

Title: Quantifying the presence of viral material in feed delivered in Iowa –
#20-104 IPPA

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Scientific Abstract:

Experimental models have shown that viral genetic material can be found in feedstuffs for over 150 days and experimental viral contamination of feed can cause viral diseases in pigs. However, the actual risk of feed being a fomite for viruses that cause PRRS, PED, PDCoV, and TGE in everyday pork production has yet to be determined. Thus, our objective was to quantify the viral presence and load of PRRSV, PEDV, PDCoV, and TGEV in 224 feed samples delivered throughout Iowa in two periods of the year. The first period was from November 29th, 2020 through February 20th, 2021, during the period of suspected seasonally elevated virus pressure. The second period was from June 6th through July 3rd, 2021, during the period of suspected decreased virus pressure. We hypothesized that fewer than 2 of the 224 feed samples would result in a positive PCR test. To test our hypothesis and accomplish our experimental objective, 1 feed sample was collected per feed mill (14) for each of 16 weeks (12 in the winter collection period and four in the summer collection period; [n = 224]). Each feed sample was collected at the mill during the loading of the feed truck before delivery. Post collection each feed sample was identified and then shipped to the Veterinary Diagnostic Laboratory at Iowa State University. All collected feed samples were tested via PRRSV PCR and PEDV/PDCoV/TGEV multiplex PCR. The Veterinary Diagnostic Laboratory at Iowa State University declared Ct values >37 a negative (-) result for PRRSV and >36 a negative (-) result for PEDV, PDCoV, and TGEV. Of the 224 collected feed samples, 0 tested positive for PRRSV. Of the 224 collected feed samples 0, tested positive for PEDV, PDCoV, and TGEV. These results do not disprove that feed can be a fomite of domestic and foreign animal diseases. These results just provide a data point for pork producers to evaluate the actual risk of feed being a fomite of PRRSV, PEDV, PDCoV, and TGEV and what the return over investment scenarios are for using the various feed mitigants and sanitation products available today.

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 This report has not been peer-reviewed.

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