MSHMP PRRS Prevalence Chart Description

Juan Sanhueza, Emily Geary, Mariana Kikuti, Carles Vilalta, Paulo Fioravante and Cesar Corzo

Key points

- The prevalence chart (Chart 2) describes the percentage of herds that are classified in a given status through time.
- It allows eyeballing general trends although the growing nature of the project does not allow year to year comparisons without proper adjustment.
- For PRRSv, there is a steady increase in the percentage of herds in status 1 in recent years.

PRRSv Prevalence chart

This chart shows the **percentage of herds** classified in a given status (1 = positive unstable, 2fvi = positive stable field virus inoculation, 2vx = positive stable vaccine, 2 = stable, 3 = provisionally negative, and 4= negative) in a given week. The classification criteria for these statuses uses the current AASV terminology (Holtkamp et al., 2011) as a guide but we also include the use of commercial vaccine (2vx) in gilt and/or sows or the use of live virus inoculation (2fvi) in replacement gilts once the herd has achieved stability (weaning PCR negative pigs). Each color-shaded area represents the percentage of herds in that status in time (Figure 1). For instance, currently there are 29.5% of breeding herds in status 1 indicating that these herds are weaning PRRSv PCR positive piglets. Similarly, there are 4.9% in status 2fvi, 19.5% is status 2vx, 1.3% in status 2, 3.3% in status 3, and 41.5% in status 4.

Word of caution

Although the graph shows data from July 2009 to the present, the observed trends do not take into account the inclusion of new systems in extended geographical areas. These additions can shift apparent trends in the graph. An example is the visible decreasing trend of the proportion of status 4 herds. In reality the addition of systems in high dense regions that have vaccination programs dilutes the status 4 herds in the calculation. Therefore, comparison of these percentages across years should be avoided without proper adjustment.

Chart value

This chart shows the distinct seasonal pattern of PRRS outbreaks as the proportion of PRRS positive herds (red) increases during fall and winter and decreases during spring and summer. The Graph also shows a recent shift in this pattern. Namely, that the proportion of PRRS positive herds during the low risk season has been increasing since 2016. The data shows that during April 2016, the prevalence of herds in status 1 peaked at 32.7% to then decrease to a minimum of 17.6% in November of 2016. In May 2017, status 1 prevalence peaked again to a 26.8% but decreased only to a minimum of 21.0% in November 2017. In 2018, prevalence peaked at 33.7% in July, but only decreased to 26.0% in November 2018. A similar general trend is observed for the 13 original systems that have consistently shared data since the project started. Therefore, the addition of new systems does not seem to play a major role in this increasing trend.

If more herds are going through the summer and early fall as PRRS positive, this would indicate that the amount of herds achieving stability during the low incidence season has been decreasing in recent years. Combined with the lower PRRS incidence during the current season, this suggests that herds are remaining status 1 for longer. In other words, herds are taking longer to reach stability. The factors influencing this are currently unknown, but several hypotheses exist. The recent use of more sensitive tools, such as processing fluids, to detect PRRS during the elimination process, may be resulting in fewer herds erroneously classified as stable (false stability status). Additionally, a higher frequency of PRRS outbreaks associated with the 1-7-4 RFLP type could also explain this trend, as recent reports have observed that outbreaks associated with this RFLP type average a longer time-to-stability (Linhares et al., 2017; Sanhueza et al., 2019). In future analyses we will assess whether the percentage of outbreaks associated with 1-7-4 RFLP type has increased in recent years.

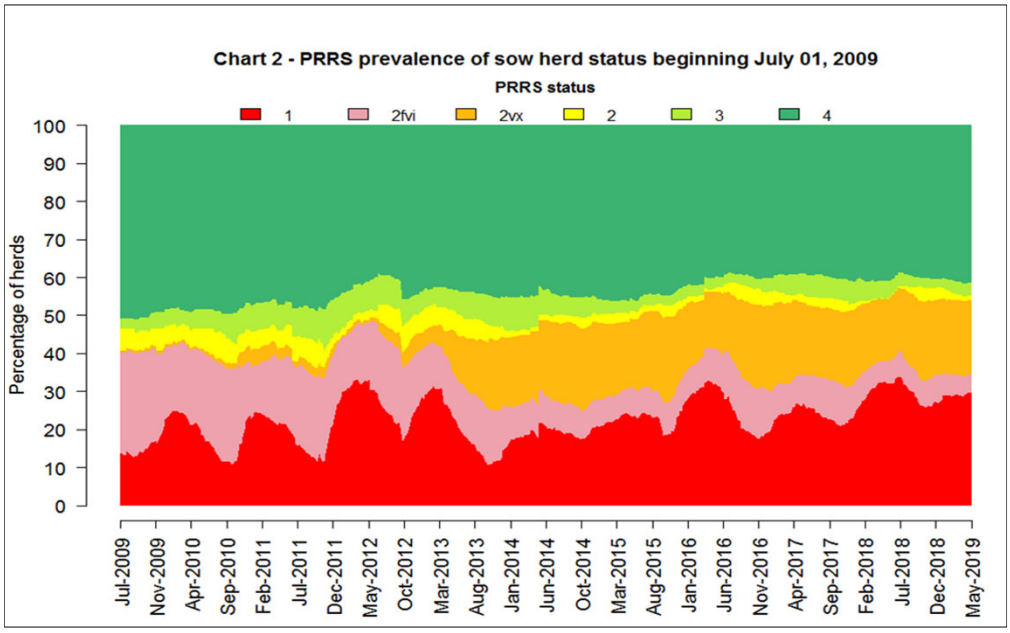

Figure 1: Prevalence chart of breeding herd statuses over time

References

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