

Title: Efficacy of Ultraviolet C disinfection for inactivating Senecavirus A on contaminated surfaces commonly found on swine farms – #18-114 IPPA

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Scientific Abstract:

The objective of this study is to evaluate the efficacy of ultraviolet C (UVC) for inactivating Seneca virus A (SVA) on three different contaminated surfaces (cardboard, cloth and plastic) commonly found in swine farms under challenged conditions.

An experimental design study under controlled conditions assessed the effect of UVC on a SVA isolate on three different surface types: cardboard, cloth and plastic. Each coupon was inoculated with 1 ml of SVA and 1 ml of PBS or 1 gram of feces on the top or bottom surface of the coupon and allowed to dry. Coupons were exposed to UVC in a commercially available pass through chamber (PTC) for 5 minutes or in a simulated supply entry room (SER) for 120 minutes. After exposure, virus was recovered from each coupon and virus titration was performed on the sample collected. Log reductions of the UVC treated groups were compared to their relative positive controls.

The plastic coupons inoculated with SVA and PBS had a significantly lower virus log titer, (>7 log virus titer reduction) in both the PTC and SER when compared to their relative positive controls. All other study groups had only a 2 log virus titer reduction or lower in the PTC and SER. There was no significant statistical difference between the UVC top and bottom inoculated surfaces. UVC was efficacious as a disinfection for SVA on plastic that was free of organic material. UVC has the potential to serve as an appropriate method of disinfection for SVA on materials that are free of organic material and non-permeable, such as plastic.

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 This report has not been peer-reviewed.

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