



Drive For Food Safety Increasing Use Of Ozonated Water Systems

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With food safety as a growing business imperative, an increasing number of food processors, restaurants and supermarkets are turning to ozonated water systems for improving disinfection.

Researchers have verified that ozonated water can replace traditional sanitizing agents like chlorine and detergents (if grease must be removed, ozone cannot replace detergents) and reduce the incidence of food-borne illness due to food pathogens. And the use of ozonated water can drive profitability by increasing the freshness and shelf-life of produce, meats, fish and poultry, while reducing the need for and cost of chemical cleaning agents and hot water (energy).

Chlorine is commonly used in

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food processing to control pathogens, yet there are limitations in its ability to provide a consistently safe food supply. As well, environmental and health organizations are concerned about whether the food industry is dealing with

toxicity issues related to chlorine, including the formation of carcinogenic by-products and chemical residues left on food and returned to the environment in wastewater.

The disinfectant potential for ozone is evidenced by its use by water treatment facilities in the U.S. and Europe. Ozone has proven itself to deliver far greater lethality rates for microorganisms versus chlorine or other chemical sanitizing agents. And there is no negative ecological impact.

In processing plants, restaurants and supermarkets, ozone water disinfection systems typically install between the water supply and faucets and sprayers, delivering ozonated water for rinsing product and for cleaning processing and preparation areas. Ozonated water guards against a range of contaminants, including salmonella, listeria and E. coli, that threaten food safety. Ozone kills bacteria on contact -- at levels 3100 times faster than chlorine -- and it is the most potent bactericide known. Scientists from Michigan State University confirmed that ozone was extremely effective in ridding water of hazardous pathogens, including chlorine-resistant *Cryptosporidium*.

Ozonated water also produces no harmful residue since ozone decomposes back to regular water in about 20 minutes. The FDA and the USDA have approved the use of ozonated water on food products, and ozone is even permitted for use on organic products with no mention in labeling. Gaseous ozone is even listed as a disinfectant for water-sensitive produce, such as strawberries and raspberries, in the *Guide to Minimizing Microbial Food*

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Safety Hazards For Fresh Fruits and Vegetables, a document put together by the FDA and USDA. Ozonated water has proven so effective, that bottled water mega-supplier, Aquafina, uses an ozone solution to disinfect their bottled water.

ROI in 4 Months

According to Michael Elliot, President of Eco-Safe Systems USA (www.ecosafeusa.com), a Los Angeles-based supplier of ozonated water systems for the food processing, restaurant and supermarket industries, "there is usually a 4-6 month return-on-investment (ROI) on an ozonated water system installation. A typical supermarket using Eco-Safe's MD-2000 to deliver ozonated water in the produce, fish, meat and poultry food preparation areas, can save appx. \$12,000 per month in shrink. Food will have a greater shelf life and can now be sold rather than discarded. This leads to an ROI in appx. 4 months, not years."

When you factor in other areas where ozonated water saves in operational costs -- energy savings, labor savings, and lower chemical costs -- profitability increases further. Since ozone works best in cold water, hot water heating costs are reduced dramatically. Cleanup takes much less time, reducing labor costs, and expensive, dangerous chemicals are used far less.

Other benefits of ozonated water are potentially even more valuable, but more difficult to estimate in dollars because they are preventive and food safety related. The cost of a single bacterial outbreak can destroy an entire brand. A single E-coli event recently caused a company in business for over 50 years to close its doors nearly overnight. The preventive benefits, therefore, cannot be overlooked.

Food looks fresher, fish odor is eliminated

Aesthetics, including odor, are also key in produce, meat

and fish departments. Supermarkets are forbidden to use chemicals to sanitize meat cases, so odor is often a real problem. Using ozonated water, perishable departments can eliminate the foul odors caused by food decay. After rinsing a fish case with ozonated water, the bad odor is eliminated.

Meat, seafood, and produce also look fresher, and maintain freshness for a longer time. Seafood gains an extra benefit when the seafood case is packed with ozonated ice, which releases ozone as it melts, affording continuous disinfection. These factors have a positive impact on customers, and employees prefer to work in a fresher, more healthful, bacteria-free environment.

Bill MacAloney, CEO of Anaheim-Based Jax Markets, past Chair of the Board of Certified Grocers of California and a board member of the Food Marketing Institute said, "The use of Eco-Safe ozonated water disinfection has delivered higher levels of quality, safety and freshness in produce, meat and seafood departments. This points the way for the supermarket industry to implement solutions that improve food safety and freshness."

Elliot further suggests that there's not really a one-size-fits-all ozone solution. "Each installation is customized for the size of the plant, supermarket or restaurant. This involves a blueprint study and determining available water pressure, line diameter, and pump demands. Trained plumbers working with the technical staff of Eco-Safe are responsible for a trouble-free installation."



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