





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.

Recently we have received a number of questions regarding how to accurately interpret Chart 2 as the industries is trying to assess whether 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 project. 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, beginning on July 2009 until the past calendar week (08/11/23).

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 be located in areas with higher or lower incidence of PRRS which ultimately play a role when generating this graph. Since 2013 a decrease in status 2fvi herds has been observed whereas an increase has been seen in 2vx herds, presumably reflecting a management decision to use MLV vaccines. 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 longer periods of time in such category. Prevalence, or the proportion of the population with PRRS in this case, is a product of both incidence (number of new cases occurring) and the time that herds need to reach stability (e.g., consistently weaning negative piglets). Given that the PRRS incidence has been lower in the past couple of years, a reasonable conclusion for the 2021 increase in the prevalence of status 1 farms is that farms that break with PRRS are remaining in status 1 for longer periods than in previous year. The temporal concurrence of processing fluids used for PRRS virus monitoring suggests that the adoption of this sampling strategy may help explain the changes (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

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