



Pork producers have another option for disinfecting against PEDv

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ABSTRACT

With the advent of devastating diseases affecting the swine industry, much attention is being given to biosecurity in an effort to improve hygiene and ultimately prevent the spread of pathogens. As such, industry is looking to new chemical formulations, vetted protocols and scientific support data as a front line defense to ideally prevent disease, and when required eradicate an outbreak. This study considers a relatively new yet proven chemistry broadly used in healthcare facilities known as Accelerated Hydrogen Peroxide® (AHP®) in contrast with current chemistries that have known shortcomings. The third party study conducted by the renowned University of Iowa shows that AHP is superior to the incumbent chemistries tested.

BACKGROUND

As mentioned, disease outbreaks in swine herds are a constant threat to the pork industry. More specifically, Porcine Epidemic Diarrhea (PEDv) is extremely infectious with high morbidity and mortality within swine herds, posing an economic risk to producers. Due to PEDv's infectious nature, it is imperative that awareness for cleaning and disinfection protocols for facilities and transportation vehicles be broadly initiated to increase biosecurity.

STUDY 1

Typically a disinfectant becomes neutralized in the presence of organic soils, such as feces and manure. Therefore, complete washing, disinfecting and drying of equipment is essential but very time consuming. The use of Accelerated Hydrogen Peroxide (AHP) was tested in the presence of a fixed volume (5 or 10 ml) of undiluted PEDV-positive feces. The feces was spread evenly on the floor of a 6 by 6 inch aluminum tray with 1 inch sides. The trays were then disinfected with AHP in the concentrations of 1:16ppm and 1:32ppm, for 30 minutes. Fecal swabs were collected from the pigs to test for any active PEDV. In this study, AHP successfully inactivated PEDV in the presence of both light and heavy fecal loads at both concentrations of 1:16ppm, and 1:32ppm, at room temperature.

Since this study resulted in positive results for AHP, a second study was conducted to see if the results could be replicated but in a cold temperature environment.

STUDY 2

The use of Accelerated Hydrogen Peroxide (AHP) in cold temperature environments, was utilized to test the efficacy of inactivating PEDv in trailers in a more timely manner than traditional cleaning methods allow for. The study was conducted in both the presence of light and heavy fecal contamination (up to 25%) in cold weather conditions (-10 degrees Centigrade or 14 Fahrenheit). The tested contact times for PEDv inactivation were 40 and 60 minutes. It was found that PEDv was successfully inactivated in light and heavy fecal contamination, in the concentrations of 1:16ppm and 1:32ppm of AHP and 10 percent propylene glycol solution (to prevent solution from freezing), using contact times of both 40 and 60 minutes. The key finding in this study was the ability of AHP to kill 100 percent of PEDv in a 25% soil challenge, showcasing AHP's tremendous efficacy.

CONCLUSION

Both studies concluded that using a minimum of a 1:32 concentration of AHP is an effective method of disinfection when proper washing, disinfecting and drying of a trailer is not realistic. The researchers are not recommending the gold standard procedures for the cleaning of a trailer should be dismissed, but that using AHP in a single step is a validated and effective alternative when there is not sufficient time for thorough cleaning.

IMPLICATIONS FOR AHP

AHP Disinfectants carry claims against Porcine Epidemic Diarrhea (PEDv)

- All AHP products have been tested and are effective against both enveloped viruses (easy to kill) such as PEDv and non-enveloped viruses (hard to kill) such as Parvovirus

AHP Disinfectants have realistic contact times

- Short contact times ensure surfaces remain wet for the required contact time – providing comfort and confidence that disinfection has occurred.



AHP Disinfectants are One-Step Disinfectant Cleaners

- AHP has proven cleaning efficacy resulting in lower costs and faster results as well as added confidence that disinfection can occur

AHP Disinfectants provide the perfect balance between safety and efficacy

- All AHP products at in-use solutions do not require the use of Personal Protective Equipment (PPE) without sacrificing germicidal potency against pathogens such as PEDv

AHP Disinfectants are environmentally sustainable

- AHP's active ingredient, hydrogen peroxide, breaks down into water and oxygen leaving no active residues
- AHP products have been inherently proven to be biodegradable indicating that properly maintained septic systems and/or manure pits can handle normal wastes generated from the use of AHP formulations

REFERENCE

Thomas, P., et al. (2014). *Methods for inactivating PEDv in Hog Trailers. Twenty Second Annual Swine Disease Conference for Swine Practitioners, November 13-14, 2014.*

Benjamin, B. & Ferry, M. (2015). *Pork producers have another option for disinfecting against PEDv. Michigan State University Extension, April 14, 2015.*