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**Indirect immunofluorescence test for detection of antibodies to Seneca Valley virus
Minnesota Veterinary Diagnostic Laboratory**

An indirect immunofluorescence (IFA) test was developed for the detection of antibodies to Seneca Valley virus (SVV). Monolayers of Human Lung Cancer cells contained in 96 well microtiter plates were infected with SVV isolated from one of the diagnostic cases submitted to Minnesota VDL. Following infection, plates were fixed and serial two fold dilutions of serum samples were added. After appropriate incubation and washing, anti-porcine FITC conjugate was added. After counterstaining, the plates were examined under a fluorescent microscope. Virus-specific fluorescence was observed in positive serum samples and no fluorescence was observed in negative serum samples.

For validation, samples were collected from a farm that was confirmed to be infected with SVV by RT-PCR. Serum samples were obtained from 30 animals at 1, 2, 3, 5, and 8 weeks post infection. At 1 week post infection, 28 of 30 animals were positive for SVV antibodies by the newly developed IFA. Similar results were obtained when samples from other time points were tested. A total of 155 samples collected at different times were tested using IFA. Out of these, 140 samples were positive and 6 samples were negative. Nine samples were interpreted as suspect. The sensitivity of the test was calculated as 90.3%. These findings are consistent with those of Yang et al. (2012) who reported that SVV antibody were detectable by cELISA in experimentally infected pigs at 1 week post inoculation and remained until the end of the study (at 57 days post inoculation).

For specificity, a total of 60 samples were tested; 30 from a farm in which pigs were not infected and another 30 from a farm with negative history for common swine pathogens. All these samples were negative indicating that IFA was 100% specific.

This test will be offered through the Virology Laboratory as a diagnostic test at VDL.

References:

Yang, Ming, van Bruggen, R., and Xu, W. 2012. Generation and diagnostic application of monoclonal antibodies against Seneca Valley virus. *Journal of Veterinary Diagnostic Investigation*, 24 (1) 42-50.

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