

## 2025 Research Highlights from MSHMP – Part 1

The MSHMP Team

Our research group continues to drive innovation in swine health by focusing on critical challenges faced by the industry. Through collaborative efforts, our recent publications explore diverse aspects of swine disease detection, management, and epidemiology, contributing to the broader understanding of swine health and welfare. Below are three of our latest research contributions:

### 1. Swine Practitioner Practices on Oral Fluid Sampling in U.S. Swine Farms: A Nationwide Survey

Effective disease surveillance relies on practical and reliable sample collection methods. This nationwide survey assessed how swine practitioners across the United States utilize oral fluid sampling in disease monitoring and diagnostics. Results revealed widespread adoption of oral fluid sampling due to its cost-effectiveness, animal welfare benefits, and ability to detect multiple pathogens simultaneously. However, practitioners noted challenges related to sample collection consistency and interpretation of results under field conditions. The study emphasizes the need for standardized training and protocols to optimize the value of oral fluid surveillance as a routine diagnostic tool in swine health management.

Yue X, Leonard M, Tavai-Tuisalo'o M, Malladi S, Kikuti M, Melini CM, Zaabel P, Culhane MR, Corzo CA. Swine practitioner practices on oral fluid sampling in U.S. swine farms: A nationwide survey. *Pathogens*. 2025;14(9):940



### 2. Assessment of Diagnostic Value of Post Mortem Tongue Tip Fluids for Disease Detection in Growing Pigs

This study explored the diagnostic potential of post mortem tongue tip fluids as an alternative sample type for detecting swine pathogens. Researchers compared diagnostic results from tongue tip fluids with conventional samples across various infectious agents. Findings demonstrated that tongue tip fluids can provide reliable diagnostic outcomes for several pathogens, offering a practical option for surveillance in mortality-based sampling strategies. The method presents advantages in ease of collection and biosecurity, particularly in growing pig populations, supporting its use in field investigations where traditional sampling may be limited.

Melini CM, Kikuti M, Yue X, Paploski IAD, Canturri A, Rossow S, Leuwerke B, Stone S, Corzo CA. Assessment of diagnostic value of post mortem tongue tip fluids for disease detection in growing pigs. *Animals*. 2025;15(16):2434.



### 3. Evaluation of the Infectivity of Three Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) Variants

Understanding the infectivity of emerging PRRSV variants is crucial for risk assessment and control efforts. In this study, three PRRSV variants were experimentally evaluated to compare their infectivity and clinical impact in pigs. The results revealed variation in viral replication dynamics and pathogenicity among the strains, highlighting differences in transmission potential and immune response. These findings contribute to ongoing efforts to refine biosecurity protocols and enhance preparedness for evolving PRRSV threats within U.S. swine populations.

Melini CM, Kikuti M, Torremorell M, VanderWaal K, Rossow S, Torrison J, Corzo CA. Evaluation of the infectivity of three porcine reproductive and respiratory syndrome virus (PRRSV) variants. *Vet Res*. 2025;56:158. doi:10.1186/s13567-025-



Through these publications, our group continues to advance the field of swine health, driving progress in disease detection, variant monitoring, and epidemiological mapping. We are excited to share these findings with the scientific community and industry stakeholders to foster innovation in animal health management. A full list of MSHMP-related publications is available on our website: <https://mshmp.umn.edu/>