

LITTER LETTER

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INFLUENZA PRIMER: The influenza season is here!

Following is a summary from SHIC (Swine Health Information Center) on flu in pigs and people.

Influenza A Virus (IAV):

- Most common and widely distributed
- New IAV emergence can cause human pandemics (2009 H1N1 unfortunately dubbed "Swine Flu")
- Usually H1N1 and H3N2 in human flu vaccines alongside one or two IVB strains
- Classic influenza clinical signs in pigs

Influenza B Virus (IBV):

- Alongside IAV, causes seasonal epidemics in humans almost every winter in the US.\
- One or two commonly included in human flu vaccines alongside IAV
- Recent evidence demonstrates infection in humans, pigs, and cattle
 - Study showed 38 percent of pig farms sampled had antibodies to IBV
- Clinical signs post experimental infection in pigs - Influenza-like symptoms, lung lesions, and seroconverted post virus inoculation.

Influenza C Virus (ICV):

- Added to the SHIC Swine Disease Matrix as an emerging disease to watch
- Infects humans (preferred host), swine, dogs, horses, and cattle (newly discovered by SHIC funded research)
 - 80 percent of humans acquire antibodies in their lifetime
- Found in pigs in China all months of the year (1981 first isolate)
- Can circulate with other influenza viruses
- Mild clinical signs in pigs
 - Normal temperature
 - Increased nasal secretion

Biosecurity Alert:

We have diagnosed or heard of several cases of PED virus and Delta coronavirus this winter. These viruses have been detected in both breeding herds and in grow/finish sites. The infection in grow/finish sites can often be traced to recent load outs of market pigs, pointing to possible contamination from collection points or harvest plants. Therefore, it is essential that strict guidelines be followed for trucks and truckers. Review protocols that are being used. Remember that these viruses are easily transmitted by direct contamination, footwear equipment. No farm staff should be allowed in load out trailers. Chutes should be disinfected after loadouts are utilized. To prevent freezing, propylene glycol can be added to the disinfectant solutions. Contact us if you need the formulas. The way that these viruses are introduced into breeding herds is more difficult to determine; all aspects of biosecurity should be reviewed including human entry, equipment, feed, supplies and pigs. (we have detected some PED positive animals (with no clinical signs) in isolation from rectal swabs.

The Swine Health Monitoring program from the University of Minnesota tracks the numbers of new PRRS cases each year from over 2 million sows. The percent of herds that have experienced new virus introductions for the current monitoring year is approximately 14%. This is one of the lower years since this program has started. This is consistent with what we have seen in our client base, although instability of the resident virus has continued to provide us with some challenges, especially in the post-weaning phase. We know that airborne transfer of PRRS is more common in cooler months. Since it is more difficult to detect exactly when PRRS enters a herd (compared to the viruses that cause diarrhea shortly after exposure) be aware that lapses in biosecurity may also open the door to PRRS virus being tracked in as opposed to entry via the airborne route.

Survival of LA-MRSA in Dust from Swine Farms [Abs.] :

Dust is suspected to be an important factor in transmission of livestock-associated methicillin-resistant *Staphylococcus aureus* (LA-MRSA) between pigs and pig farmers and their families. The aim of this study was to determine the rate of decay for *Staphylococcus aureus* and LA-MRSA in dust from swine farms. Electrostatic dust fall collectors (EDCs) were used for passive sampling of settling airborne dust in 11 stable sections from six swine farms. In conclusion, the presence of MRSA in airborne dust from five of six farms indicates that dust might be an important vehicle for transmission of LA-MRSA. LA-MRSA and *S. aureus* was found to survive well in farm dust with half-lives of 5 days, and dependent on the initial concentration they could be found in farm dust for weeks. The 99.9% die-off rate was 66 days for LA-MRSA. Thus, farm dust can pose an exposure risk for humans in the farm environment, but also when transported to other environments. On the other hand, the risk will decrease with time. These results provide important knowledge to diminish spread from farm environments to other environments on tools or clothing, and in relation to cleaning of emptied LA-MRSA-positive barns.

Feld L, Bay H, Angen Ø, Larsen AR, Madsen AM; Survival of LA-MRSA in Dust from Swine Farms; Ann Work Expo Health. 2018 Jan 20. doi: 10.1093/annweh/wxx108. [Epub ahead of print] PMID: 29365048 DOI: [10.1093/annweh/wxx108](https://doi.org/10.1093/annweh/wxx108)

Alkaline Digester for Carcasses:

The Ohio Department of Agriculture Diagnostic Laboratory at Reynoldsburg utilizes an alkaline hydrolysis digester for processing the carcasses that are submitted to the diagnostic lab. This digester can process 7000 lbs. of animal waste per cycle and in the course of the life of this particular digester the diagnostic lab had processed a total of 1.7 million pounds of animal waste. At this point, this method of processing carcasses is not practical for farm use.

African Swine Fever experimental transmission through feed:

Researchers at Kansas State University (Niederwerder and others) recently proved the actual transmission of African Swine Fever through feed. This was done in BL-3 laboratories, which are highly biosecure. The first study done by this group proved that African Swine

Fever virus could survive in simulated overseas feed shipments. The next studies will look at products to reduce or eliminate viral risk in feed. Previous studies have used “proxy” viruses to prove survival through simulated shipments. Although Chinese information had indicated that feed transmission was likely, this is the first experimental study in the U.S. to confirm transmission and to confirm the dose necessary for survival. Because some of the processing methods for feed ingredients in China can put the ingredients at risk for contamination (drying ingredients on roadways) it is essential that the U.S feed industry monitor ingredients (especially bulk products like organic soybean meal) and/or ingredient fillers (i.e., rice hulls, soy hulls) for all products sourced from China.

Benchmark Data for SHS herds 2018

20 sow farms in the SHS database were summarized for 2018 representing a total inventory of 25,700 sows. Pertinent average numbers are below. This includes some PRRS effects and semen problems in a few herds.
 Farrowing Rate 82.5%
 Total Born 14.3, Born Alive 12.65
 Stillborn 9.4%, Mummies 2.4%
 Weaned 10.83, PWM 16.0%
 Sow death rate 8.5%, Culling rate 36.6%
 Weaned/mated female/year 24.6
 The 2 highest farms were 29.8 and 29.1 PW/MF/Y!
 The 20 herds will receive a copy with full comparison.

Congratulations to Scott and Rachele Tucker of Pork Power on their new Baby Boy!

Congratulations to Tawny and Chad Ostler of Ostler Sires on the birth of their Granddaughter!

Congratulations to Chris Sheldon of Legan Livestock on the birth of her Granddaughter!

Congratulations to Gary Birkemeier of Legan Livestock on the birth of his Grandson!

Congratulations to Mr. & Mrs. John Rodibaugh of Rodibaugh & Sons Farm on the birth of their Grandson!

Condolences to Mark and Sandra Long Family (Long & Hufford Farms) on the death of Sandra's mother, Gladys Miller.

Condolences to Manda Adams of AMVC-SHS on the passing of her father.

Condolences to Joan Hodgen of AMVC-SHS on the passing of her mother.