

Comparison of PRRS incidence rate in status IV breeding herds during 2009-2019

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- PRRS incidence rate in status IV farms varied significantly from 2009 to 2019.
- The incidence rate in status IV farms during 2019 was one of the lowest on record and comparable to the one observed in 2013 and 2014; the years of the PED epidemic in the US.
- PRRS incidence in status IV farms during 2019 was significantly lower than the one of 2015 and 2016 and marginally non-significant lower ($p=0.07$) than the one of 2018.

PCR (shedding) and ELISA (exposure) negative breeding herds to porcine reproductive and respiratory syndrome (PRRS) virus are classified as status IV according to the American Association of Swine Veterinarians (Holtkamp et al., 2011). Farms that earned this status have the lowest incidence rate compared to the rest of PRRS virus categories. Here we describe PRRS incidence rate in status IV farms from 2009 to 2019 and compare the PRRS incidence rate in 2019 with the PRRS incidence rate observed in previous years.

During 2019, 20 status IV farms had a PRRS outbreak. Incidence rate in this groups was 5.1 (95% CI 3.1—7.9) PRRS outbreaks per 100 farm-years. In other words, five PRRS outbreaks can be expected in a population of 100 status IV farms during a year at risk of PRRS. The incidence rate of PRRS in status IV farms during 2019 was significantly lower than the one observed in status IV farms during 2015 and 2016, and borderline significantly lower ($p=0.07$) than the one of 2018. However, no significant differences ($p>0.26$) were observed when compared to the incidence rate of 2013, 2014, and 2017.

PRRS incidence rate in status IV farms varied significantly among years. The highest PRRS incidence rate was observed in 2011 and 2012 with 19.8 (95% CI 14.0—27.3) and 21.8 (95% CI 15.9—29.3) cases per 100 farm-years, respectively. On the other hand, the lowest PRRS incidence rate prior to 2019 was observed during the emergence of porcine epidemic diarrhea (PED) in the US in 2013 and 2014 with 5.6 (95% CI 3.3—9.0) and 4.9 (95% CI 2.9—7.8) cases per 100 farm-years, respectively. In PED pre-epidemic years (2009—2012) the average PRRS incidence rate in status IV farms was 17.4 (14.4—20.9) cases per 100 farm-years, while in post PED epidemic years (2015—2019) the average PRRS incidence rate was 8.6 (7.3—10.0) cases per 100 farms-years.

While the population of status IV farms changes year after year due to inclusion of new participants, monitoring PRRSv occurrence in this select population of farms is helpful as it reminds us of the capability of this virus to affect farms that may have higher than average biosecurity standards.

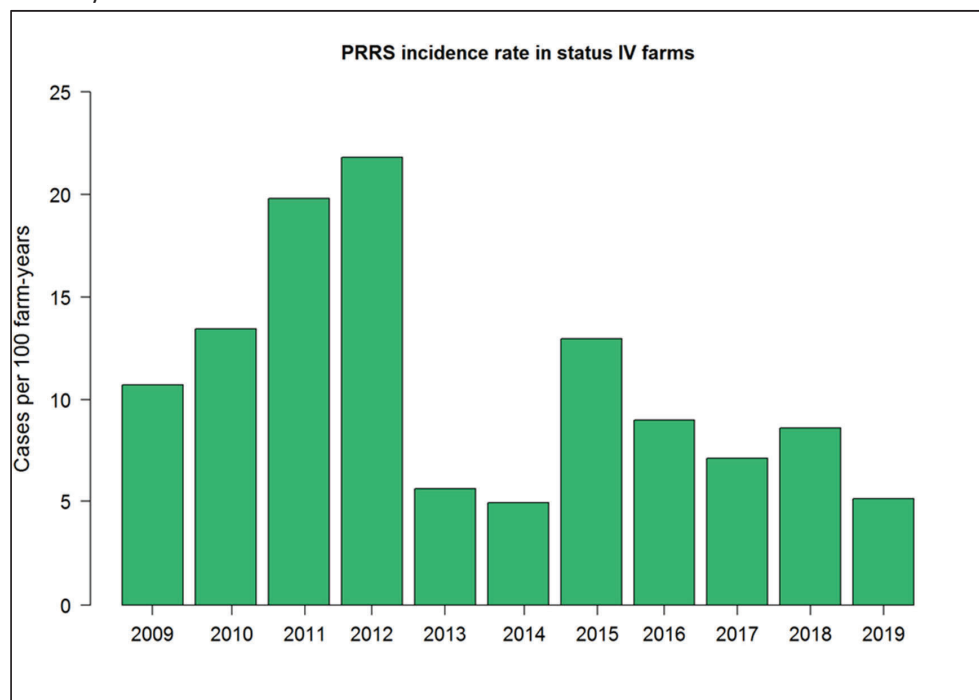


Figure 1: PRRS Incidence Rate in status IV farms from 2009 to 2019

References: Holtkamp, D.J., Polson, D.D., Torremorell, M., 2011. Terminology for classifying swine herds by porcine reproductive and respiratory syndrome virus status. *Journal of Swine Health and Production* 19, 44-56.