

COLD WEATHER TRAILER DISINFECTION WITH SYNERGIZE DISINFECTANT

With trailer disinfection becoming an established part of strict biosecurity protocols, the impact of freezing temperatures on disinfectant performance requires examination. PRRSV research conducted by Dr. Scott Dee of the University of Minnesota Swine Disease Eradication Center (SDEC) indicates that even the most effective of the products tested (Synergize Disinfectant) required a minimum of 45 minutes to decontaminate trailers inoculated with live PRRSV.

When temperatures dip below freezing, freshly washed trailers that are allowed to sit outside the truck wash bay can freeze in as little as twenty (20) minutes. However, when temperatures drop near 0-10°F, freezing can occur in less than ten (10) minutes. So the question is; How do we keep the disinfected trailers from freezing and allow the required 45 minutes of contact to deactivate PRRSV?

Because propylene glycol is a component of most commercially available antifreeze compounds, **and...** is also a component of our Synergize formulation, the addition of propylene glycol to the disinfectant solution is fully compatible. And, based on the research, very effective.

In "An Update on PRRSV Biosecurity Research" presented by Dr. Dee at the *2004 Allen Lemay Swine Conference*, "the efficacy of Synergize was evaluated at -20°C... PRRSV-contaminated trailers were treated with one of three mixtures via fumigation, stored for eight hours at -20°C, allowed to thaw, and sampled as described. Trailers treated with Synergize and 10% propylene glycol did not freeze and were negative for PRRSV RNA and infectious virus following thawing."

Inclusion Rates (amount of propylene glycol added to normal disinfecting solution):

Temperature	% PG	Per 50 gal. water	Per 100 gal. water
21-31° F	2.5%	1.25 gal. PG	2.5 gal. PG
11-20° F	5%	2.5 gal. PG	5 gal. PG
0-10° F	10%	5 gal. PG	10 gal. PG

It is safe to conclude from this information that the disinfecting of tires in freezing conditions would also benefit greatly from the addition of propylene glycol to the Synergize solution. We have seen tire disinfection achieved in a number different ways. Tires can be disinfected manually through a pump-up sprayer or other spray apparatus, and there are truck mounted tire disinfection systems that automatically spray tires when the system is activated.

For tire disinfection, smaller containers are often used. Here are sample containers and inclusion rates:

Temperature	% PG	5 gal. container	2 gal. container
21-31° F	2.5%	16 ozs.	7 ozs.
11-20° F	5%	32 ozs.	13 ozs.
0-10° F	10%	64 ozs.	20 ozs.

When using Synergize through a "hose-end" (Gilmour type) sprayer use the following recommendations. These inclusion rates are based on a sprayer with a 32 oz. reservoir container.

1. Set sprayer for 1:64 (2 ozs. per gallon) ratio
2. For 21-31° F add : 16 ozs. Synergize / 8 ozs. PG / 8 ozs. water
3. For 11-20° F add: 16 ozs. Synergize / 12 ozs. PG / 4 ozs. water
4. For 0-10° F add : 16 ozs. Synergize / 16 ozs. PG

RECOMMENDED PROCEDURES FOR COLD WEATHER TRAILER DISINFECTION

Adding propylene glycol to a solution of Synergize Disinfectant has been proven to be an effective method for PRRSv prevention in below freezing temperatures. However, injecting two (2) products (Synergize and PG) through a single downstream injection system, each at a different dilution rate, has been an obstacle.

To address this issue, we recommend the use of a holding or reservoir tank. Using an empty 55 gallon drum* as our tank, follow these recommended procedures:

1. Fill empty drum with fifty (50) gallons of water[†]
2. Add 50 ozs. of Synergize Disinfectant
3. Add prescribed amount of propylene glycol (2.5 – 10%) depending on level of freeze protection desired (see “Cold Weather Trailer Disinfection”).
4. Mix thoroughly.
5. Pump solution directly from drum onto trailer (an electric pump works well for this application).

[†]Fill tank to about 90% of capacity with water to allow for addition of Synergize and propylene glycol.

*The use of an empty 55 gallon drum is just an example. Any size holding or reservoir tank will work. Be sure to dilute Synergize at 1:128 (1 oz. per gallon) for this cold weather application.