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27 – Foot and mouth disease II

Disease transmission

In the field, direct or indirect contact with other animals is the way by which pigs normally become infected with foot and mouth disease virus. They can also become infected by the consumption of foot and mouth disease virus infected waste food products. Hence, controls on the feeding of swill to pigs are important.

When animals are close to infected animals the virus can transfer to them via aerosols and contaminated secretions. The most common route of entry is the respiratory tract. The skin is a good barrier against infection but, in pigs, entry via skin abrasions caused by rough concrete floors or fighting has been known.

Disease can spread from farm to farm via contaminated people, equipment or vehicles.

Many factors influence the airborne spread of foot and disease virus by aerosols, but for pigs airborne spread beyond 200m is unlikely. However, if conditions are right the distance of spread can be up to 20km for cattle.

Animals can shed virus for some time, especially via saliva, nasal and lachrymal fluids, milk, semen and respiratory exhalations, before they show clinical signs. However, in pigs the peak of virus excretion is after the appearance of clinical signs.

Although ruminants can become carriers of foot and mouth disease virus after infection, pigs do not become carriers of the virus and do not carry infectious virus for more than four weeks.

Persistence in the environment

Foot and mouth disease virus can remain infectious in the environment for weeks but often there may not be enough to infect pigs with. There are reports of foot and mouth disease virus remaining on hay for five months and in slurry in winter for six months.

Most foot and mouth disease virus strains are only stable at lower temperatures and at pH 7-8. In cattle carcases the acidity produced in the meat by rigor mortis will kill the virus. In pigs this acidity is variable and the pH of bone marrow, lymph nodes, certain other organs and offal does not decline during rigor mortis. The virus can survive in refrigerated or frozen meat for a long time.

Susceptibility to heat and disinfectants

Foot and mouth disease virus can be inactivated by using appropriate disinfectants or applying heat.

Disinfectants that are acid or alkaline are very effective.

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