

GOOD NEWS! As you know, Dr. Andreia Arruda has been working with us in a post doctoral position for the past 12 months. I am pleased to tell you that she has accepted a faculty position at The Ohio State University, College of Veterinary Medicine to start in January, 2017. Andreia's knowledge, inquisitive nature, initiative and most importantly, ever-present smile will be much appreciated by her colleagues, veterinary students, Ohio pork producers and practitioners. While we will miss her daily presence, she will keep working with us at SHMP in our effort to deliver value to our producers and veterinarians. Congratulations Andreia!

Do peaks in PRRS incidence occur at similar intervals across geographic regions in the US?

Andreia Arruda, DVM PhD

Key points

- Time series analysis can be used to investigate PRRS trends and seasonality
- Preliminary results from our time series analyses indicate that PRRS peaks are yearly for most US states, but may be semi-annual in a few states.

Background

We commonly hear the term "PRRS season" referring to the period of November- February, when incidence rate of PRRS has increased in a noticeable fashion. This can be easily seen when we look at the SHMP EWMA graph. But it is important to keep in mind that, traditionally, this graph has been constructed using data aggregated from all SHMP participating sites located across several regions of the United States.

As more data become available through the SHMP, we are now able to look at the "behavior" of PRRS over time for different US states in an effort to derive insights on region-level PRRS dynamics.

What is time series?

When we measure a variable or an outcome (for example, number of farms classified as status 1) over a fixed time interval, the resulting data form what we call a "time series". We can use time series for different objectives, for example, describing disease patterns, detecting important changes, and forecasting the near future. Time series analyses allow us to examine and describe trends (overall PRRS behavior over time), seasonality (cyclical patterns of the data), and "random noise".

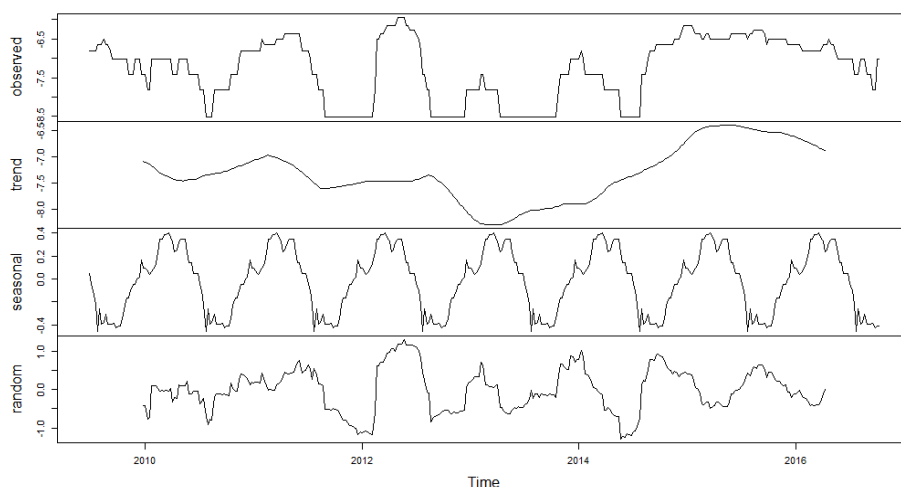


Fig 1. Decomposition of the time series to show observed PRRS status 1 farms, trend, season and random variation (aggregated data from a subpopulation of SHMP participating sites).

Preliminary results

Some participants have noticed a "summer peak" in addition to the late fall/winter peak. We can disaggregate SHMP data by state and determine the interval between PRRS peaks (Fig 1). We are currently analysing the data separately for MN, IA, NC, NE and IL, and our preliminary results indicate that for most US states, only the yearly peak could be detected, but for a few swine dense regions, peaks may be occurring every 6 months. Stay tuned for more.