Evaluation of porcine epidemic diarrhea virus (PEDv) production impact and management strategies for stability in sow herds

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Introduction
Porcine epidemic diarrhea virus (PEDv) has been spreading with steadily-increasing new cases in the United States since the first diagnosed farm was confirmed in April, 2013. PEDv causes up to 100% suckling piglet mortality in breeding herds which results in massive economic losses for pork producers. Initial efforts to stabilize or eliminate the virus after infection have included various exposure programs inspired by the same types of programs used to eliminate a similar coronavirus, transmissible gastroenteritis virus (TGEv), in breeding herds. These programs have had variable success at controlling clinical signs. Their success in terms of time to PEDv stability and expected losses need to be evaluated for continued use in the swine industry.

Materials and methods
Thirty breeding herds that had experienced PEDv infection were invited to participate if undergoing a PEDv exposure program and were approximately 10 weeks into the epidemic.

Twenty six weeks of production data (piglets weaned per week) prior to onset of clinical signs of PEDv was collected to determine the number of weeks from the first PEDv detection until the production numbers returned to the average determined by those 26 weeks (TTBP). The total number of pigs not weaned from the time of infection below the expected average until TTBP was reached was then calculated.

Stability in a site was determined by PCR testing of fecal material from 30 litters (95%/10%) showing 4 negative results for 4 consecutive weeks. Producers were asked to begin testing 10 weeks post-infection and were given a short survey requesting information about the exposure program used to manage the PEDv epidemic in the sow herd. The methods, materials, consistency, and duration of the different exposure programs were compared and statistical analyses performed using SAS 9.4 package.

Preliminary results and discussion
The mean TTBP was ~6 weeks ranging from 4-8 weeks. These results were fairly consistent across the 18 sites participating at this time in the study. The production losses following PEDv infection showed an average of 1,688 pigs not weaned/1,000 sows ranging from 1,077 to 2,299 pigs not weaned/1,000 sows.

Final results will be presented at the AASV 2014 Annual Meeting.

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References