Risk-based management of PRRS and PED

Kaushi Kanankege, Igor Paploski, Dennis Makau, Mariana Kikuti, Andres Perez, Cesar Corzo, Kimberley VanderWaal

Objective

We conducted a survey to determine swine industry perspectives on a) ***perceived importance of risk-modifying factors contributing to between-farm transmission*** of PRRS and PED, and b) ***prevention/mitigation measures*** that should be prioritized on a farm that was forecasted to be at high risk of breaking.

Link to the survey: https://umn.qualtrics.com/jfe/form/SV_3C9lQKVjyCrA9cp

**We need more survey answers! Please click the link and participate in this 8-question short survey.

Methods and Results

Eighteen participants of the 'Geeks-to-Geeks: Understanding and predicting between-farm transmission' workshop at the 2020 Allen D Leman Swine conference responded to the survey. Seven additional PRRS-only responses were gathered in 2019 (i.e. n=18 PED and n=25 PRRS). Survey participants were from USA and Canada (n=13); South America (n=6); East Asia (n=3); and Europe (n=2). The participants self-identified to have experience with PRRS and/or PED management decisions for an average of 14 years (1 – 35 range). The majority were swine veterinarians in production systems (40%), or research and education (28%).

Participants were asked to rate the importance of ten risk-modifying factors in relation to pathogen spread, prevention, and control between farms; on a scale of 1-5, where 5 is the most important. The factor rates were summed and represented as a percentage of the total. This percentage was used as a metric of perceived importance (Fig 1). Biosecurity and fomites, particularly related to contaminated trucks, were recognized as high risk for between-farm transmission of PED and PRRS. Airborne spread, swine farm proximity, and vaccination were ranked as more important for PRRS than PED (Fig 1). Interestingly, animal feed supply was not ranked very highly for PED. Additional risk-modifying factors suggested by participants included the presence of pests and farm location being close to major roads. Participants were also asked to list actions that they would take to mitigate risk if they were to receive a farm-level risk forecasts two weeks ahead of time (Fig 2). In the word cloud, the size of words represents how frequently an action was listed.

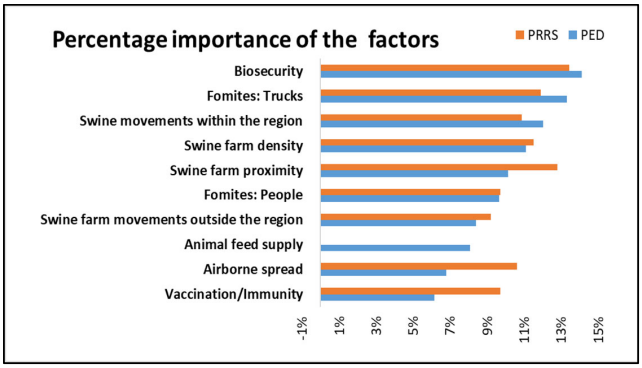

Fig 1: Percentage of respondees that consider each risk factor important for between farm transmission according to disease

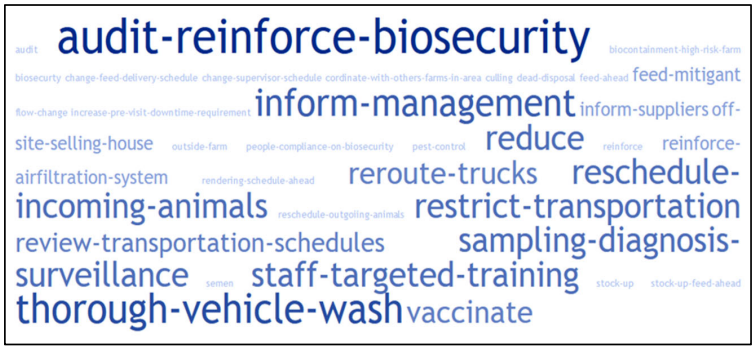

Fig 2: Word cloud of *prevention/mitigation measures* to prioritize on a farm forecasted to have high risk for PRRS or PED.

Discussion

Biosecurity was both the most highly ranked risk –modifying factor and most commonly listed action to mitigate risk. This could be because biosecurity covers a wide range of activities and measures that modify the risk posed by many of the other factors (i.e., air filtration mitigates the risk of farm proximity and airborne spread; shower in/out mitigates the risk of fomites carried by people). The risk perception varied across the participants suggesting the importance of proper risk communication. When a farm was forecasted to be at high risk of breaking, it may be interpreted as the farm is at risk due to planned future activities and the disease presence in the neighboring farms, or the farm may pose a threat to other farms and require biocontainment. Identifying the determinants of the forecasted risk may help the decision makers to decide the changes to in-coming or outgoing feed, animals, or personnel.