An update of PRRS eradication: pressing issues that need answers

Porcine reproductive and respiratory syndrome virus (PRRSV) is an economically significant pathogen of the global swine industry. Economic analyses have documented losses averaging $239 per sow over a one year period due to elevated mortality rates, reduced growth, and excessive medication and vaccination costs. While a number of control strategies have been developed, they are inconsistent and cannot be applied to all farms. Therefore, the ability to successfully control the disease for extended periods using traditional methods appears unlikely. We feel the long-term viability of the US swine industry will be better served by PRRS eradication, rather than by coexistence.

Recent work by our group has centered on understanding how PRRSV is maintained within infected populations, and how the virus is transmitted from pig-to-pig. We have focused the majority of our efforts on the breeding herd, and have proven the following points:

1. The number of animals that harbor PRRSV in infected breeding herds that have been closed for 6-9 months is low (1-2%).
2. While it does not appear that shedding of virus in the breeding herd is a frequent event; persistently infected sows can transmit PRRSV to contacts for up to 56 days. This study is still in progress.
3. PRRSV can be spread from infected to naïve animals through contaminated needles and fomites (boots and coveralls).
4. Genetically diverse strains (as based on the sequencing of ORF 5) can co-exist in a farm over time.
5. Elimination of PRRSV by test and removal is a highly efficacious, yet labor-intensive/expensive method.

Despite this information, more questions remain, including:

1. How can we best initiate and maintain a consistent, protective immunity within the breeding herd to eliminate subpopulations of naïve animals and control viral transmission from carriers?
2. What is the proper length of time to close a breeding herd to outside replacement stock, in order to minimize the risk of carrier animals?
3. Can we identify non-porcine routes of PRRSV entry into naïve farms in order to better protect our herds following elimination of the virus?

At the Center for Swine Disease Eradication, we have experiments designed and the funding in place to answer these questions. The studies will be carried out in traditional experimental facilities, as well as in our swine research farm, in to better replicate field conditions and add more accuracy to the results and conclusions. We look forward to answering these questions and sharing the results with you.