



The Virus

Swine Influenza Virus (SIV) belongs to the Influenza A viruses. This virus shows a high degree of genetic variability due to its segmented internal genome which allows for a high rate of genetic reassortment and recombination. The group is broken down into type, subtype and strain. By far the most common subtypes found in pigs are H1N1 and H2N3.

Clinical signs

- Acute Syndrome (“Classic Swine Flu”)
 - explosive outbreak of respiratory disease with rapid onset and spread
 - lethargy, piling, mouth breathing, muscle and joint pain, coughing and sneezing
 - high fever with associated reproduction issues such as abortions and stillborns
 - production losses caused by abortions, increased post weaning mortality, increased medication costs and slaughter losses due to lung adhesions

Isolation and Identification

Swine influenza can be isolated from fresh lung tissue, trachea and nasal swabs in viral transport media. Development of an effective vaccination program includes virus isolation, subtyping and viral sequencing. Serology tests such as HI and ELISA are also used to monitor antibody titres to the virus.

Prevention

Vaccination is used most often in the sow herds in North America with approximately 3% of market hogs vaccinated in the USA. SIV vaccines should be specific to the subtype present. Viral sequencing allows for identification of single or multiple strains that are present in the herd and comparison to the strains currently used to vaccinate the herd. Strain variation may impact the control provided by vaccines. Dr. Gramer of University of Minnesota acknowledges “We are seeing documented cases in well-vaccinated pigs where the SIV vaccine hasn’t offered adequate protection. The vaccine didn’t necessarily fail, it just didn’t cover new strains circulating within the herd.”

Maternal antibodies can interfere with vaccine-induced immunity. When vaccinating feeder pigs, vaccination timing should be addressed – 6 to 10 weeks of age is acceptable for most herds.

On-going diagnostic monitoring is essential to the success of a vaccination program, as it will allow the veterinarian to assess whether a commercial product is likely to provide sufficient protection or whether an autogenous vaccine may be indicated.

References: Western Hog Journal Spring 2005
Swine Practitioner May-June 2004

7 Steps for controlling swine flu

Experts recommend the following 7-step program to help control the increasingly complex SIV situation today:

1. Assess signs of clinical illness.
2. Select pigs in the early stages of illness for testing.
3. Ask for sequencing to characterize the isolates.
4. Evaluate vaccines for best control of SIV strains on the farm. The broader the coverage, the less likelihood of SIV breaks.
5. Develop a management plan for testing and vaccination.
6. Continue testing to fine-tune vaccination timing to avoid maternal antibody interference.
7. Implement a diagnostic plan to identify the cause of respiratory outbreaks and identify co-infections that may impact perceived vaccine efficacy.