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Swine Enteric Coronavirus Disease (SECD) Situation Report October 1, 2015

Analysis of data received as of September 29, 2015

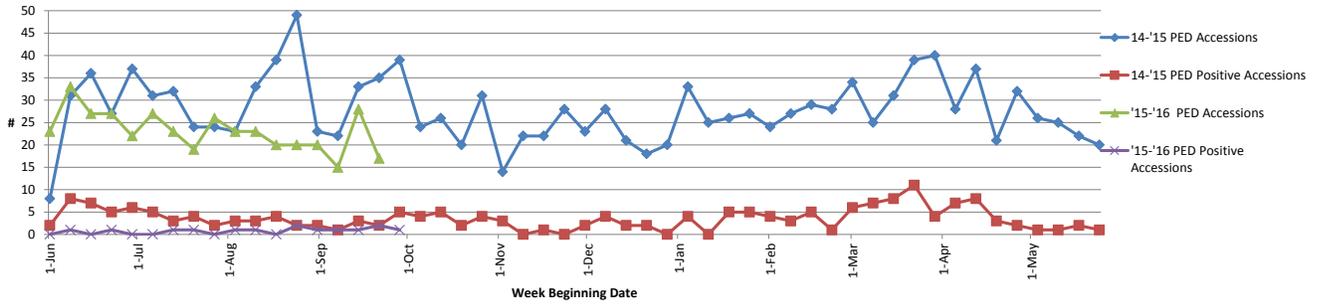
This report provides an update of Indiana activities under the USDA Federal Order, Reporting, Herd Monitoring, and Management of Novel Swine Enteric Coronavirus Diseases, effective June 5, 2014. The Indiana State Board of Animal Health (BOAH) will issue this report on a monthly basis to summarize data on all porcine epidemic diarrhea virus (PEDv) and porcine delta coronavirus (PDCoV) testing conducted at the Purdue University Animal Disease Diagnostic Laboratory, the Iowa State University Veterinary Diagnostic Laboratory, and the University of Minnesota Veterinary Diagnostic Laboratory. These laboratories conduct an estimated 98% of all SECD testing for Indiana premises and send these results directly to BOAH. Some additional information on testing performed at other laboratories is obtained using the USDA SECD database. Any information derived from other sources is clearly identified and explained.

General information about the SECD monitoring and control program in Indiana is provided on the BOAH website at: www.in.gov/boah/2680.htm.

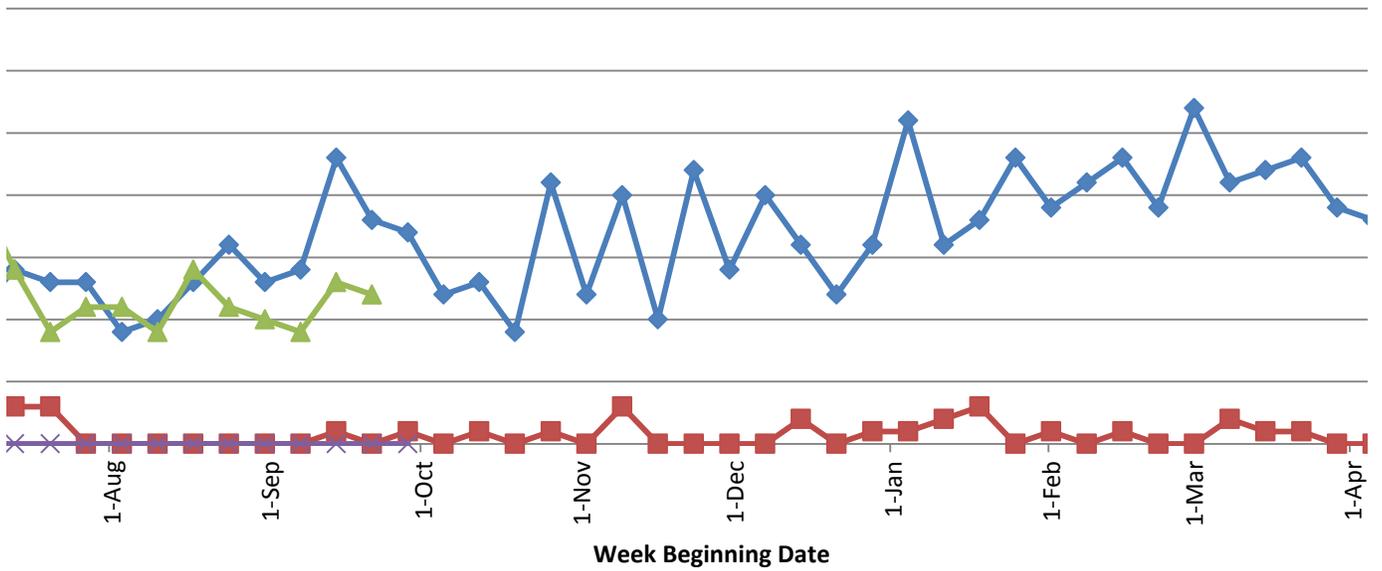
Summary Data – June 5, 2014 through September 29, 2015

Since June 5, 2014, the number of PED accessions ranged from 8 to 49 and averaged 27 accessions per week; PED positive accessions have ranged from 0 to 11 and averaged almost 3 positives per week. During this same time period, the number of PDCoV accessions ranged from 0 to 30 and averaged 15 accessions per week; PDCoV positive accessions have ranged from 0 to 3 and averaged less than one positive per week. Each accession represents a test or set of tests performed on specimens from an individual premises. A positive accession is defined as an accession where at least one sample tested positive, and these may occur on a premises that previously tested positive.

PED Accessions by Week

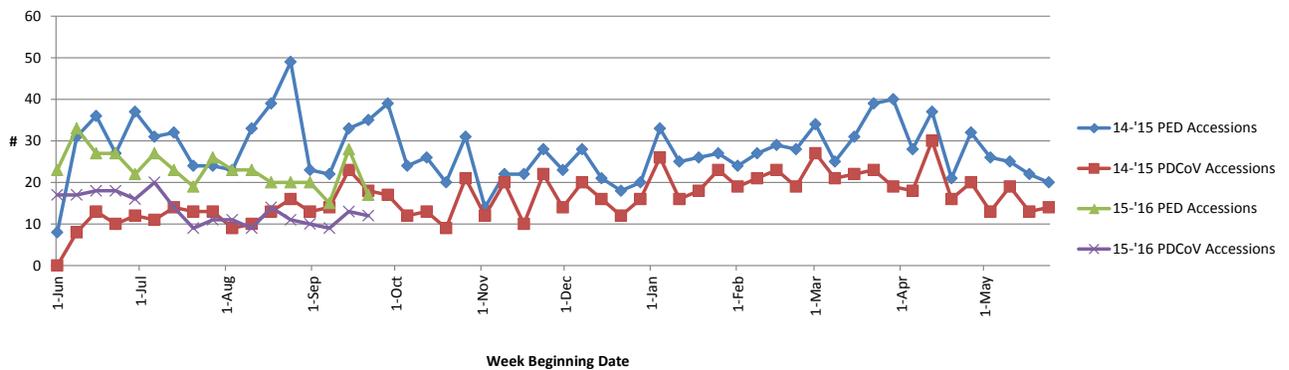


PDCoV Accessions by Week

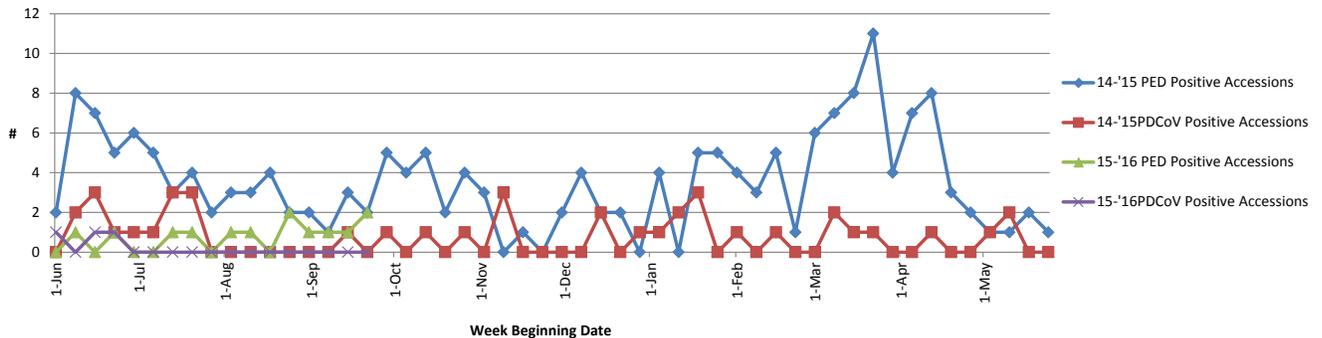


Although the number of accessions submitted for SECD testing has fluctuated from week to week since the beginning of the federal order, we have seen a decline in PED accessions at the end of 2014 that returned March and April 2015. PDCoV accessions have been on a gradual rise. The upward trend in PDCoV submissions may be due to the fact that many labs have bundled testing for PED, PDCoV, and TGE. Now that we have passed a year, we are starting to see the overlap to compare our trends. Summer 2015 has a lower level of PED accessions than we saw in 2014. The PED positive accession level has also been lower through the summer. The positive PDCoV accessions have remained fairly consistent since the original reports in June 2014.

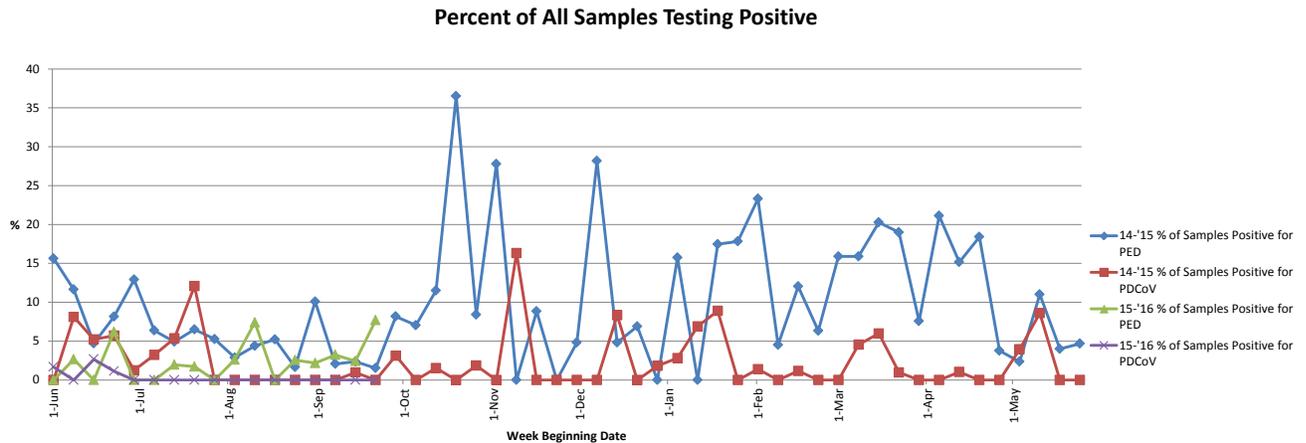
Trend in Number of Accessions Submitted by Week



Trend in Positive Accessions by Week



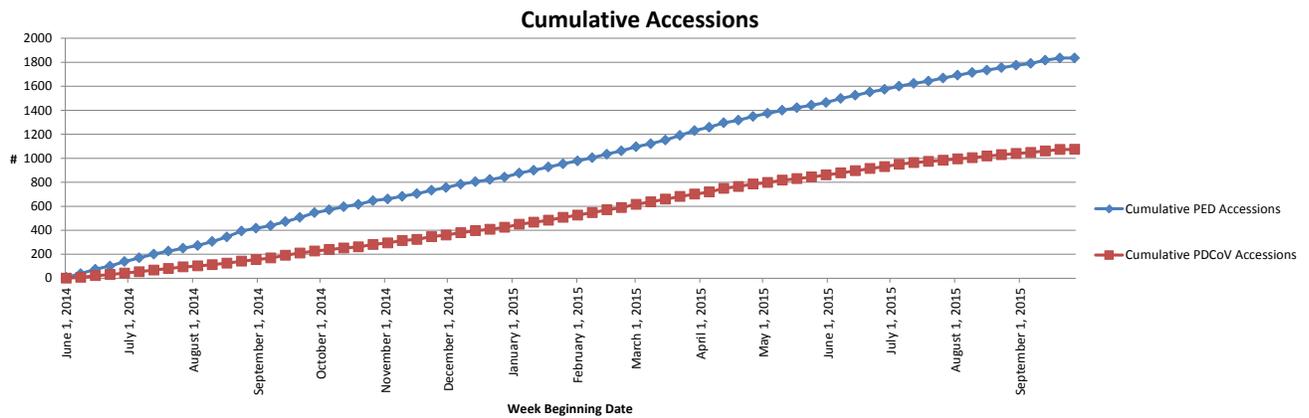
In an effort to offer a slightly different perspective on the data, the following graph shows the percent of all samples tested each week that were positive. In contrast to the preceding graphs that focused on the total number of accessions and positive accessions, the graph below is heavily influenced by high-volume submitters and submissions containing a large number of positive samples. However, over time this graph may better demonstrate seasonal trends in disease and the long term effect of herd clean-up efforts.



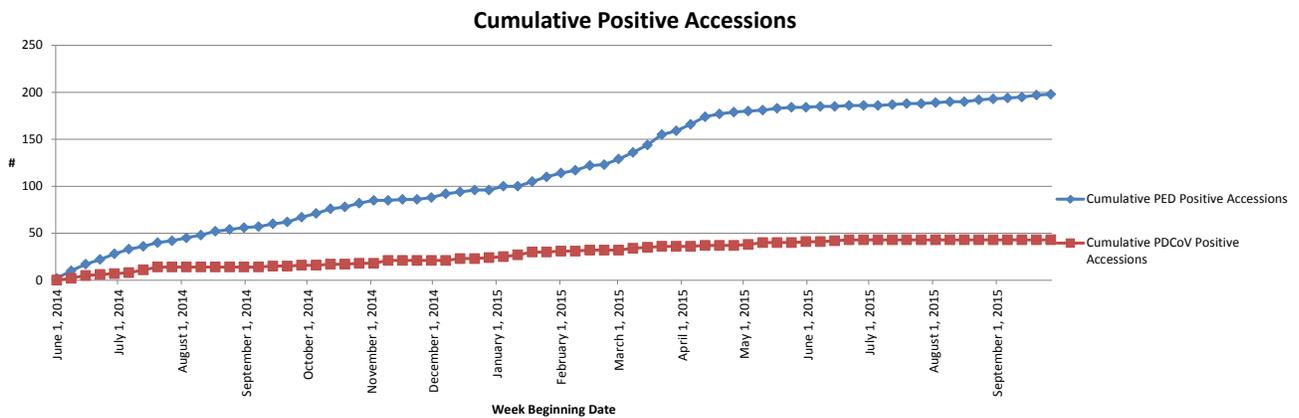
Cumulative Testing Data – June 5, 2014 through September 29, 2015

	PED	PDCoV	Change from last Report— PED*	Change from last Report—PDCoV*
Total Number of Accessions	1836	1074	279	156
Number of Positive Accessions	198	43	12	0
Number of Negative Accessions	1638	1031	267	155
Total Number of Samples Tested	7694	4474	1081	671

*This report contains three months of new data rather than one month as before.



Of all PED accessions, 10.7% have contained at least one sample that tested positive. This is true for only 4.0% of all PDCoV accessions. These percentages have remained relatively constant since the first Indiana SECD Report was completed in early October, 2014. The cumulative number of accessions submitted for SECD testing has increased steadily for both PED and PDCoV. In contrast, the cumulative number of PDCoV positive accessions has remained the same more frequently than the PED positive accessions.



Cumulative Geographic Distribution Data – June 5, 2014 through Sept. 29, 2015

SECD testing has been distributed throughout the state, with results reported for 67 of 92 counties (72%). This mirrors the geographic distribution of commercial swine operations in Indiana. While the majority of premises and counties have tested for both PED and PDCoV, the majority of positive test results for both premises and counties have been for PED only. 30% of the premises and 70% of the counties that have submitted accessions for testing have had at least one positive result.

	Number Tested	Number with Positive Results
Premises	342	104
PED Only	85	80
PDCoV Only	4	9
PED+PDCoV	253	15
Counties	67	47
PED Only	4	29
PDCoV Only	0	5
PED+PDCoV	63	13

The maps on the following pages compare the overall results for all premises in the county that have conducted testing for PED or PDCoV, in the summers of 2014 and 2015.

PDCoV County Maps

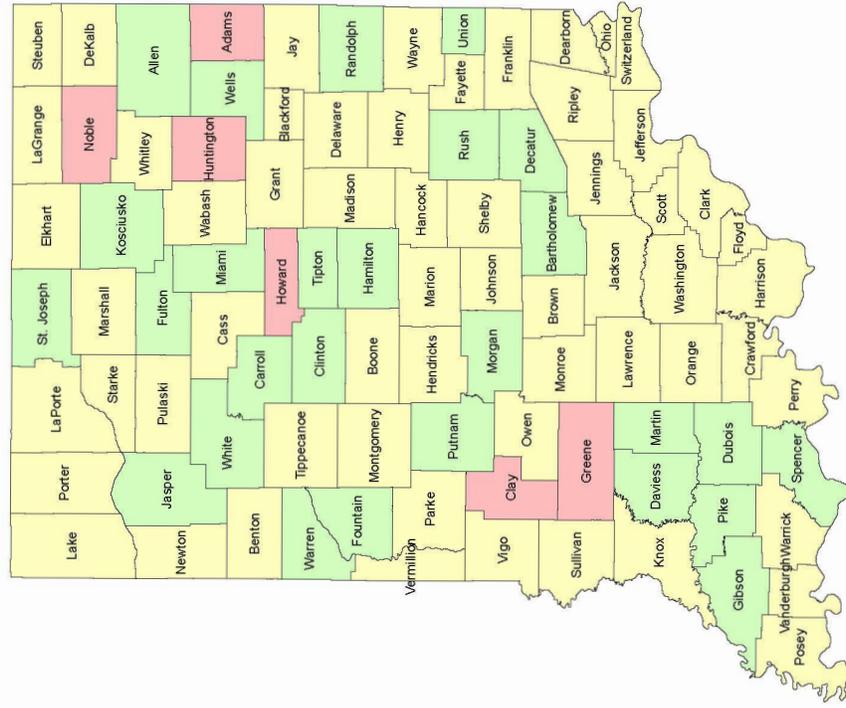
During 2014 Q3, there were 6 counties with positive PDCoV accessions. In contrast, 2015 Q3 had NO PDCoV positive accessions in Indiana. In comparison, the number of counties with negative accessions reported for 2014 Q3 and 2015 Q3 are quite similar, but when comparing, you will note some county differences in which counties tested in 2015 Q3 versus 2014 Q3.

PED County Maps

It is interesting to look at the same summer months of 2014 and 2015 and compare how testing occurred in the Indiana counties during the 3rd Quarter. There were only 5 counties with positive accessions for PED in 2015 Q3 in comparison to the 20 counties with positive accessions in 2014 Q3. Of the 5 counties with positive accessions in 2015 Q3, 3 of them were positive in 2014 Q3. Additionally, 11 out of the 20 counties with positive accessions in 2014 Q3 had only negative accessions during 2015 Q3.

Indiana PDCoV Testing QTR #3 2014

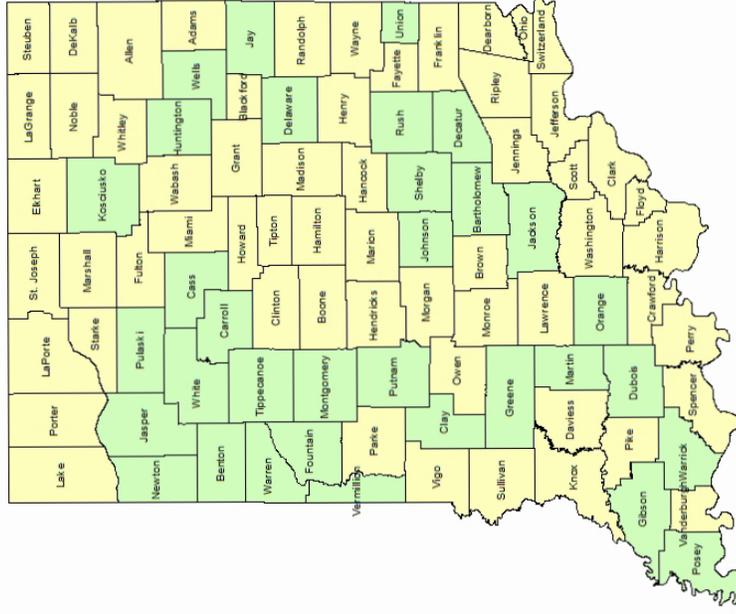
PDCoV Testing 07.01.14 through 9.30.14
6 Positive Counties - 187 Tests



Indiana Counties - Pos Tests
 Indiana Counties - Neg Tests Only PDCoV
 Indiana Counties

Indiana PDCoV Testing QTR #3 2015

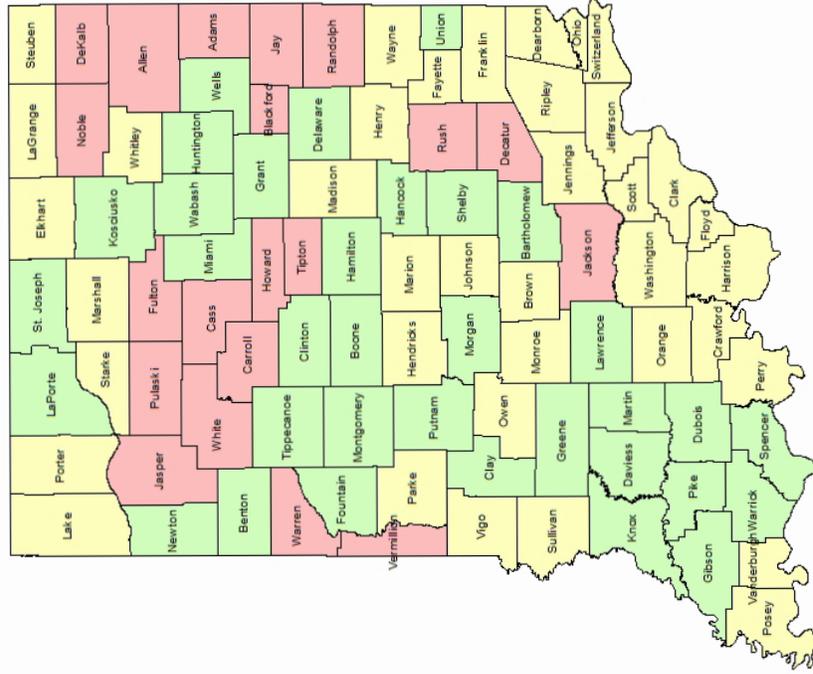
PDCoV Testing 07.01.15 through 9.30.15
150 Negative Tests



Indiana Counties Neg Tests
 Indiana Counties

Indiana PED Testing QTR #3 2014

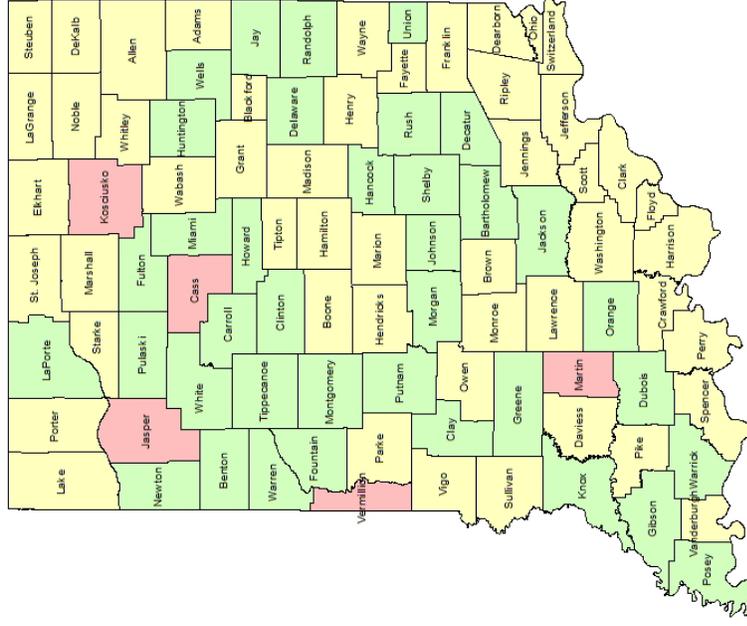
PED Testing 07.01.14 through 9.30.14
20 Positive Counties



- Indiana Counties - PED Pos Tests 7.1.14 thru 9.30.14
- Indiana Counties Neg Tests
- Indiana Counties

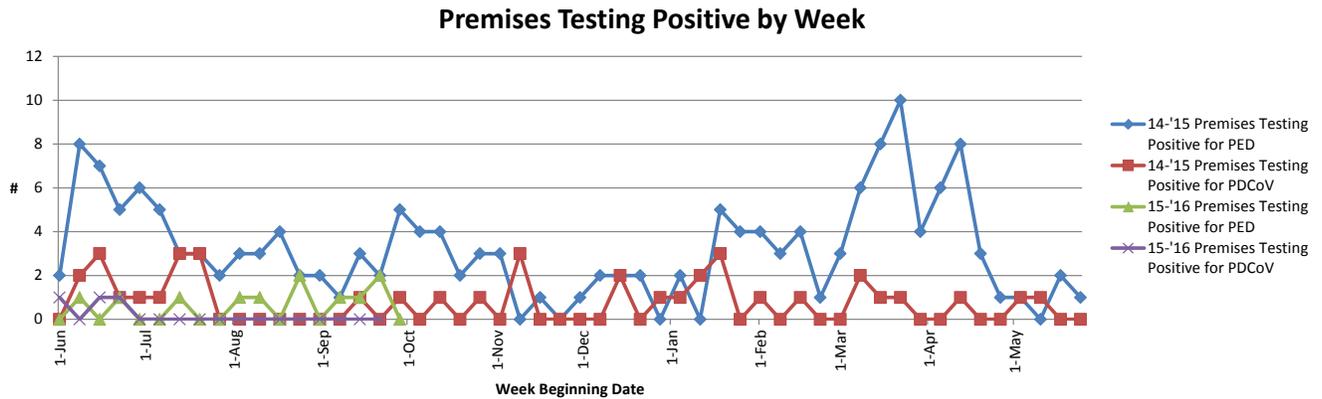
Indiana PED Testing QTR #3 2015

PED Testing 07.01.15 through 9.30.15
5 Positive Counties

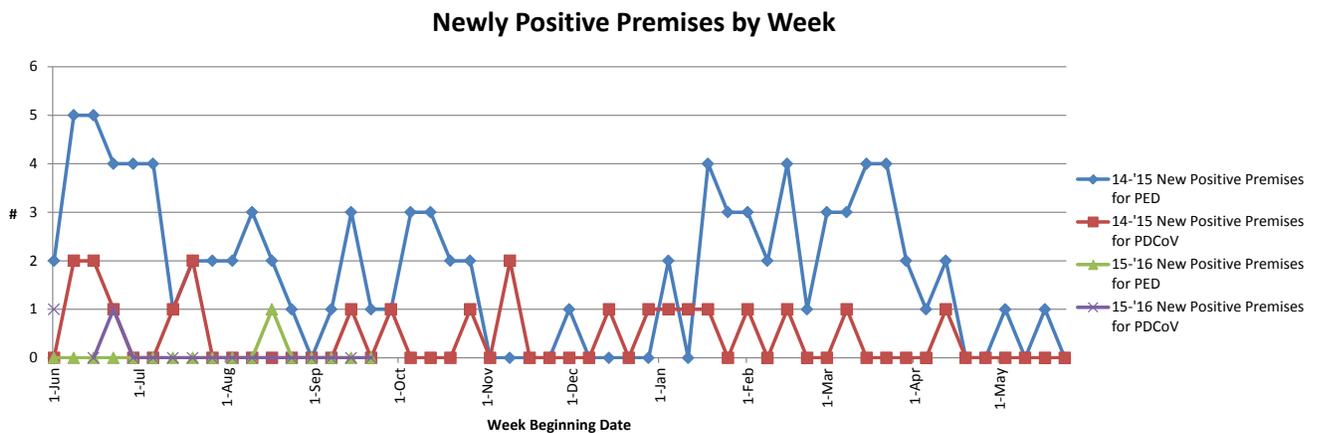


- Indiana Counties - Pos Tests 7.1.15 thru 9.30.15
- Indiana Counties - Neg Tests Only
- Indiana Counties

In addition to the overall number of premises testing positive and the number of premises positive based on the results of their last test, it is also informative to consider the distribution of premises testing positive by week. The first graph below depicts all premises testing positive each week. In this graph, a premises is counted as positive once per week for every week that it has a positive test result.



The second graph depicts only premises that have had their first positive test result in a given week. Once a premises is counted as positive, it is not counted again in any subsequent week. Although the two graphs are not identical, and despite the differing criteria for inclusion of a given premises, the two graphs follow a similar pattern of peaks and dips.



SECD Data Available from USDA

The USDA releases a weekly summary report of SECD testing occurring within the United States. You may access the reports via the USDA APHIS website. At this website, a link to the “Weekly Situation Report” and “Situation Report Archive” may be found midway down the page, under the “SECD Reports” header.

A brief summary of the most recent Indiana data from USDA is included below; however, these numbers will likely differ from the numbers presented above. It is important to note that the USDA data does not include any environmental samples not directly associated with a farm site and live pigs (e.g., feed or swabs of livestock trailers, feed mills, markets, etc). In addition, the numbers reported here reflect only those accessions that have gone through the full USDA verification process, which typically takes about two weeks to complete.

	PED	PDCoV	PED + PDCoV
Number of Confirmed* Positive Premises	61	5	8
Number of Presumptive** Positive Premises	25	2	3

**Confirmed positive cases must have exhibited clinical signs and had a positive test*

***Presumptive positive cases have a positive test, but the animals did not exhibit clinical signs*

The table above provides a current count of Indiana’s premises classifications, as determined by the USDA criteria. The following pie chart represents newly positive premises since January 1, 2015 that have been through the USDA verification process and have been classified by production type by the herd veterinarian. As you can see from the pie chart, the largest representation comes from the Wean to Finish category.

Category of Verified Newly Positive Premises Since Jan. 1, 2015

■ Sow/Breeding ■ Nursery ■ Finisher ■ Farrow to Finish ■ Wean to Finish

