

## HHM-OP-01

### TITLE

APPLICATIONS OF POPULATION-BASED METHODS FOR PRRS MONITORING AND SURVEILLANCE IN BREEDING HERDS UNDERGOING VIRUS ELIMINATION

Giovani Trevisan<sup>1</sup>, Marcelo Almeida<sup>1</sup>, Will Alberto Lopez<sup>1</sup>, Daniel Linhares<sup>1</sup>

<sup>1</sup> *Iowa State University*

### CONTENT

#### Background and Objectives

Population-based sampling methods in breeding herds have been developed, significantly aiding veterinarians to track activity of PRRSv and other pathogens more efficiently. The purpose of this abstract is to summarize key findings of applications of some of these new methods, including processing fluids (PF) for 3-5 days-old piglets, and family oral fluids (FOF) for due-to-wean pigs.

#### Material & Methods

Several bench-top, and field research studies have been done to assess the feasibility of PF and FOF for PRRSv monitoring in breeding herds. This report summarizes the major findings, highlighting the field applications of such tools.

#### Results

PF were first reported in 2016, and based on the November 2018 report from the Swine Disease Reporting System, PF represents 9.5% of specimen submissions for PRRS testing by RT-PCR in the US swine industry (50% from all suckling pigs submission).

When there was a single viremic pig in a room, there was 90%, 80%, and 60% probability to detect PRRSV by qPCR when pooling PF from 25, 47 and 70 litters respectively. PF-based monitoring is great to screen for PRRSv RNA or antibodies in piglets of 3-5 days of age that are tail-docked and castrated.

To confirm disease status prior to weaning, FOF-based sampling detects PRRSV even at low prevalence (<2%). Farrowing rooms testing PCR-negative on PF may not test negative on weaning pigs.

#### Discussion & Conclusion

PF and FOF sampling are easier, more practical, and offer better herd sensitivity than bleeding pigs. When PRRSV is at low prevalence in breeding herds, there is an intermittent pattern of detection of the virus with PF, FOF, or blood samples between farrowing rooms, and across weeks, demonstrating the need to sample as many rooms and crates as possible over time to increase confidence that PRRSv has been eliminated before re-introducing naïve gilts.