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Seasonal survey of transport vehicle decontamination practices for PRRSv in the US swine industry

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Introduction and Objectives
Reducing transmission of PRRSv between farms is a major goal for pork producers. Pigs can become infected with PRRSv through contact with contaminated transport vehicles. Though experimental studies have proven the efficacy of disinfection and thermal assisted drying to eliminate PRRSv from transport vehicles, it has not been shown to what extent they are employed and how successful they are under commercial conditions. Therefore, the objectives of this study were to survey industry standards for transport sanitation and to evaluate the efficacy of the decontamination protocols utilizing Swiffer Sweeper® pads for sampling.

Materials and Methods
Willingness to participate determined the enrollment of transport sanitation facilities and vehicles throughout the country (Table 1).

Table 1. Description of the sample

<table>
<thead>
<tr>
<th>Period (3 months)</th>
<th>Summer</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles sanitized per week</td>
<td>13 (5-300)</td>
<td>15 (4-300)</td>
</tr>
<tr>
<td>Geographical distribution</td>
<td>CO, IA(5), IL, MI(2), MN, NC(2), PA, NE(2), OH(2)</td>
<td></td>
</tr>
<tr>
<td>Sampled vehicles</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>Collected samples</td>
<td>536</td>
<td>558</td>
</tr>
</tbody>
</table>

Survey results show that 54% of drivers request disinfection and 63% arrive at their loading location within 2 hours of decontamination. Hot water was available in 54% of the facilities but only requested by 21% of the drivers. Interest in additional biosecurity training was expressed by 56% of the drivers. Assisted drying was only available at private facilities.

Results
A total of 1091 samples were tested (Table 2). For the summer period, the first positive sample was collected before decontamination from a vehicle hauling feeder pigs. The second positive was detected after decontamination from a vehicle that had hauled finishing pigs. For the winter period, eight positive samples were detected in the trailers, one of them after decontamination. One positive sample was collected in the floor of a cab. Four positive samples were found in sanitation facilities.

Table 2. Environmental PRRSv PCR results

<table>
<thead>
<tr>
<th></th>
<th>Summer</th>
<th>Winter</th>
</tr>
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<tbody>
<tr>
<td>% PCR positive samples</td>
<td>0.37%</td>
<td>2.34%</td>
</tr>
<tr>
<td>% PCR positive vehicles</td>
<td>5.4%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Survey data reveals opportunities to improve transportation biosecurity.

Conclusions
This paper introduces a standardized sampling technique that could be employed to monitor transport vehicles and sanitation facilities for PRRSv contamination. Negative results should not be interpreted as the absence of PRRSv or the infallibility of a decontamination protocol. A higher PRRSv herd infection prevalence and longer viral survivability during the winter may explain the difference in PRRSv detection rate. Survey data reveals opportunities to improve transportation biosecurity.

References

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