

# INDEPENDENT TESTS RESULTS AND CONCLUSIONS

INSTITUTION	SCIENTISTS	DATE	OBJECTIVE
American Journal of Infection Control, Scientific Journal published by Elsevier on behalf of the Association of Professionals in Infection Control and Epidemiology.	Marilyn Ramirez RN, Laura Matheu RN, Miguel Gomez RN, Alicia Chang MD, Jose Ferrolino MD, MPH, & Ricardo Mack MD	August 2020	Effectiveness of Dry Hydrogen Peroxide (DHP) on reducing environmental microbial bioburden risk in a pediatric oncology intensive care unit.
Explanation and Findings.	The results of this study demonstrate that DHP was effective in reducing the residual microbial bioburden on surfaces and in the air. DHP demonstrates potent antimicrobial activity against a broad spectrum of micro-organisms, including those most commonly associated with health care-associated infections (HAI), spore-forming organisms, and mycobacteria. DHP systems are safe when used in any occupied setting and produce HP at far more diluted concentrations than other airborne hydrogen peroxide systems, yet DHP demonstrates an effective microbiocidal activity because of its dry, nonaqueous gas state. DHP systems achieve hydrogen peroxide concentrations well below OSHA's safety limit of 1.0 ppm. DHP systems, by contrast, offer a continuous infectious microbial reduction (CIMR® System) that can address in real-time the ongoing contamination of the health care environment without interrupting patient care. Individual exposure to DHP showed no negative side effects or adverse reactions during the course of the study. DHP was effective in reducing surface and air microbial bioburden in an occupied space.		
MicroChem Laboratory, Round Rock, Texas.	Victoria Zarate, B.S.	March 2020	
Explanation and Findings.	Test confirmed a reduction in viral titer, a numerical expression of the quantity of virus, by (90.0%) at the 1 ft distance assayed and a reduction in viral titer (82.21%) at the 10 ft distance assayed within a one hour period.		
Department of Horticulture, Faculty of Agricultural Sciences, University of Talca, Chile. Department of Vegetable Production, University of Almería, Spain.	Gilda Carrasco & Miguel Urrestarazu	April 2010	Green Chemistry in Protected Horticulture: The Use of Peroxyacetic Acid as a Sustainable Energy.
Explanation and Findings.	Hydrogen peroxide is a reactive oxidizing substance that may form a number of additional compounds with different physical and chemical properties. Peracetic acid and sodium percarbonate are organic addition compounds that are also reactive oxidants and/or break down to hydrogen peroxide. Peracetic acid is a strong disinfectant with a broad spectrum of antimicrobial activity. Both peracetic acid and hydrogen peroxide easily degrade into oxygen and water. Hydrogen peroxide, is biodegradable and not harmful to humans, animals and plants.		



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The University of Pittsburgh Medical Center, Presbyterian (a 766-bed tertiary care facility), Pittsburg, Pennsylvania.	Sandra Silvestri, BSN, RN, CIC , PA Sam Krautz, BA, PA Edward Dudek, PA Carlene & A. Muto.	March 2010	Enhanced Environmental Cleaning with Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> ) gas and the effect on Hospital-acquired infection (HAI) rates and acquisition of methicillin resistant Staph aureus (MRSA) and Vancomycin-resistant enterococci (VRE).
Explanation and Findings.	The Health Care Associated Infection (HAI) rate was reduced by 48% and the Vancomycin-resistant Enterococcus (VRE) A rate reduced by 56% during the post period.		
Kansas State University, Manhattan, KS & Sandia Labs, Albuquerque, New Mexico.	Dr. James L. Marsden	October 2009	Evaluation of the CIMR® System for the inactivation of Influenza A H1N1 on Stainless Steel Surfaces.
Explanation and Findings.	The study demonstrated the effectiveness of the CIMR® Cell for the inactivation of Influenza A – H1N1. After 6 hours of treatment, levels of the H1N1 virus on inoculated stainless steel coupons were below the detection limit. No recovery was observed at 8, 12, or 24 hours. This preliminary study indicates that the CIMR® Cell was effective at inactivating Influenza A H1N1 virus on inoculated stainless coupons under the conditions of these tests. It was further observed that DHP technology demonstrated the ability to disinfect 96.4% to 99.93% of viruses, bacteria, and mold spores on surfaces within two hours. It was also found that within 24 hours, 96.4% to 99.9% microbial reduction was noted of surfaces contaminated with Staphylococcus aureus, E-Coli, Listeria monocytogenes, Candida albicans, Streptococcus, and Pseudomonas and thereafter new microbe reduction was virtually instantaneous.		