Swine Disease Reporting System
Report # 90 (August 05, 2025)

What is the Swine Disease Reporting System (SDRS)? SDRS includes multiple projects that aggregate data from participating veterinary diagnostic laboratories (VDLs) in the United States of America, and reports the major findings to the swine industry. Our goal is to share information on activity of endemic and emerging diseases affecting the swine population in the USA, assisting veterinarians and producers in making informed decisions on disease prevention, detection, and management.

After aggregating information from participating VDLs and summarizing the data, we ask for the input of our advisory group, which consists of veterinarians and producers across the US swine industry. The intent is to provide an interpretation of the observed data, and summarize the implications to the industry. Major findings are also discussed in monthly podcasts. All SDRS reports and podcasts are available at www.fieldepi.org/SDRS.

Swine Health Information Center (SHIC)-funded Domestic Swine Disease Surveillance Program: collaborative project among multiple VDLs, with the goal to aggregate swine diagnostic data and report it in an intuitive format, describing dynamics of pathogen detection by PCR-based assays over time, specimen, age group, and geographical area. Data is from the Iowa State University VDL, South Dakota State University ADRDL, University of Minnesota VDL, Kansas State VDL, Ohio ADDL, and Purdue ADDL.

Collaborators:

Swine Disease Reporting System office: Principal investigators: Daniel Linhares & Giovani Trevisan; Data Analyst: Quyen Thuc Le; Project coordinator: Guilherme Cezar

Iowa State Uni.: Edison Magalhães, Gustavo Silva, Marcelo Almeida, Bret Crim, Kinath Rupasinghe, Srijita Chandra, Eric Burrough, Phillip Gauger, Christopher Rademacher, Darin Madson, Michael Zeller, Rodger Main.

Uni. of Minnesota: Mary Thurn, Paulo Lages, Cesar Corzo, Matt Sturos, Hemant Naikare.

Kansas State Uni. and Kansas Dept. of Agr.: Rob McGaughey, Franco Matias-Ferreyra, Jamie Retallick, Jordan Gebhardt, Sara McReynolds.

South Dakota State Uni and South Dakota AIB: Jon Greseth, Darren Kersey, Travis Clement, Angela Pillatzki, Jane Christopher-Hennings, Eric Nelson, Beth Thompson.

Ohio Animal Disease and Diag. Lab. and *The Ohio State University*: Melanie Prarat, Dennis Summers, Andréia Arruda.

Purdue Uni and *Indiana State BOAH*: Craig Bowen, Kenitra Hendrix, Joseph Boyle, James Lyons, Kelli Werling.

Disease Diagnosis System: Consisting of reporting disease diagnosis (not just pathogen detection by PCR), based on diagnostic codes assigned by veterinary diagnosticians from ISU-VDL.

PRRSView and FLUture: Aggregates PRRSV and influenza A virus diagnostic data from the ISU-VDL.

PRRS virus RFLP/Lineage report and BLAST tool: Benchmark PRRSV ORF5 sequences and compare your PRRSV sequence with what have been detected in the U.S.

Audio and video reports: Key findings from SDRS projects are summarized monthly in a conversation between investigators and is available in the Spotify, Apple Podcast, YouTube, LinkedIn, and the SDRS webpage. In addition to this report, interactive dashboards and educational material are publicly available.

Advisory Group: Providing their comments and perspectives monthly: Mark Schwartz, Megan Niederwerder, Paul Yeske, Deborah Murray, Brigitte Mason, Peter Schneider, Sam Copeland, Luc Dufresne, Daniel Boykin, Corrine Fruge, William Hollis, Rebecca Robbins, Thomas Petznick, Kurt Kuecker, Lauren Glowzenski, and Brooke Kitting.

Note: This report contains data up to July 31, 2025.

Topic 1 – Detection of PRRSV RNA over time by RT-qPCR.

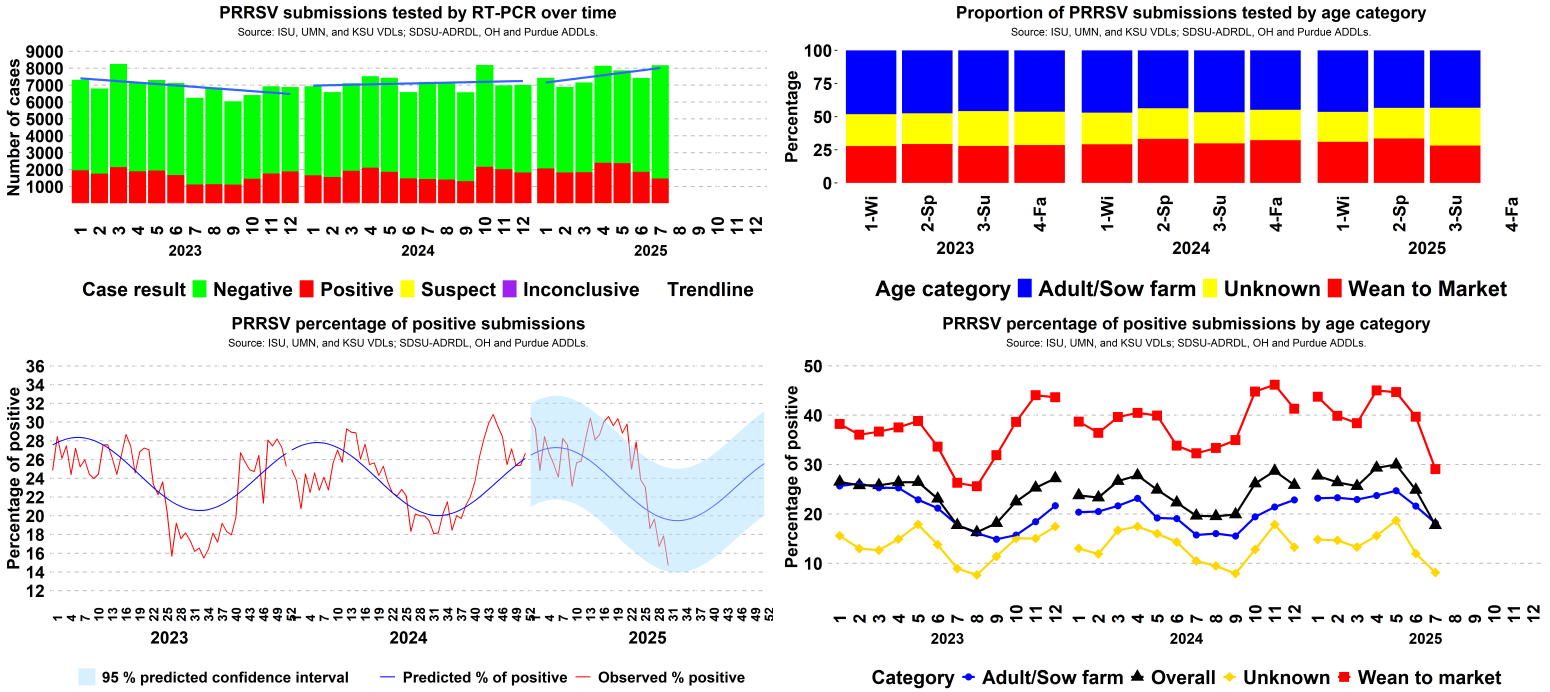
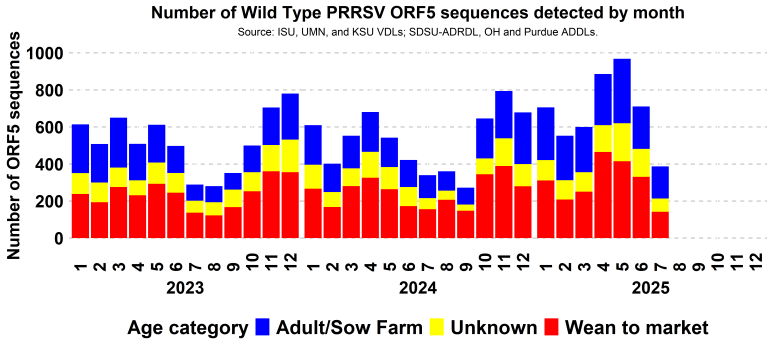


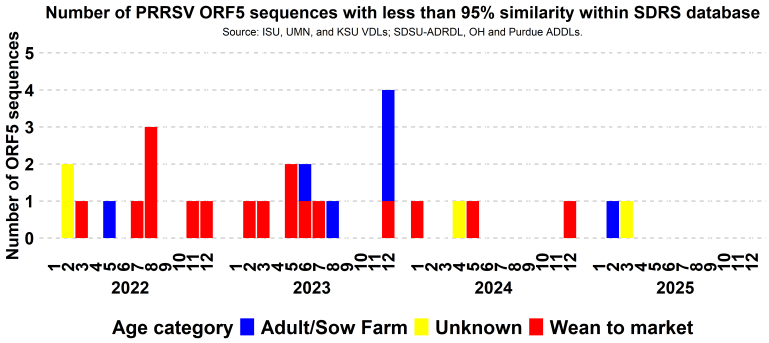
Figure 1. Top: *Left*: Results of PRRSV RT-PCR cases over time; *Right*: Proportion of accession ID cases tested for PRRSV by age group per year and season. **Bottom**: *Left* Expected percentage of positive results for PRRSV RNA by RT-qPCR, with 95% confidence interval band for predicted results based on weekly data observed in the previous 4 years; *Right*: Percentage of PRRSV PCR-positive results, by age category, over time. Wean to market corresponds to nursery and grow-finish. Adult/Sow correspond to Adult, boar stud, breeding herd, replacement, and suckling piglets. Unknown corresponds to not informed site type or farm category.

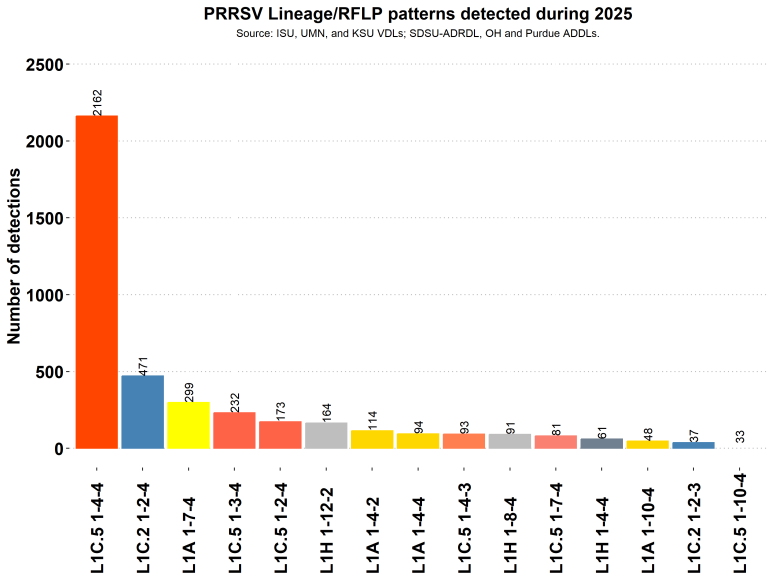
SDRS Advisory Group highlights:

- Overall, 17.73% of 8,178 cases tested PRRSV-positive in July, a substantial decrease from 24.86% of 7,429 in June;
  - Positivity in the adult/sow category in July was 18.15% (632 of 3,482), a moderate decrease from 21.59% (707 of 3,274) in June;
  - Positivity in the wean-to-market category in July was 29.09% (605 of 2,080), a marked decrease from 39.69% (920 of 2,318) in June;
- Overall PRRSV-percentage of positive cases was 3 standard deviations above state-specific baseline in IA and MN;
- The second quarter of 2025 (April–June 2025) had the highest PRRSV positivity in wean-to-market since 2013. In addition, the ISU-VDL confirmed tissue diagnoses (cases analyzed by diagnosticians) also reached a historical high number for Q2 (Check SDRS report bonus page - Page 9).

Topic 2 – PRRSV ORF5 sequences detection over time







Most frequent PRRSV strains detected across U.S. states in 2025

Source: ISU, UMN, and KSU VDLs; SDSU-ADRDL, OH and Purdue ADDLs.

SiteState	First Most Frequent	Second Most Frequent	Third Most Frequent
IA	L1C.5 1-4-4	L1C.2 1-2-4	L1C.5 1-3-4
IL	L1A 1-4-2	L1C.5 1-4-4	L1A 1-7-4
IN	L1A 1-7-4	L1C.5 1-10-4	L1A 1-4-4
KS	L1A 1-7-4	L1H 1-8-4	L1H 1-7-4
MN	L1C.5 1-4-4	L1C.2 1-2-4	L1H 1-12-2
MO	L1C.5 1-4-4	L1C.5 1-7-4	L1C.2 1-2-4
NC	L1A 1-7-4	L1A 1-4-4	L5A 2-1-2
NE	L1C.5 1-4-4	L1C.5 1-2-4	L1A 1-7-4
OH	L1C.5 1-4-4	L1A 1-4-4	L1A 1-7-2
OK	L1A 1-7-4	L1C.5 1-4-4	L1H 1-8-4
SD	L1C.5 1-4-4	L1C.5 1-2-4	L1C.2 1-2-4

Figure 1. Top: **Left**: Number of PRRSV ORF5 sequences detected by age category; **Right**: Number of PRRSV ORF5 sequences with less than 95% similarity after BLAST analysis with the sequences in the SDRS database (Sequences with more than 6 ambiguities, sequences with less than 597 nucleotides or higher than 606 nucleotides are not included in this analysis); **Bottom** *Left*: 15 PRRSV ORF5 sequences most frequent detected by Lineage and RFLP; *Right*: Most frequent detected PRRSV ORF5 sequences in 2025 by lineage and RFLP at U.S. state level.

SDRS Advisory Group highlights:

- During July 2025, The states with higher number of PRRSV L1C.5 (variant) detections were detected IA, MO, MN, NE, SD, CO, IN, OH, IL, KS, OK (respective number of sequences: 175, 29, 28, 7, 7, 3, 2, 2, 1, 1, 1).
- In July L1C.5 1-4-4 (224) was the PRRSV sequence most detected in the U.S., followed by L1C.2 1-2-4 (24), and L1A 1-7-4 (17);
- Click on the links here to access the PRRSV genotype dashboard and the SDRS Blast tool to compare your PRRSV ORF5 sequence with the SDRS database.
- After the first detection in North Carolina in June, PRRSV L1C.2 had 8 additional cases detected. The age category associated with the sequences was 3 from the breeding herd, 2 from the nursery, and 3 from grow-finishing.

Topic 2 – Enteric coronavirus RNA detection by RT-qPCR

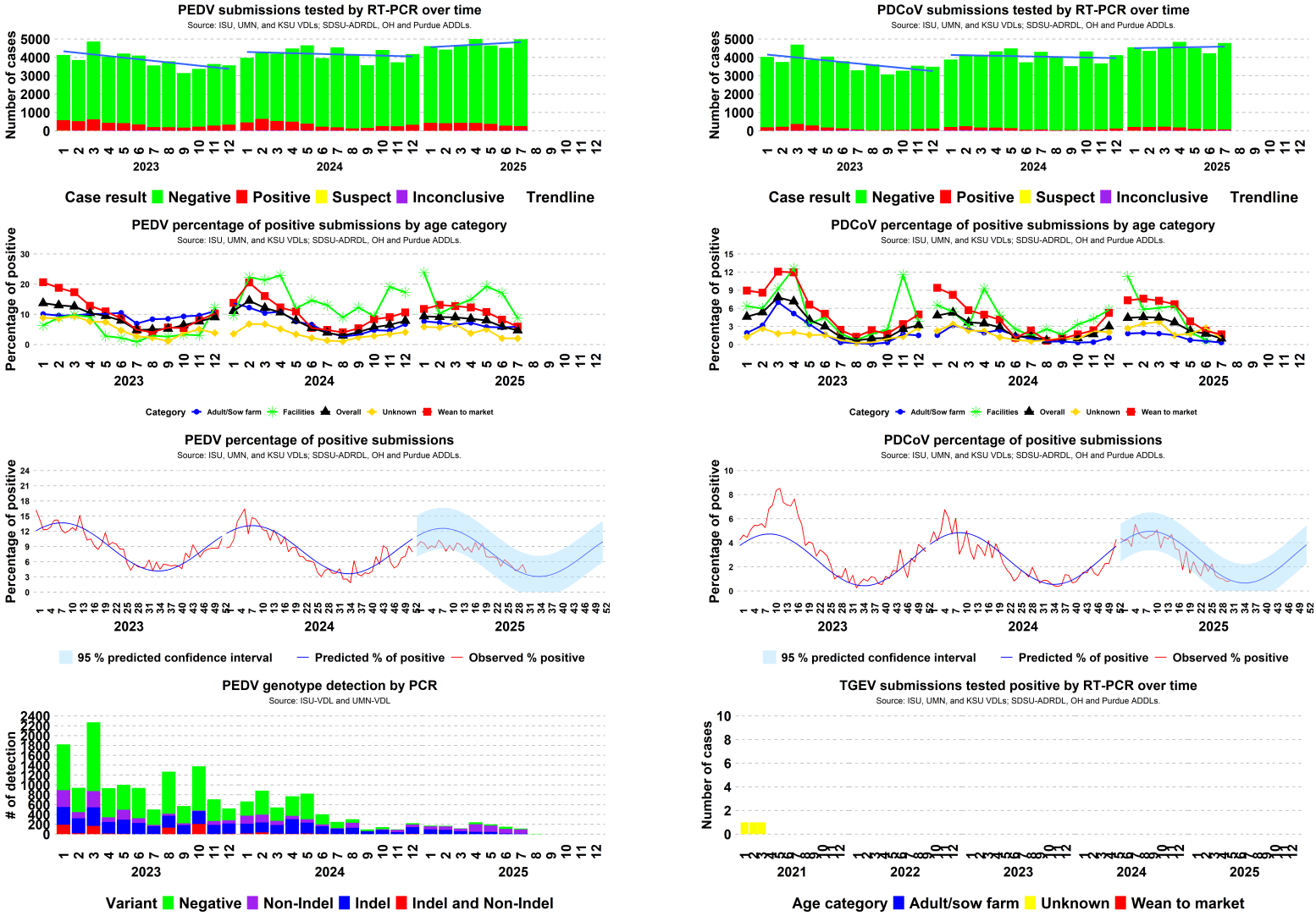
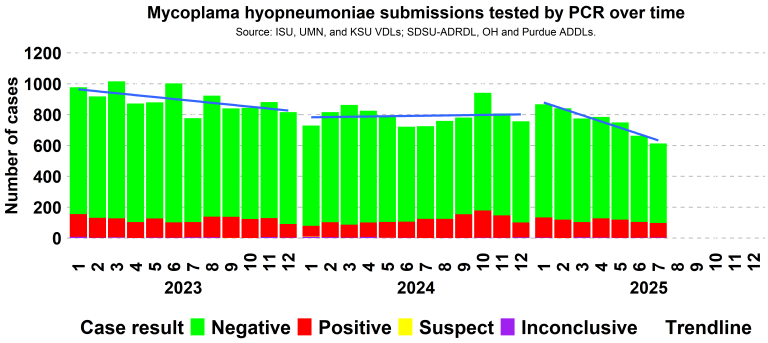


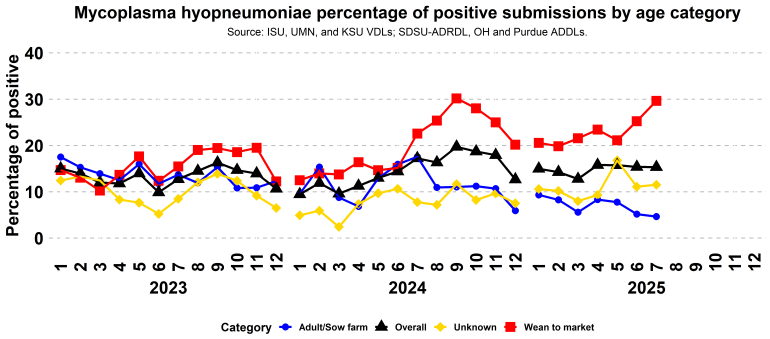
Figure 1. Top: *Left PEDV*; *Right PDCoV* cases tested by RT-PCR over time; **Second from top**: *Left PEDV*; *Right PDCoV* percentage of positive PCR positive results, by age category over time. Facilities are cases submissions from packing plants, truck washes, and vehicles. **Third from top**: *Left PEDV*; *Right PDCoV* expected percentage of positive results for cases tested by RT-PCR and 95% confidence interval for 2025 predicted value. **Bottom** *Left*: Number of PEDV genotype detection over time; *Right*: Number of TGEV positive cases by age category.

SDRS Advisory Group highlights:

- Overall, 4.69% of 4,988 cases tested PEDV-positive in July, similar to 5.96% of 4,516 in June;
  - Positivity in the adult/sow category in July was 5.94% (93 of 1,565), similar to 5.68% (81 of 1,425) in June;
  - Positivity in the wean-to-market category in July was 5.92% (98 of 1,656), a moderate decrease from 8.24% (140 of 1,699) in June;
- Positivity in the facilities category in July was 8.74% (9 of 103), a substantial decrease from 17.05% (22 of 129) in June;
  - Overall PEDV-percentage of positive cases was 3 standard deviations above state-specific baseline in IN;
  - Overall, 0% of 6 samples had mixed PEDV genotype detection in August, similar to 0% of 114 in July;
- Overall, 1% of 4,781 cases tested PDCoV-positive in July, similar to 1.8% of 4,227 in June;
  - Positivity in the adult/sow category in July was 0.33% (5 of 1,520), similar to 0.58% (8 of 1,378) in June;
  - Positivity in the wean-to-market category in July was 1.68% (26 of 1,545), similar to 2.26% (35 of 1,550) in June;
- Positivity in the facilities category in July was 0% (0 of 103), similar to 0.78% (1 of 128) in June;
- Overall PDCoV-percentage of positive cases was 3 standard deviations above state-specific baseline in IN, OH and NC;
- There was 0 positive case for TGEV RNA-PCR in July, 2025 over a total of 4,660 cases tested. It has been 53 months (with a total of 196,803 cases tested) since the last TGEV PCR-positive result;

Topic 3 – Detection of *M. hyopneumoniae* DNA by PCR.





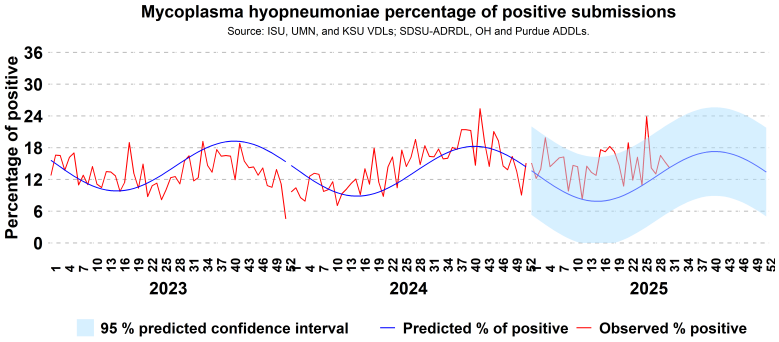
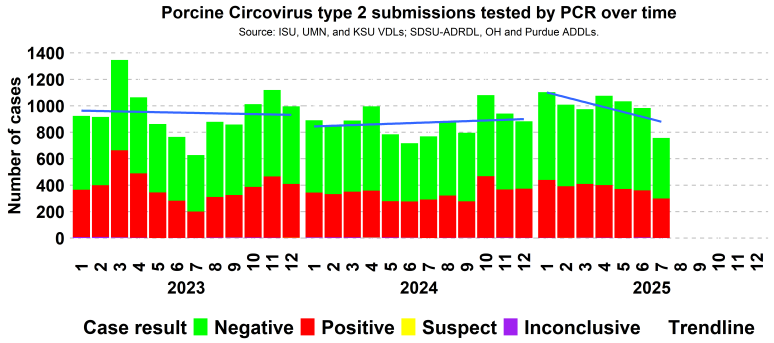


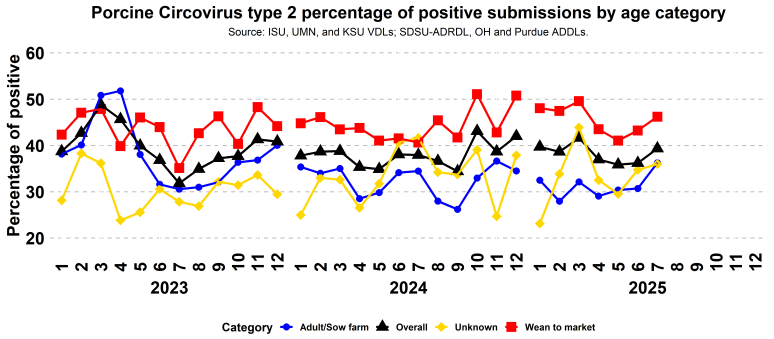
Figure 3. Top: *Left* MHP; MHP Case results tested by PCR over time. *Right* MHP PCR-positive results, by category over time. **Bottom:** expected percentage of positive results for MHP by PCR and 95% confidence interval for 2025 predicted value, based on weekly data observed in the previous 5 years.

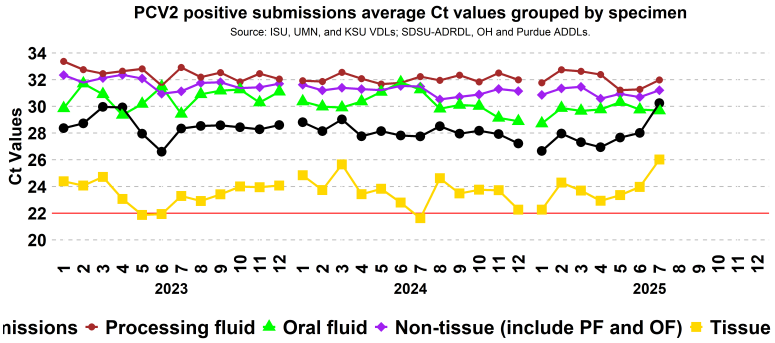
SDRS Advisory Group highlights:

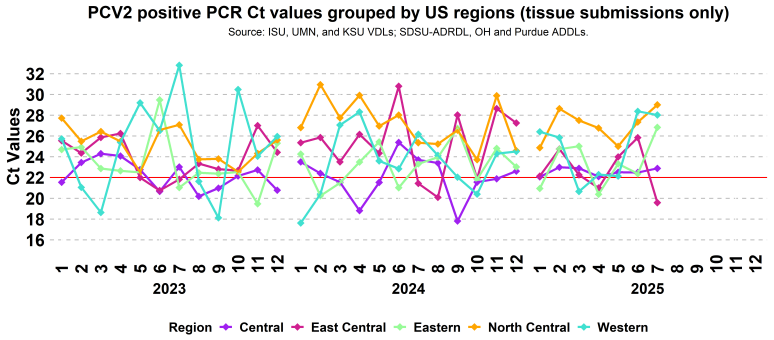
- Overall, 15.33% of 613 cases tested *M. hyopneumoniae*-positive cases in July, similar to 15.38% of 663 in June;
  - Positivity in the adult/sow category in July was 4.67% (12 of 257), similar to 5.19% (12 of 231) in June;
  - Positivity in the wean-to-market category in July was 29.65% (67 of 226), a moderate increase from 25.25% (75 of 297) in June;
- Overall MHP-percentage of positive cases was 3 standard deviations above state-specific baseline in MN;
- In July 2025, the lowest percentage of positive submissions for *M. hyopneumoniae* from the category Adult/sow farm was registered. Since June 2012, *M. hyopneumoniae* haven't had such low positivity in the Adult/sow farm category. More information about the trend of MHP decrease is on page 8 of the report.

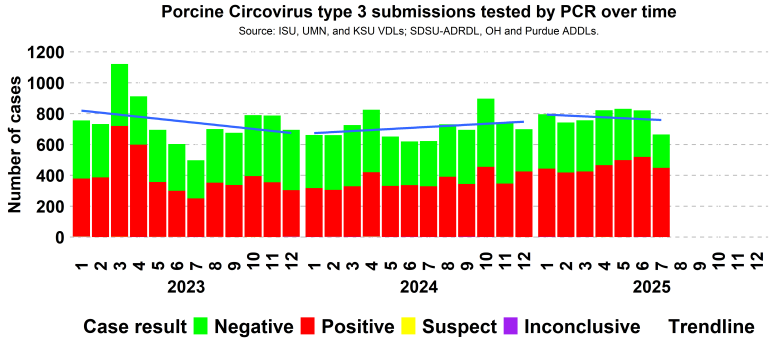
Topic 4 – Detection of Porcine Circoviruses type 2 and 3 DNA by PCR.











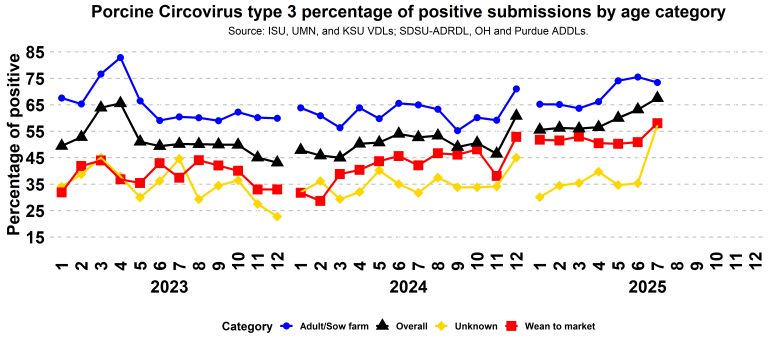


Figure 1. Top: *Left*: Results of PCV2 PCR cases over time; *Right*: PCV2 PCR-positive results, by category over time. **Middle**: *Left*: Average Ct values of PCV2 submissions by specimen; *Right*: Average Ct values of PCV2 tissue submissions by U.S. region; Central (IA), East Central (IL, IN, MO and WI), Eastern (AL, AR, CT, DE, FL, GA, KY, LA, MA, ME, MD, MI, MS, NC, NH, NJ, NY, OH, PA, RI, SC, TN VA, VT and WA), North Central (MN, ND and SD), Western (AK, AZ, CA, CO, HI, ID, KS, MT, NM, NV, OK, OR, TX, UT, WA and WY). Red line represent Ct threshold calculated using methodology based on Dx codes. **Bottom** *Left*: Results of PCV3 PCR cases over time; *Right*: PCV3 PCR-positive results, by category over time.

SDRS Advisory Group highlights:

- Overall, 39.37% of 757 cases tested PCV2-positive in July, a moderate increase from 36.22% of 983 in June;
  - Positivity in the adult/sow category in July was 36.26% (161 of 444), a substantial increase from 30.74% (150 of 488) in June;
  - Positivity in the wean-to-market category in July was 46.22% (110 of 238), a moderate increase from 43.25% (173 of 400) in June;
  - In the month of July, the regions with the lowest PCV2 average Ct values in tissue submissions was East Central (5 submissions; average Ct 19.6), Central (15 submissions; average Ct 22.9), Eastern (4 submissions; average Ct 26.8), Western (3 submissions; average Ct 28), and North Central (18 submissions; average Ct 29);
- Overall, 67.52% of 665 cases tested PCV3-positive in July, a moderate increase from 63.22% of 821 in June;
  - Positivity in the adult/sow category in July was 73.48% (302 of 411), a moderate decrease from 75.54% (349 of 462) in June;
  - Positivity in the wean-to-market category in July was 58.06% (108 of 186), a substantial increase from 50.9% (141 of 277) in June.
- The PCV3 overall percentage of positive submissions increased sharply in July, surpassing PCV2 overall positivity by 18%. Most of the PCV3 positive samples in July were processing fluids (310/475), followed by oral fluids (85/475).

Topic 5 – Detection of Influenza A Virus (IAV) RNA by RT-PCR.

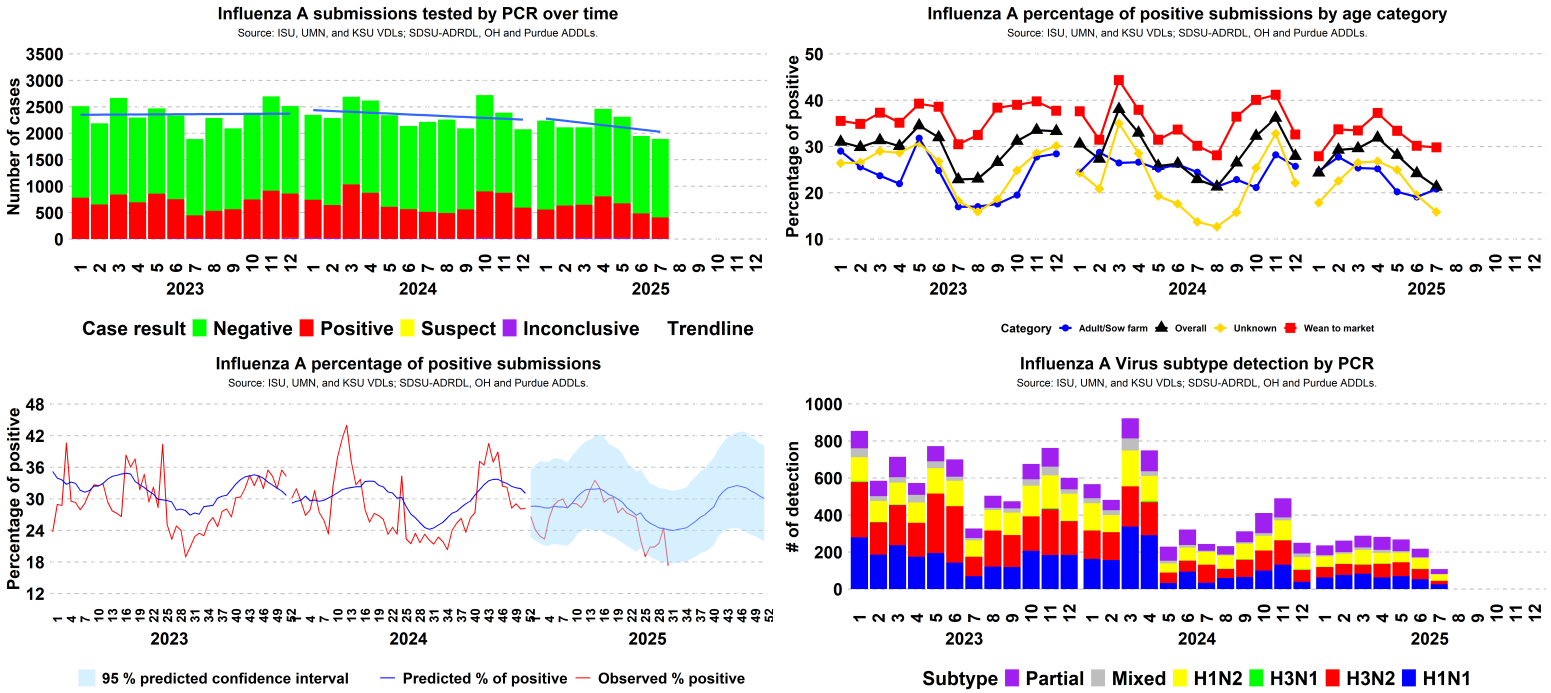


Figure 3. Top: *Left* Results of IAV PCR cases over time. *Right* Percentage of IAV PCR-positive results, by category over time. **Bottom:** *Left* expected percentage of positive results for IAV by PCR and 95% confidence interval for 2025 predicted value, based on weekly data observed in the previous 5 years. *Right* Number of IAV subtyping PCR detection over time; (Partial - only hemagglutinin or neuraminidase region detected; Mixed - 3 or more haemagglutinin and neuroamnidase regions detected. i.e., "H1 H3 N1").

SDRS Advisory Group highlights:

- Overall, 21.29% of 1,893 cases tested IAV-positive cases in July, a moderate decrease from 24.22% of 1,949 in June;
  - Positivity in the adult/sow category in July was 20.82% (81 of 389), similar to 19.12% (87 of 455) in June;
  - Positivity in the wean-to-market category in July was 29.82% (178 of 597), similar to 30.15% (265 of 879) in June.
- Overall IAV-percentage of positive cases was within state-specific baselines in all 11 monitored states;
- Overall, 2.78% of 108 samples had mixed subtype detection in July, similar to 2.29% of 218 in June.

Topic 6 – Confirmed tissue cases etiologic/disease diagnosis at the ISU-VDL.

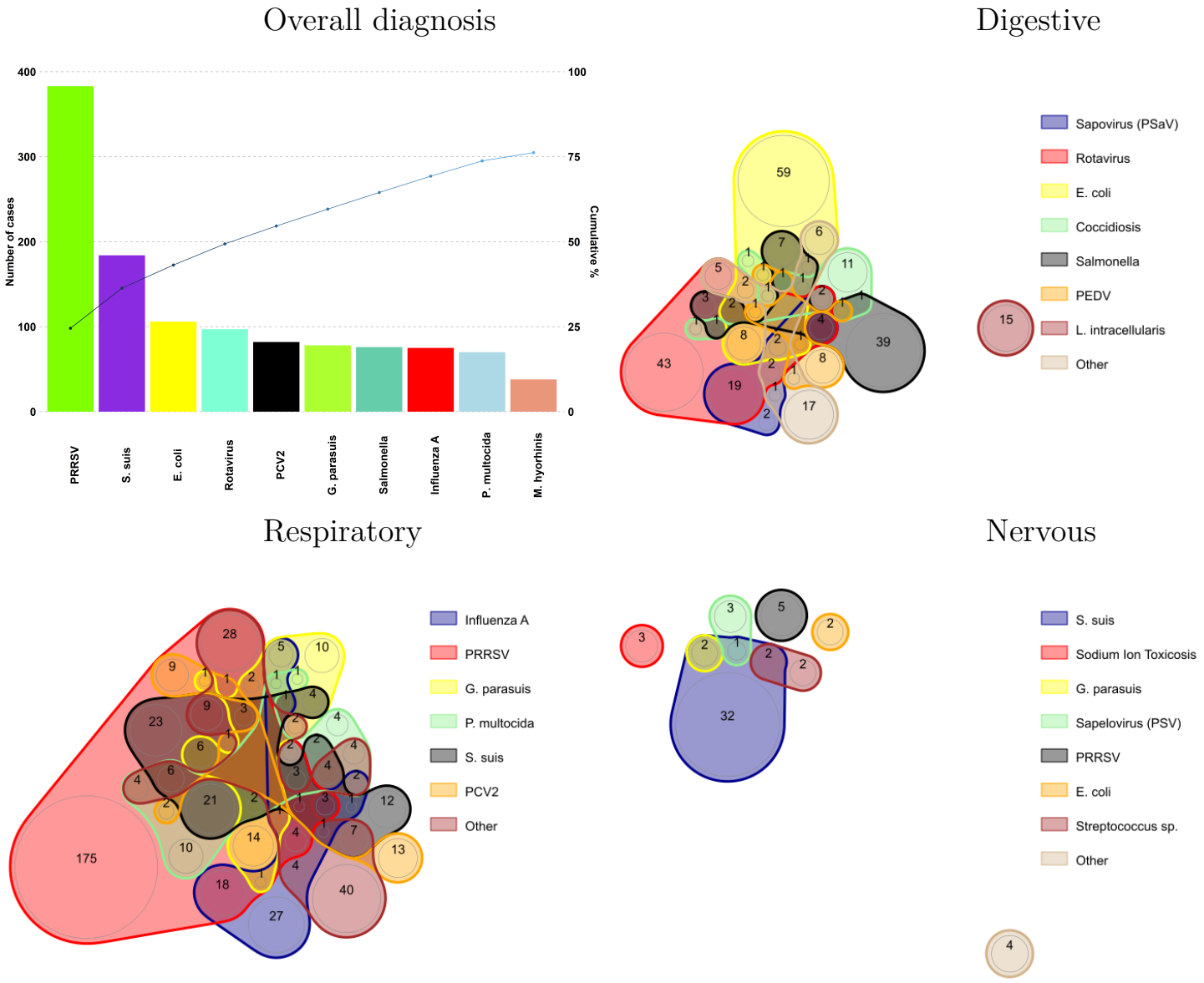


Figure 4. ISU-VDL most frequent overall confirmed tissue disease diagnosis. The presented system is described in the title of the chart. Colors represent one agent; line intersections present diagnosis of 2 or more agents within a submission. Only the most frequent etiology/disease are presented. Less frequent etiology/disease are grouped as "other". Non-confirmed diagnoses are not presented. This work is made possible due to the commitment and teamwork from the ISU-VDL diagnosticians who assign standardized diagnostic codes to each case submitted for histopathology: Drs. Almeida, Burrough, Derscheid, Gauger, Magstadt, Piñeyro, Siepker, Madson, Thomas, Gris and previous VDL diagnosticians who have contributed to this process.

Note: Disease diagnosis takes 1 to 2 weeks to be performed. The graphs and analysis contain data from June. 1 to July. 25, 2025.

SDRS Advisory Group highlights:

• PRRSV (383) led cases with confirmed etiology, followed by *S. suis* (184), and *E. coli* (106). PRRSV (350 of 820) led the number of confirmed respiratory diagnoses, Rotavirus (97 of 376) lead the number of confirmed digestive diagnoses, and *S. suis* (37 of 61) led the number of confirmed neurological diagnoses.

• ISU-VDL data showed that *Mycoplasma hyopneumoniae* (MHP) had the first and second quarters of 2025 with the lowest number of confirmed tissue diagnoses, continuing a trend of decreasing diagnosis numbers associated with MHP.

Note: *The SDRS is a collaborative project among multiple VDLs in the US swine industry. The VDL collaborators and industry partners are all invited to submit content to share on this bonus page related to disease prevention, control, and management. Stay tuned for more content in future editions.*

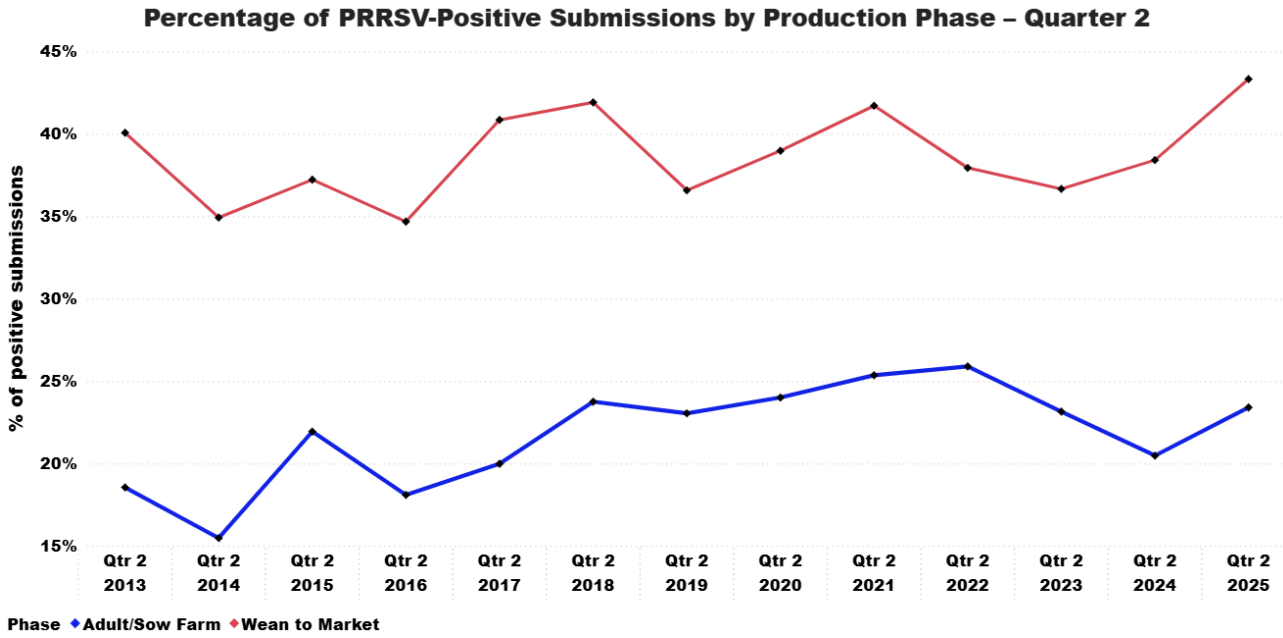
The second quarter of 2025 registered the highest PRRSV detection in the Wean-to-market category since 2013

Guilherme Cezar[1], Kinath Rupasinghe[1], Daniel Linhares[1], Giovani Trevisan[1]

1 - Iowa State University, Ames, IA, USA.

The Swine Disease Reporting System actively monitors the atypical PRRSV activity, mainly occurring in the wean-to-finish sites. The second quarter of 2025, which includes data from April, May, and June, had the highest wean-to-market percentage of positive submissions since 2013. The category consists of submissions identified as coming from a farm type Nursery and Grow-finish, and had a 43.3% (3,379 of 7800) positive submissions. By order, the states with the highest number of PCR-positive cases in the second quarter were Iowa (1,949), Minnesota (358), Missouri (201), Indiana (193), and Nebraska (167). Regarding PRRSV strains, the variant 1C.5.32 became the most predominant detected. Regarding the L1C.5 variants, there were 2,644 detections in 2025, with 48% coming from the wean-to-market category, followed by Sow farms (32%) and Unknown sites (20%). The L1C.5 represents 59.7% of all the PRRSV ORF5 sequences detected in 2025.

Figure 1. Percentage of positive submissions by age category since 2013, including only cases from the year's second quarter.



The confirmed tissue diagnosis cases, shared with the SDRS by the Iowa State Veterinary Diagnostic Laboratory, also support the trend of increased PRRSV activity. This database includes tissue submissions analyzed by diagnosticians that assess macroscopic and microscopic lesions, diagnostic tests performed, and clinical history to assign an etiology code. Historically, the confirmed tissue diagnosis registered the highest number of PRRSV confirmed diagnostic cases in the second quarter of 2025. Most cases came from Iowa, North Carolina, Indiana, and Missouri. These findings support field comments that the industry faces significant challenges with PRRSV at an atypical time of the year. Historically, there was a drop in PRRSV cases during summer, i.e., June, July, and August. Summer just started in June, data is indicating an atypical increased in activity during the first weeks of summer.

Figure 2. Number of PRRSV confirmed tissue diagnosis including only cases from the year's second quarter