

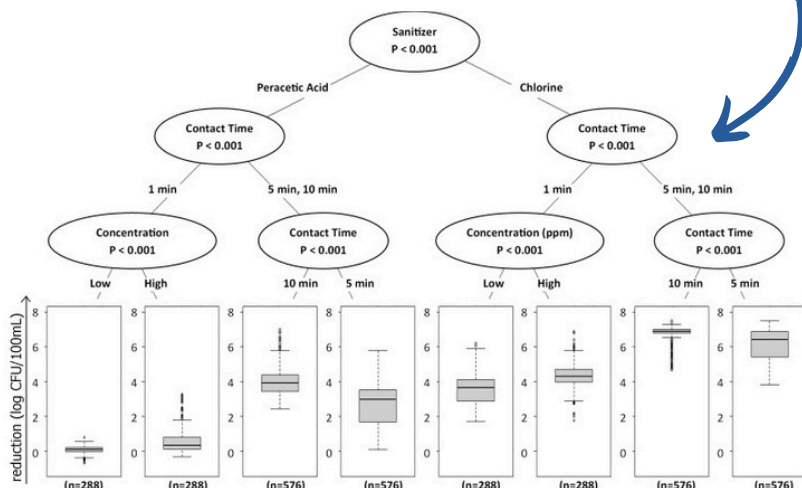


RESEARCH SUMMARIES

SANITIZER TYPE AND CONTACT TIME INFLUENCE SALMONELLA REDUCTIONS IN PREHARVEST AGRICULTURAL WATER USED ON VIRGINIA FARMS

There are many factors which impacted sanitizers effectiveness in reducing *Salmonella* populations. In order from greatest to least impact, these factors are:

- **CHLORINE** is more effective than peracetic acid
- **GREATER CONTACT TIME** is more effective
- **SALMONELLA OUTBREAK STRAINS** are more treatment-resistant than environmental strains
- **HIGHER SANITIZER CONCENTRATIONS** are more effective
- **HIGHER WATER TEMPERATURES** are more effective



	Sanitizer quantity needed			
	Peracetic Acid (mL)		Chlorine (g)	
	Low (6ppm)	High (10ppm)	Low (2-4ppm)	High (10-12ppm)
River				
May	3.1±0.1 ^a	4.6±0.1 ^a	2.3±0.1 ^a	6.2±0.1 ^a
July	3.1±0.1 ^a	4.5±0.1 ^a	2.2±0.1 ^a	6.2±0.1 ^a
September	3.0±0.1 ^a	4.6±0.0 ^a	2.1±0.1 ^a	6.3±0.1 ^a
Pond				
May	3.5±0.1 ^b	4.8±0.0 ^b	2.9±0.1 ^b	6.8±0.2 ^b
July	3.5±0.1 ^b	4.8±0.1 ^b	2.7±0.1 ^b	6.9±0.1 ^b
September	3.6±0.1 ^b	5.0±0.0 ^c	2.9±0.1 ^b	6.8±0.0 ^b

Within a column, means with different letters are significantly different ($p < 0.05$) by multiple Tukey's adjusted analysis of variance.

The volume of sanitizer needed to reach the desired ppm differed between the water types, with the pond water always requiring significantly more sanitizer volume, compared to the river water.



Claire M. Murphy, Ph.D.

Assistant Professor and Extension Specialist
Washington State University
claire.murphy@wsu.edu



Laura K. Strawn, Ph.D.

Associate Professor
Virginia Tech
laurakstrawn@vt.edu



MORE INFORMATION

Murphy, C.M., Hamilton, A.M., Waterman, K., Rock, C., Schaffner, D., Strawn, L.K., 2023. Sanitizer Type and Contact Time Influence Salmonella Reductions in Preharvest Agricultural Water Used on Virginia Farms. *J. Food Prot.* 86(8).
<https://doi.org/10.1016/j.jfp.2023.100110>

