

The Healthy Herd Series: Effects of Cold Weather on PRRSV and PEDv

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Every year as winter approaches, not only do producers have to prepare for frigid temperatures but must also prepare for a cold battle against Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) and Porcine Epidemic Diarrhea Virus (PEDv). While PRRSV and PEDv are a year-round threat, during colder months these viruses can survive longer and travel great distances due to the low temperatures. And to top it all off, battened down barns and tight conditions make it easier for them to spread. Preventing an outbreak this winter starts now with strong biosecurity and smart barn management.

PRRSV

Porcine Reproductive and Respiratory Syndrome is a virus the swine industry knows all too well. Clinical presentation of the virus date back to the 1990's and it has since become endemic to the U.S. and the battle against PRRSV is becoming ever more costly. It was estimated that PRRSV cost the United States \$664 million annually, from 2006 to 2012 (Holtkamp et al., 2013) but this estimate has increased to \$1.2 billion annually, from 2016 to 2020 (Osemeké et al., 2025). Unfortunately, many producers have experienced the devastating consequences of PRRSV (anorexia, fever, cyanosis, reproductive failure and complications including delivery of weak viremic piglets, etc.).

Porcine Reproductive and Respiratory Syndrome is spread through numerous channels both directly and indirectly, and infections open the flood gate to secondary infections, particularly in piglets. PRRSV is of particular concern in the winter months because

the cold allows the virus to survive and travel more efficiently, surviving up to 35 days at 39.2°F (Quinonez & Goyal, 2023). PRRSV has the ability to travel great distances in the winter months as well. A study by Dr. Scott Dee revealed that PRRSV residing in a snowball, under a wheel-well of a pickup truck, was able to travel 31 miles and remain infectious (Dee et al., 2002), emphasizing the risk of accidental contamination during the winter months.

PEDv

While PRRSV is a major concern, PEDv (Porcine Epidemic Diarrhea Virus) also poses a serious winter threat. Porcine Epidemic Diarrhea Virus is a contagious intestinal disease that affects pigs of all ages but is of greatest concern in young piglets.

Porcine Epidemic Diarrhea Virus causes severe diarrhea, vomiting, and dehydration, often resulting in extremely high morbidity and mortality rates in young piglets; rates approaching 100% in certain cases (Lee, 2015; Jang et al., 2023). Porcine Epidemic Diarrhea Virus spreads primarily via the fecal-oral route. Pigs can become infected when they ingest even small amounts of infected fecal matter, whether that is from an infected pig or off improperly cleaned boots and equipment. The latter is of great concern because PEDv is remarkably hardy, surviving for long periods on various fomites in some cases for 10-15 days at 39.2°F (Kim et al., 2018) and 28 days at -4° in manure slurry (National Hog Farmer, 2014), making biosecurity the most critical first line of defense.

Things To keep in mind regarding winter biosecurity:

- **Viruses love the cold:** Cold weather = longevity and increases the distance a virus can travel. Disinfect objects and vehicles often.
- **Tighten biosecurity:** Limit visitors, clean and disinfect boots and tools, wear proper PPE, and ensure trucks are thoroughly washed and dried before reentry.
- **Disinfectants:** Cold temps can reduce efficacy of disinfectants
 - Chemistry matters, different disinfectants can perform less effectively in the colder months
 - Once the disinfectant has dried, the disinfection process has stopped.
 - Reapply!
 - Resupply boot and truck washing areas regularly (clean disinfectants are crucial for proper boot disinfection)
 - Adding anti-freeze to your disinfectant can be beneficial in ensuring adequate contact time without freezing. However, not all antifreezes can or should be added. Your antifreeze needs to be compatible with your disinfectant. If they are not your disinfectant can lose its efficacy (Anderson, 2020). According to MWI Animal Health there are many factors to consider when adding antifreeze to your disinfectants such as the type of disinfectants, the ambient temperature, and the targeted organisms (Anderson, 2020). Propylene glycol is an example of a commonly used antifreeze, it is important to note that ethylene glycol is not recommended due to its toxicity (Anderson, 2020). It is vital to check with the manufacturer regarding what can and cannot be added to your disinfectant and how much. Never add anything that is not approved (Eadie, 2023)!
- **Detergents:** While not directly related to PRRSV or PEDv detergents are a great addition to barn prep and cleaning regimes.
 - Detergents help break down biofilms and kill bacteria.
 - Detergents just like disinfectants have varying levels of effectiveness on different surfaces and bacteria types (Hancox et al., 2013)
- **VCPR:** Work with your veterinarian to determine which disinfectants work best in cold conditions and vaccinations.

- **Monitor herd health:** Watch closely for sudden diarrhea, anorexia, or changes in behavior, especially in young pigs. Early detection and isolation are key to limiting spread.
- **Piglets:** Young pigs are at the greatest risk of death and morbidity. Keep farrowing/nursery areas clean and dry. Remove manure quickly and disinfect thoroughly between groups. Avoid stepping in crates and make sure to have proper PPE.
- **Finisher pigs and Sows:** PRRSV activity in 2025 has been at a historic high of 43.3% of cases testing positive in wean to finish sites (Cezar et al., 2025). PRRSV strains can spread rapidly through finishing and sow barns, causing various forms of economic losses, including sow and finisher pig mortality, abortions in sows, and reduced daily gain in finisher pigs. According to the Merck Veterinary Manual, "...the postweaning pneumonic phase of PRRS can become chronic decreasing daily weight gain by 85% and increasing the mortality rate to 10–80% (Linhares, 2025, para 11)."

Why It Matters

An outbreak of PRRSV or PEDv can devastate productivity; spiking herd-wide mortality, causing abortions, increasing morbidity in survivors, and disrupting herd flow. Once PEDv or PRRSV enters a barn, it's difficult and costly to eliminate and the colder weather is just what PRRSV and PEDv need to wreak havoc in a farm. Biosecurity is a year-round endeavor, and a healthy herd starts with proper biosecurity practices.

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