

Ozone: A Century-old Technology for Today's Seafood Processors

The use of ozonated water as a bactericide for use on food products was approved by government agencies five years ago. Since then, forward-thinking seafood processors and distributors have jumped on the bandwagon and begun using ozonated water to reduce bacteria counts, extend shelf life, improve plant sanitation, eliminate "fishy" odors, and reduce BODs in waste water as well as using it in ice machines and processing equipment which requires water to operate.

Creative operators are finding additional uses for this technology, ranging from doorway sprays and hand dips to equipment sanitizing. They realize that ozone is a natural, non-residual compound with a short life span that can eliminate many types of bacteria, including *Listeria M.*, *Staphylococcus*, *Salmonella*, and *E Coli*, within a few seconds.

Ozonated water can be sprayed, dipped, or flumed on seafood product to dramatically reduce surface bacteria counts by 99.99%. Shelf-life extensions of an additional seven to ten days can also be expected.

Ozone is one of the most potent oxidizers available today and is 1,000 times stronger than chlorine with none of the harmful side effects. Because ozone has a short life span, it leaves no toxic residue.

Ozone generation is typically done at a central location in the plant and then piped into various outlets (sprays, hoses, etc.). Proper pipe sizing as well as proper sizing of the generator is critical for efficient and correct delivery. It is important to choose a vendor with extensive experience in the seafood industry. As with any emerging technology, machine improvement is coming fast and furious, so it is vital that the buyer cement a good and lasting relationship with the supplier.

Prices for quality ozone generators range from approximately \$7,500.00 to as much as \$100,000.00. Spending more money on a generator will not necessarily guarantee a high-quality product. Ozone generation is usually based upon the plant's demand for the treated water as well as its quality. Since ozone generation is a natural process that involves adding a molecule of oxygen to the water, the price of the unit is not as important as the quality of construction and the availability of service, support, and parts. As with any sophisticated piece of equipment, beware of bargain prices, uninformed sales people, and ridiculous promises.

An important subject that overzealous sales people frequently neglect to mention is that of ozone safety issues. Ozone is a toxic substance and must be generated with the proper controls. Careful monitoring and personnel training are vital. Carelessness can lead to dangerous off-gas situations and must be avoided. Monitoring and testing equipment must be used, and compliance with all OSHA guidelines must be observed.

Ozone-treated water is the newest, safest, and most powerful tool available for the seafood processor today. It provides dramatic results in improving product quality, appearance, and flavor for the consumer.