

PEDv in Japan - Key Points:

- Japan experienced PEDv in the 1990s. The disease re-emerged caused by a new phylogenetic strain similar to the Chinese and US original strains in October 2013. 817 farms (with 414,389 dead pigs) were affected by the end of August, 2014. In the second season, from September until now, 220 (new and re-infected) farms were infected with 54,116 dead pigs.
- Significant risk factors associated with incidence included: herd size, farm density, disinfectant management and vehicular traffic at the farm.
 - These risk factors are similar to what we reported from our NPB-funded study of lateral spread. Bob Morrison

Epidemiological factors associated to the spread of porcine epidemic diarrhea in Japan

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Objective: The objective of this study was to identify and compare risk factors associated with PED infection in locally and non-locally PED-exposed farms in Japan. A questionnaire was administered to a selection of pig farms located throughout Japan to collect data regarding herd management practices at the herd level.

Methods: Questionnaires were filled out between November 2013 (when the index case was reported) and August 2014. PED-positive farms (cases, n=124) were asked to provide information on their status and herd management practices for the two weeks prior to beginning of PED clinical signs. Negative farms (controls, n=128) were asked to fill the questionnaire considering the two weeks prior to a given reference date, which was set for each control farm based on PED occurrence on the town/prefecture in which the farm was located. Farms were categorized as “locally exposed” if they were located within a 5 km buffer from a PED-infected farm and “non-locally exposed farms”, otherwise. Logistic regression analysis was used to identify factors associated with PED infection, alternatively, for locally exposed, and non-locally exposed farms, separately, using PED status (positive/negative) as the dependent variable.

Results: For locally-exposed farms, associations occurred so that (1) an increase of 100 pigs in farm size increased PED risk in 2.7% (OR: 1.027; 95%CI: 1.019-1.036); (2) farms located within 100 meters from an infected farm were at almost 12 times higher risk for PED than farms located at least 1 km apart from the nearest infected farm (OR=11.7; 95%CI: 11.6-11.8); and (3) farms that did not allow the disinfectant for a contact time longer than 20 minutes had almost 3 times (OR: 2.748; 95%CI: 1.107-6.828) higher risk to be PED-infected than those that allowed for such contact time. For non-locally exposed farms an increase in the number of feed truck visits to the farm increased the risk for PED by 16% (OR=1.16; 95%CI: 1.07-1.26), whereas having visits from a veterinarian the 2 weeks before the outbreak or reference date reduced the risk by more than 3 times (OR=0.31; 95%CI: 0.11-0.86). Odds of being PED-positive increased almost 3 times for farms that did not allow the disinfectant a contact time longer than 20 minutes (OR=2.63; 95CI: 1.04-6.65).

Conclusions: These results will contribute to understand the epidemiology of the disease in the country and, ultimately, to design and implement effective prevention and control strategies in Japan and other regions epidemically infected by the PED virus.

