

**Title:** Evaluation of the efficacy of Stalosan F<sup>®</sup> for inactivating porcine epidemic diarrhea virus (PEDV) in swine feces on the surface of trailers used to haul live pigs – **NPB 13-248**

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### SCIENTIFIC ABSTRACT

In May of 2013 porcine epidemic diarrhea virus (PEDV) was detected in swine for the first time in the United States and spread quickly across much of the country, partly due to the movement of contaminated livestock trailers. The objective of this study was to investigate the efficacy of using Stalosan F<sup>®</sup> disinfectant powder to inactivate PEDV and porcine reproductive and respiratory syndrome virus (PRRSV) in swine feces on metal surfaces similar to what is found in livestock trailers after fecal and other organic matter has been removed by scraping and sweeping, but not washing. Twenty-four (24), 3-week old barrows, that were negative for PEDV, PRRSV and transmissible gastroenteritis (TGEV) negative, were sourced from a private commercial producer in Iowa. Eight pigs were allocated to one of 3 treatment groups and inoculated via oral gastric tube with 5 mL of either PRRSV and PEDV-negative feces for a negative control (Neg), untreated PRRSV and PEDV-positive feces for a positive control (Pos), or PRRSV and PEDV-positive feces that was treated with Stalosan F (Stalosan). These pigs served as a bioassay to determine the infectivity of virus following treatment. Infectivity was determined by detection of virus with reverse transcriptase polymerase chain reaction (RT-PCR) on fecal swabs collected from the inoculated pigs on days 3 and 7 post-inoculation. All of the pigs in the Stalosan (8 of 8) groups became infected with PEDV. This result was not significantly different from the Pos (8 of 8) group ( $P > .05$ ) in which all pigs (8 of 8) also became infected. None of the pigs (8 of 8) in the Neg group became infected with PEDV. None of the pigs in the Neg (8 of 8) or Stalosan (8 of 8) groups became infected, however, results for PRRSV were inconclusive since none of the pigs (8 of 8) in the Pos group became infected with PRRSV. These results suggest Stalosan F did not prevent transmission of PEDV in the presence of feces under conditions representative of a contaminated livestock trailer that has been scraped but not washed.

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