

## PRRSv in the Literature

### Genetic Diversity of PRRS Virus Collected from Air Samples in Four Different Regions of Concentrated Swine Production during a High Incidence Season

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**Abstract:**

Porcine Reproductive and Respiratory Syndrome (PRRS) is one of the most relevant swine diseases in the US, costing the industry millions of dollars per year. Unfortunately, disease control is difficult because of the virus dynamics, as PRRS virus (PRRSV) can be transmitted by air between farms, especially, in regions with high density of swine operations. While long distance airborne transport of PRRSV has been reported, there is little information regarding the dynamics of PRRSV airborne challenge in concentrated regions. The objective of this study was to describe the frequency of detection, dose and diversity of PRRSV in air samples collected across four concentrated production regions during the PRRS-high risk season in the Midwestern US (October–December) in 2012. Between 29% and 42% of the air samples were positive in all four sampling sites. Sequencing of the recovered virus showed a wide diversity of field and vaccine variants. Higher frequency, dose, and diversity of PRRSV were observed in air at locations with higher pig density. These findings suggest that regional spread of PRRSV due to aerosol transmission of PRRSV represents a significant risk to susceptible herds in concentrated regions of domestic pig production where PRRSV is endemic.

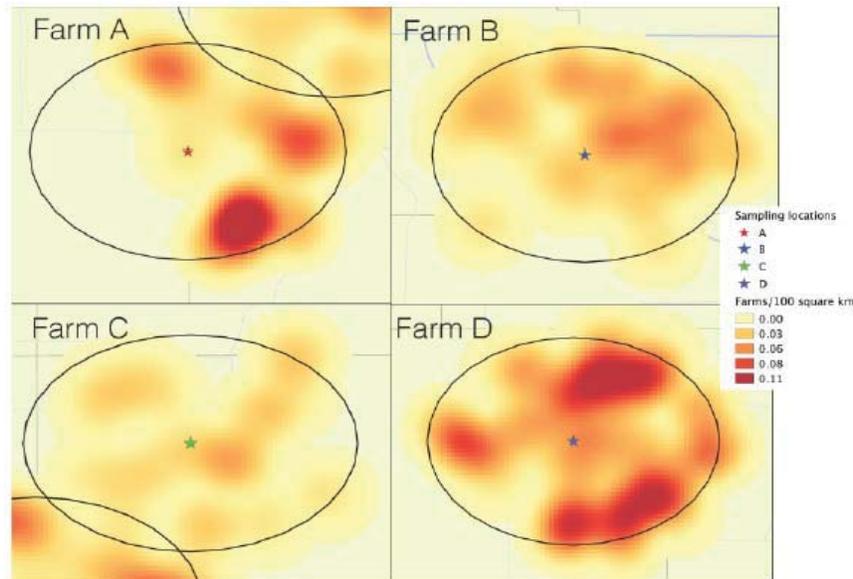


Figure 1. Farm density kernel within 10 km of each of the air sample locations: Farm A (South Dakota), farm B (Northeast Iowa), farm C (Southwest Minnesota), farm D (Northwest Iowa).

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**Editor’s comment:** This week we highlight a newly-published article on PRRSv aerosol detection and sequence analysis. The study uses a novel Bayesian approach to phylogenetic analysis of PRRSv sequences to support relevancy of airborne transmission as a potential route of infection in hog-dense regions. An interesting note is also the detection of MLV virus strain in the air samples which the authors suggest could lead to positive PCR.