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# Disease diagnostic session

## Joe Connor

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Carthage Veterinary Service, Carthage, IL

### Herd history

In 1999, a 235-head, well managed sow herd in the central United States began experiencing the following:

- high sow death loss
- declining farrowing rate
- high stillborn rate
- week pigs at birth
- “thumping” suckling pigs

## Paul Yeske

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Swine Vet Center, St. Peter, MN

### Herd history

Pigs from the grow-finish floor were in the finisher for about 1 week. The production system is a multi-sourced, multi-site type of flow. The nurseries are filled with one week's flow from multiple sow farms. Nursery flow is all-in—all-out by site and the finisher is all-in—all-out by site. This is a 4000-head finish site with two buildings made up of two 1000-head rooms. The barns are total slatted, curtain-sided facilities. In this system there are two smaller alternative flow nurseries that are at 2000-head each and are flowed on an all-in—all-out by site basis. Generally finishing sites are sourced from a single nursery. This particular group was flowed from these two alternative flow nurseries each filling a separate 2000-head barn. The feed grade medication program is Tylan at 40 grams per ton during this time.

Pigs were observed to have skin lesions being a very deep purple in color that started on the belly and progressed up between the rear legs. The affected pigs also were lethargic and appeared to be running a fever. Those skin lesions continued to become necrotic and scab up, with new skin eventually forming when animals recovered. There was a low morbidity with only a few pigs showing clinical signs (only 4 pigs on the site) in the barn. Mortality in

the affected pigs however can be high in groups that we have observed—up to 50%—but was highly variable.

## Tom Petznick

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Progressive Swine Technologies, Elgin, NE

### Herd history

Pig flow within 8 9600-head nurseries in the midwest began experiencing acute development of coughing, clear nasal discharge, fever, and lethargy during the spring of 1999. The nurseries were multi-sourced all-in—all-out (one week fill) by site. Pigs typically developed the clinical signs during the fifth week post-weaning and resolved by the seventh week prior to shipment to the finisher. Over 50% of the pigs were observed to be clinical, and death loss was not clearly affected although performance of the pigs was slowed.

Pigs arrived at nurseries no older than 22 days of age, were sexed and sorted by room, and averaged approximately 50–53 grow days before being transferred to the finisher. Vaccination consisted of HPS/erysipelas vaccine at 2 and 4 weeks postweaning. Sows were vaccinated for PRRS, *Mycoplasma hyopneumoniae*, PLE, and *E. coli*.

## Chris Rademacher

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New Fashion Pork, Inc., Jackson, MN

### Herd history

Pig flow from a commercial pyramid (2 sow farms) produces 3000 weaned pigs/week that flow into one of 3 8000-head nurseries that fill in 2.5 weeks. Pigs are stocked at 2.8 square feet/pig placed. Average weaning age is 19–20 days. Pigs spend 49–52 days in the nursery before they are moved out to a finishing site. Sow farm vaccinates for Parvovirus, *Leptospira*, *Erysipelothrix*, *E. coli*, and Rotavirus. Pigs are vaccinated in the nursery for PRV at 6 weeks post-weaning and *Mycoplasma hyopneumoniae* at 3 and 5 weeks post-weaning. Sow farm is serologically positive to PRRS virus, *Mycoplasma hyopneumoniae*, and both strains of swine influenza, H1N1 and H3N2.

During the spring of 2000, pigs that were 12 weeks of age, or 2 weeks into the finishing unit, began to show the following clinical signs:

- 5–10% of the pigs wasting away and showing signs of ill thrift
- severe dyspnea
- productive cough

## Max Rodibaugh

Swine Health Services, Frankfort, IN

### Herd history

This is a case involving a 900 sow herd with poor-doing pigs in wean-finish facilities. The symptoms were observed on the first pigs through barns after start-up. Some had enlarged joints, but the primary presentation was an increase in cull pigs, increasing from 1.3% to 4%. There were no signs of acute disease in grow-finish pigs or the breeding herd. Diagnostics, close-out results, and intervention will be discussed.

## Rod Frank

University of Minnesota, St. Paul, MN

### Herd history

Two boars in a 140-boar stud died over a 24-hour period. Neither boar was noted to be sick before death. One boar was a maternal line Large White X White Duroc and the other boar a terminal line Large White. Both boars had been in the facility for over 1 year and were from a single source. Boars are in individual pens with a trough running along the front of 22 pens. Boars are fed twice daily and given water immediately after feeding. No other boars in the facility had clinical signs of illness.

## European-like porcine reproductive and respiratory syndrome Virus

Kurt Rossow DVM, PhD<sup>1</sup>; Paul Yeske DVM, MS<sup>2</sup>; Sagar Goyal DVM, PhD<sup>1</sup>; Carrie Mahlum MS<sup>1</sup>; Kay Faaberg PhD<sup>1</sup>; Jim Collins DVM, PhD<sup>1</sup>

1: Minnesota Veterinary Diagnostic Laboratory, College of Veterinary Medicine, University of Minnesota, St. Paul, MN

2: Swine Veterinary Center, St. Peter, MN

In September 1999, an Iowa swine herd experienced an outbreak of abortion and weak live-born pigs. An European-like porcine reproductive and respiratory syndrome virus (PRRSV) was isolated from tissue and sera of pigs cultured in porcine alveolar macrophages (PAMs). The PRRSV was identified as European-like based on partial

sequence comparisons of the isolated virus to the European prototype PRRSV known as Lelystad virus. To date, this is the only European-like PRRSV we have identified.

The affected Iowa herd had prior episodes of PRRSV infection and clinical disease with different strains of PRRSV and also used modified-live PRRS vaccine. The identification of at least two markedly different PRRSVs within a swine herd documents that multiple strains of PRRSV can coexist within a herd but it does not indicate the time or source of infection or the lifespan of the virus within the herd. In addition, there are no current methods for characterizing the immune status of a breeding herd to identify how many PRRSVs may be circulating within a breeding herd and if there are subpopulations of pregnant swine at risk. Circulation and persistence of PRRSV in immature swine should not be used to characterize the infection in adult swine. New sampling methodologies need to be developed to characterize and differentiate the types of PRRSV existing in different swine herds.

### European-like PRRSV in nursery pigs

Four 3-week-old nursery pigs from a known and monitored PRRSV negative herd were inoculated (divided intranasally and intramuscularly) with the European-like PRRSV. The clinical infection was mild and generally inapparent. Pigs were viremic at 4, 10, and 14 days post-infection. Sera were positive for PRRSV by polymerase chain reaction (PCR) using a Lelystad-based primer and isolation on PAMs. Sera and tissue at necropsy were PCR-negative for PRRSV using standard U.S.-based primers. Sera from 2 of the 4 pigs were seropositive with the IDEXX Elisa test at 14 days post-infection. Lung lesions were mild in comparison to most infections caused by U.S. isolates.

The significance of the European-like PRRSV to the U.S. swine industry is limited so far to the difficulties encountered with diagnosis and differentiation. The clinical significance of the European-like PRRSV in the family of U.S. PRRSVs is not apparent at this time.

