



UNIVERSITY OF MINNESOTA

Swine Disease Eradication Center

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SDEC Partners Research Update

Project Update: PRRS incidence/prevalence study

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Background

- Porcine Reproductive and Respiratory Syndrome (PRRS) continues to be a devastating disease to the swine industry with an annual cost recently estimated at \$664 million.
- Veterinarians working with the farms reported weekly PRRS status using the AASV classification system (Holtkamp et al., 2011) for each farm beginning July 2009.
- New infection defined using sequence homology, duration of negative testing, herd immunity, clinical signs, biosecurity, location, time of year and weather (Yeske, 2013).

Objective

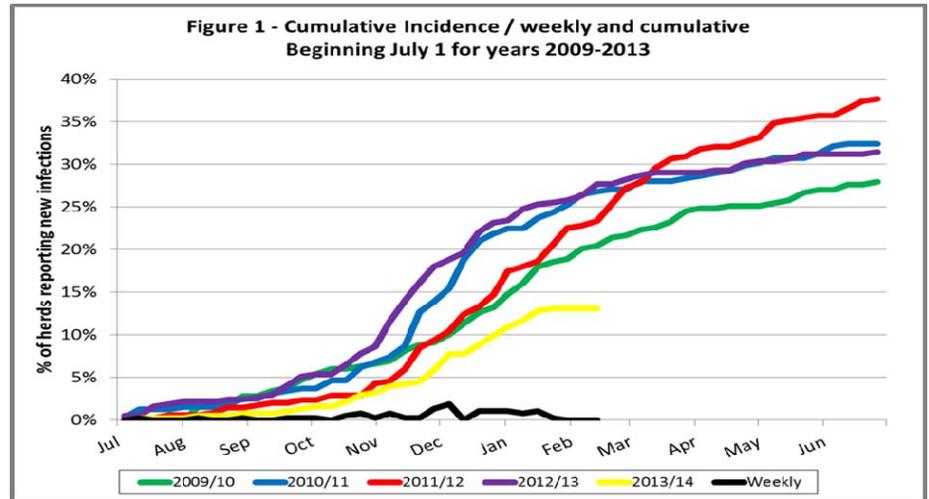
To describe the epidemiology of PRRS infections in a sample of sow herds in the United States



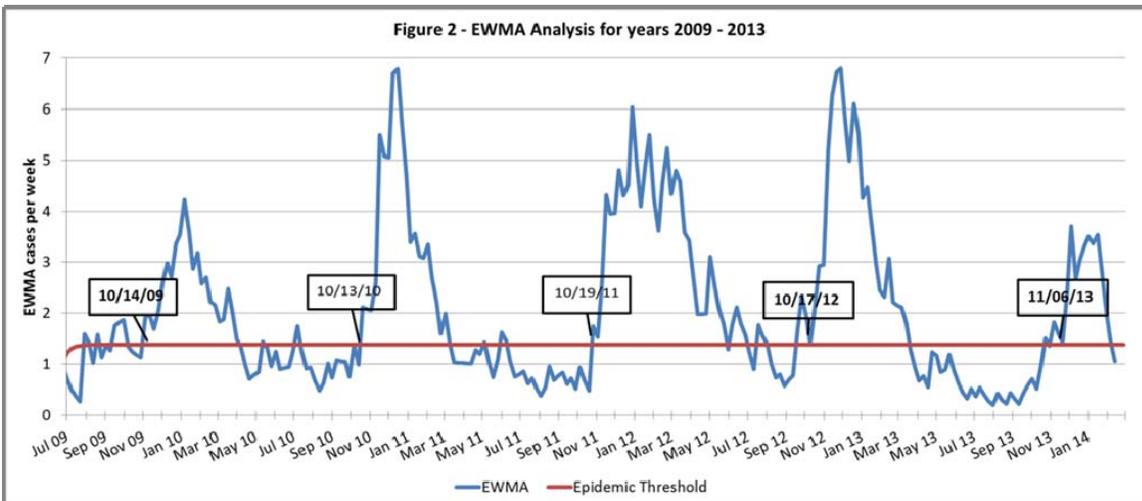
Results

14 collaborating production systems totaling 374 sow farms, representing approximately 1.2 million sows (22% of the US sow herd, USDA NASS, 12/27/13) across 15 states.

- 80% commercial, 13% multiplier, and 6% nucleus production
- 19% herds filtered continuously and 2% filtered seasonally
- Average herd size: 3,100 (500 – 12,000)



Using July 1 as the start of the observation period for each year, approximately 30-40% of farms report a new infection each year (figure 1).



Using EWMA , the onset of epidemic was mid-October for years 2009 – 2012 and early November for 2013 (figure 2).

Using previous four years as baseline:

- Significantly fewer cumulative new breaks thru December 2013 ($p = 0.0002$)
- Significantly fewer breaks between July and September 2013 ($p = 0.0139$) and between October and December 2013 (0.0049).

Implications

- It is important to understand that due to the voluntary nature of the participants, this cohort may not be representative of the entire US sow herd.
- The 2013/14 monitoring year has proven to be surprisingly different than the previous 4 years. Several reasons for this could include:
 - Better awareness of PRRS epidemic seasons leading to better bio-security preparations
 - Difficulty identifying PRRS infections in herds co-infected with PED
 - Reduced PRRS diagnostics during PED outbreaks
 - Shorter duration of PRRS positive pig production during PED breaks
 - Extremely cold weather conditions across much of the mid-west