MSHMP participant PRRSv RFLP pattern changes

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Key Points:

- MSHMP continues monitoring PRRSv RFLP patterns associated with outbreaks in participant systems.
- The proportion of reported 1-7-4 outbreaks decreased significantly from July 2018 compared to that from January 2017 to June 2018.
- The proportions of reported 1-8-4, 1-4-4, 1-3-4, 1-10-2, and 1-1-2 outbreaks have not changed significantly in recent years.

The Morrison Swine Health Monitoring Project (MSHMP) started monitoring restriction fragment length polymorphism (RFLP) patterns of PRRSv associated to PRRS outbreaks in participant sow farms since July, 2018 as a method to superficially understand diversity. However, retrospective additions were also incorporated starting consistently from January, 2017 and 227 RFLP patterns have been recorded. The most common RFLPs are 1-8-4 (n=60), 1-7-4 (n=57), 1-4-4 (n=26), 1-3-4 (n=16), 1-3-2 (n=9), 1-12-4 (n=9), 1-1-2 (n=7), and 1-10-2 (n=5). Figure 1 shows the number of RFLP patterns reported through time. RFLP patterns that occurred less than 5 times were categorized into "Other" (n=34).

We compared the proportion of RFLP pattern occurrence prior to and after July 1st 2018 using the Fisher's exact test. The proportion of 1-7-4 reported decreased significantly from 33.1% (43/130) before July 1st 2018 to 18.6% (18/97) after July 1st 2018 (p=0.02). A significant decrease (p=0.045) of 6.5% was also observed for the RFLP 1-12-4. Additionally, the proportion of the category "other" RFLPs increased significantly from 12.3% (16/130) before June 30 2018 to 22.7% (22/97) after July-01-2018 (p=0.048).

In contrast, no significant difference (p=0.77) was observed between the proportion of 1-8-4 reported before July 1st 2018 (29.2%, 38/130) and after July 1st 2018 (26.8%, 26/97). No differences were also observed between these two time periods for RFLPs 1-4-4 (2.1% increase), 1-3-4 (4.4% increase), 1-10-2 (3.3% decrease), and 1-1-2 (3.1% decrease).

PRRSv diversity occurrence continues to be dynamic in the U.S. swine population. Determinants for specific virus occurrence are not well understood and require further investigation.

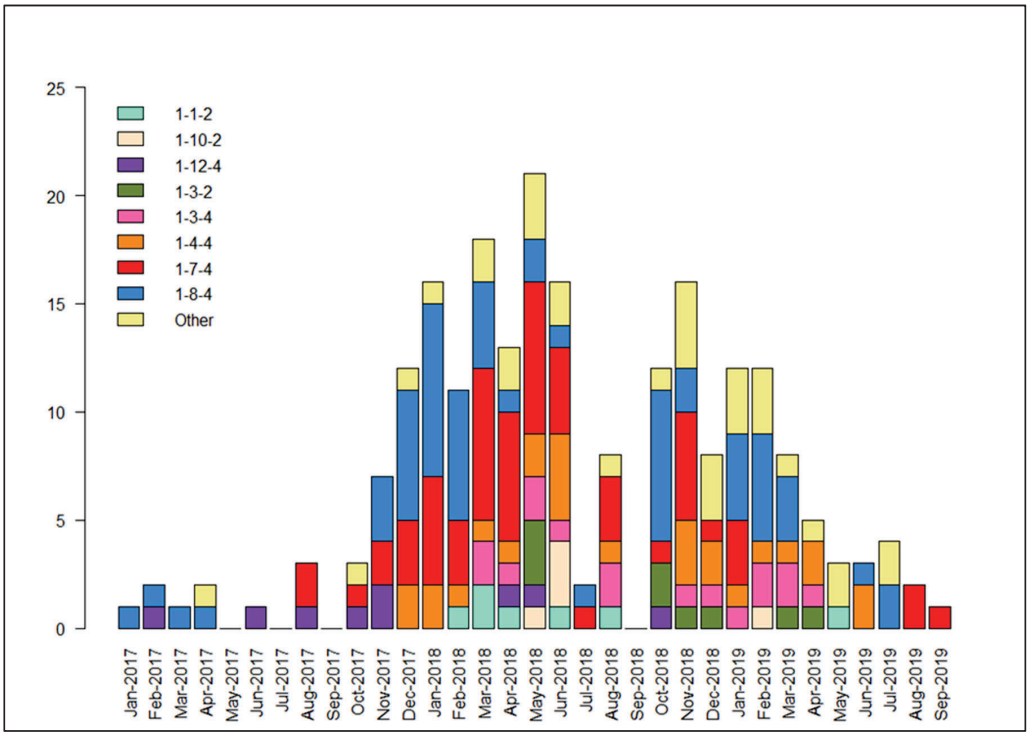

Figure 1. Number of different restriction fragment length polymorphism (RFLP) patterns recorded in the MSHMP associated with breeding herds PRRS outbreaks between January 2017 and September 2019.