be avoided and cats and dogs should be kept out of feed hoppers and grain and feed stores to prevent faeces and urine contaminating the feed.
- **Work practices**: There is a risk of staff bringing Salmonella onto the unit and of them transmitting it around the unit. To avoid spreading Salmonella within the farm, staff should understand the work practices most likely to spread the infection so that effective counter measures can be taken.

- **All-in, all-out production systems**: provide the opportunity to reduce the risk of cross-contamination between pigs and lower the levels of residual infection on the farm.
- **Sick or hospital pens**, together with 'slow stream' pens, represent potentially the highest risk of infection on the whole farm. Sick and recovering pigs are more likely to carry and excrete Salmonella and can infect otherwise healthy pigs, therefore hygienic sick pen management is essential.
- **Cleaning techniques:** Cleaning, prior to the disinfection stage, has to be thorough if Salmonella control has to be effective.
- **Disinfectant use:** It is important to use disinfectant that has a proven efficacy against Salmonella.
- **Feed and water systems** *Salmonella* can be spread in feed and water systems; therefore it is important to include these in the cleaning program. Residual contamination of feeders is an important source of infection for incoming pigs and they must be emptied, washed, drained and dried. Drinking systems also carry a risk of infection and need to be regularly flushed out and disinfected.

- **Acidification of feed/water**: the use of organic acids, such as formic, acetic, propionic and lactic acid, can inhibit *Salmonella*. They act by reducing the pH of the gut, creating an unfavorable environment for the organism. The use of organic acids in feed and water may benefit overall pig performance through improved gut health.

Controlling action

Effective Salmonella control on the farm is based on preventing the introduction of Salmonella onto a farm and preventing its spread.

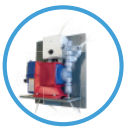
Advised Protocols

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

HOUSING HYGIENE

PERSONAL HYGIENE

TRANSPORT



WATER HYGIENE

ACIDIFICATION