Review of MSHMP PRRS Chart 2 - Prevalence

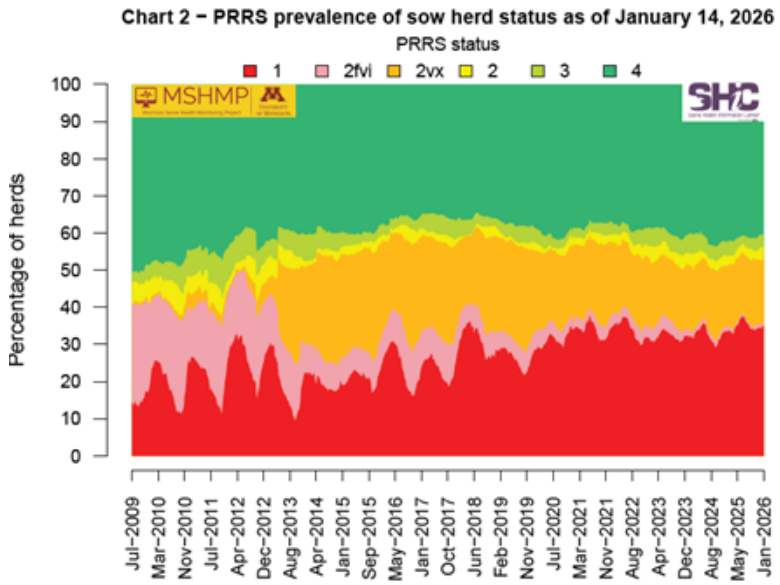
MSHMP Team

Key Points:

- Chart 2 depicts the prevalence (i.e., the proportion of breeding herds in each of the PRRS status categories over time).
- Since 2013, the proportion of farms that vaccinate (2vx) and that use field virus (2fvi) has not changed dramatically.
- The cyclical pattern of farms in status 1 observed early in the project is slowly disappearing after 2018.

The accurate interpretation of Chart 2 can help assess if the PRRS situation in the country is or is not improving. Chart 2 depicts the PRRS aggregate prevalence of sow herd status since the beginning of the MSHMP. Prevalence is the proportion of individuals in the population with a certain characteristic (e.g., a disease or other risk factor) at a certain point in time. For the MSHMP report, the prevalence is the proportion of participating herds being classified in each of the different PRRS status (e.g., 1, 2fvi, 2vx, 2, 3, and 4) (1). These proportions are represented on the y-axis. On the x-axis we plotted the time in weeks-months, beginning on July 2009 until January 2026.
As we have highlighted in previous science pages, herds move between different status as they report a break, stability or eliminate the virus. It is also important to highlight that systems have joined MSHMP over time which may have farms located in areas with higher or lower incidence of PRRS which ultimately play a role when generating this graph. Since 2018, the seasonality of status 1 farms has not been as clear as in previous years and herds classified in status 1 seem to remain for longer periods of time in such category. The use of processing fluids has also contributed to better classifying herds and thus contributed to keeping herds in status 1 for a longer period of time (2). Processing fluids are serum and serosanguineous fluids obtained as part of castration and tail docking practices, used as a convenient and reliable specimen to monitor PRRSV in breeding herds (3). The increased sensitivity to detect if PRRS is present in a given farm when using processing fluids may rely on the increased representativeness given this specimen is generated through routine practices in a large number of 3–5 day-old pigs in comparison with the previous standard of blood collection of 30-60 due-to-wean piglets.

In summary, Chart 2 shows the proportion of herds classified in a specific category in a specific point in time. Herds change from one category to another as outbreaks occur or as stabilization or elimination programs are successful. Since the yearly incidence rate has remained at 20-30%, the change in PRRS status 1 prevalence shown since 2018 may be explained by several factors including new monitoring methods, herd reinfections, and length of time to stability. This chart summarizes the overall statuses amongst MSHMP participants which will be different to system or region-specific charts.



References
1. Holtkamp DJ, Polson DD, Torremorell M, Morrison B, Classen DM, Becton L, et al. Terminology for classifying swine herds by porcine reproductive and respiratory syndrome virus status. Journal of Swine Health and Production2011. p. 44-56.
2. Kikuti M, Vilalta C, Sanhueza J, Melini CM, Corzo CA. Porcine reproductive and respiratory syndrome prevalence and processing fluids use for diagnosis in United States breeding herds. Frontiers in Veterinary Science2022.
3. Vilalta C, Sanhueza J, Alvarez J, Murray D, Torremorell M, Corzo C, et al. Use of processing fluids and serum samples to characterize porcine reproductive and respiratory syndrome virus dynamics in 3 day-old pigs. Vet Microbiol2018. p. 149-56.