

SWINE HEALTH

Title: National Swine Health Monitor project: incidence and factors associated with transmission and control of PED virus – NPB #14-088

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Scientific Abstract:

A National Swine Health Monitor program would provide a unique opportunity to document risk factors and incidence of several diseases simultaneously, such as PEDv and PRRSv as well as future important pathogens. All pathogens appear to be able to spread locally among swine farms despite good biosecurity practices, which presents long term challenges to the US swine industry. An overarching epidemiologic objective is to monitor incidence and prevalence of important pathogens and to understand factors related to control, and potentially elimination of these pathogens. The overall purpose of this project was to create a national Swine Health Monitoring Project (SHMP) accomplish these objectives. In objective 1, the PRRS incidence project and a pilot project to monitor PED virus were joined to create one monitoring project. Today, the SHMP includes approximately 2.5 million sows and 998 sow herds (approximately 50% of the US sow inventory). In objective 2, a subset of the SHMP participants who became infected with PED virus were analyzed for tempero-spatial clustering and associated risk factors. PRRS and PED clustered in time and space between the fall and winter of 2013 through the spring of 2014. At the farm level, being in swine dense areas within disease clusters increased the risk of becoming infected with either disease and may be, in part, explained by the use of contracted trucking. Conversely, high biosecurity including bio-aerosol filtration reduced the risks. In objective 3, impact of PED virus on production and time to eliminate the virus from weaned pigs were determined. Of 429 herds with PED virus that achieved the stable state of weaning PEDv PCR negative pigs, the median time was 28 weeks, ranging from 7 – 64 weeks. A median of 2.7 piglets / inventoried sow were not weaned and the average time required to recover to baseline production was 10 weeks in 183 herds. The Swine Health Monitoring Project continues to expand, evolve and realize its long term potential.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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