



# RESEARCH SUMMARIES

## EFFICACY OF SODIUM HYPOCHLORITE AND PERACETIC ACID IN REDUCING CROSS-CONTAMINATION DURING WASHING OF BABY SPINACH AT DIFFERENT WATER QUALITY LEVELS

Sanitizer	COD (ppm)	0 ppm	20 ppm	40 ppm	80 ppm
PAA	300	6.5 ± 0.3aA	5.3 ± 1.4aB	3.9 ± 3.0aBC	2.7 ± 1.2aC
	2500	6.8 ± 0.6aA	6.0 ± 0.9aA	5.8 ± 0.8bA	2.9 ± 2.8aB
NaOCl	300	6.5 ± 0.3aA	5.9 ± 0.7aA	6.0 ± 0.6bA	5.1 ± 0.5bB
	2500	6.8 ± 0.6aA	5.7 ± 0.5aBC	6.8 ± 1.2bAB	5.3 ± 0.8bC

Note: Values are expressed as mean ± standard deviation. Means with different lower-case letters within the same column are significantly different ( $p < 0.05$ ). Means with different upper-case letters within the same row are significantly different ( $p < 0.05$ ). The lower detection limit is  $-0.52$  Log MPN/leaf.

There was no statistically significant difference in the levels of bacterial transfer across the two sanitizers and two water types at the highest sanitizer concentration of 80 ppm.

Transferred concentrations of bacteria were all low but remained detectable.

Sodium hypochlorite (NaOCl) was significantly less effective than 80 ppm peracetic acid (PAA) at 2500 chemical oxygen demand (COD).

These results show that NaOCl was generally less effective in removing or inactivating bacteria from the contaminated produce surface than PAA under the same conditions.

Sanitizer	COD (ppm)	0 ppm	20 ppm	40 ppm	80 ppm
PAA	300	4.8 ± 0.4aA	2.6 ± 1.0aB	0.4 ± 0.5aC	0.3 ± 0.2aC
	2500	5.3 ± 0.2bA	3.2 ± 0.8aB	2.0 ± 0.9bC	0.2 ± 0.1aD
NaOCl	300	4.8 ± 0.4aA	2.6 ± 1.1aB	1.8 ± 1.0bBC	1.1 ± 1.0aC
	2500	5.3 ± 0.2bA	2.5 ± 0.8aB	3.1 ± 0.8cB	0.3 ± 0.3aC

Note: Values are expressed as mean ± standard deviation. Means with different lower-case letters within the same column are significantly different ( $p < 0.05$ ). Means with different upper-case letters within the same row are significantly different ( $p < 0.05$ ). The lower detection limit is  $-0.52$  Log MPN/leaf.



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Gao, Z., Jha, A., Hudson, C.L., Hopper, A.L., Critzer, F.J., Micallef, S.A., Schaffner, D.W., Tikekar, R.V., 2025. Efficacy of sodium hypochlorite and peracetic acid in reducing cross-contamination during washing of baby spinach at different water quality levels. *Journal of Food Science*, 90(1), e17657. <https://doi.org/10.1111/1750-3841.17657>

