

SWINE HEALTH

Title: Negative cohort study plan for the estimation of diagnostic specificity of Two PCR assays for the detection of Classical Swine Fever, African Swine Fever and Foot and Mouth disease viruses in oral fluid samples – **NPB #17-219**

Investigator: Rodger Main

Institution: Iowa State University Veterinary Diagnostic Laboratory

Co investigators: Phil Gauger, Karen Harmon, Jianqiang Zhang, and Jeff Zimmerman

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Scientific Abstract:

The Iowa State University Veterinary Diagnostic Lab (ISU VDL) participated in a swine oral fluid negative cohort study (along with three other VDLs) that was coordinated and administered by the United States Department of Agriculture National Animal Health Lab Network (USDA NAHLN). The objectives of this study were to determine the diagnostic specificity of two different PCR assays for African Swine Fever (ASF), Classical Swine Fever (CSF), and Foot and Mouth Disease (FMD) in swine oral fluid samples obtained from swine herds located throughout the United States. Each of the four participating VDLs were responsible for collating samples and conducting ASF, CSF, and FMD PCR testing on a total of 255 swine oral fluid samples. This report serves summarize the findings of the 1,530 PCR assays conducted on 255 swine oral fluid samples at the ISU VDL. Each of the 255 swine oral fluid samples were tested by both the current (single-plex) ASF, CSF, and FMD PCR assays utilized across the USDA NAHLN as well as a set of single-plex ASF, CSF, and FMD PCR assays provided by a commercial PCR reagent manufacturer (Tetracore®). Thus, each swine oral fluid sample tested had six individual PCR assays performed on them. Albeit this project revealed the need for additional work and consideration to be given on the extraction methods used on oral fluid samples (most notably on the Tetracore® assays used in this study), no false positive PCR test results were observed across 6 PCR assays and total of 1,530 individual PCR assays conducted at the ISU VDL. These results suggest the ASF, CSF, and FMD PCR assays evaluated have an estimated diagnostic specificity of 100% on oral fluid samples from US swine. ISU VDL's contributions and results have been provided to the USDA NAHLN for collation with the results obtained from the other three VDLs that participated in this swine oral fluid negative cohort study. The USDA NAHLN will be providing the overall summary and findings of the study.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

For more information contact

National Pork Board • PO Box 9114 • Des Moines, IA 50306 USA • 800-456-7675 • Fax: 515-223-2646 • pork.org
