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PICTURED: Striped Sea Bass
Agio at Doubletree Guest Suites

Classics with a Twist

Chef Chavez

Agio Ristorante, Anaheim

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Ozonated Water

Chef Edward Ungrue Taps Ozonated Water to Improve Disinfection and Food Freshness

When it comes to increasing food safety and improving the freshness and shelf life of perishables, Chef Edward Ungrue has found a powerful solution in ozonated water disinfection technology.

With food safety an ongoing growing concern, Chef Ungrue was looking for ways to improve food safety in the kitchen at San Gabriel Country Club, San Gabriel, CA. He decided to test Eco-Safe's R-1000 ozonated water unit in his own kitchen. In order to provide an unbiased and empirical test, Chef Ungrue took some cabbage and rinsed half in ozonated water and the other half in tap water. He then left the cabbage in the kitchen for six hours during a normal work day.

"There was such a huge difference in color and freshness," exclaimed Chef Ungrue. "Items rinsed in ozonated water stayed fresh. Items rinsed in regular water began to decay and turn brown. That's how we learned the real-time impact of bacteria and other nasties that grow quickly in room temperature or warmer which is what happens when you pull something out of the icebox or cooler." Chef Ungrue later stated, "We then rinsed some fresh Mahi Mahi from Hawaii in ozonated water and compared it to a batch rinsed in regular water. We left both batches in the cooler. Within 36 hours the odor of the fish rinsed in regular water was prevalent. Fish rinsed in ozonated water was odorless."

But what exactly is ozonated water? Ozone is a naturally occurring gas that is created from oxygen atoms. Oxygen molecules are broken into individual atoms by the corona discharge in the ozone generator. These single oxygen atoms recombine into loosely bonded tri-atomic oxygen. This new molecule is extremely reactive and is called Ozone. Due to the loose bond in this oxygen molecule, ozone is a very strong oxidant and a powerful disinfectant. Ozone breaks through bacterial cell membranes to destroy the bacteria and destroys dangerous pathogens like salmonella, listeria, E. coli and shigella, resulting in food that is safer to consume. Ozone also kills bacteria that cause food spoilage, therefore increasing shelf life and saving money.

In restaurants, the ozone water disinfection system unit installs between the water supply and faucets and sprayers, delivering ozonated water for disinfecting food and preparation areas with ease. This renders the system very user friendly.

But because ozonated water reverts back to regular water in about 20 minutes, it leaves behind no harmful residues or by-products. 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 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. And Orange County officials in California are using ozonated water technology to deodorize the reservoir.

According to Michael Elliot, President of Eco-Safe Systems USA, 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 restaurant using Eco-Safe's R-1000 can save money by reducing food waste because rinsed produce and meats have a longer shelf life and can now be used rather than discarded. 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.

Chef Ungrue concurs, "I would definitely install an ozonated water system in the kitchen of every restaurant because operators need to ensure food safety and keep every cent they can. The cost of installing ozonated water in the kitchen will pay off in the long run."