

Fish Processing with Ozone

In the 1930s, the Frenchmen LeGall and Salmon, showed that the shelf life of Mediterranean fish would be extended at least 33 percent by storage under ice which had been made from ozonated water. The ozone sterilized the water so that when the ice melted, liquid water did not contain bacteria. In this manner, bacterial growths on the surfaces of the fish were kept minimal. More recent work with Alaskan salmon washed with ozonated freshwater and stored under ozonated ice extended the shelf life of fresh salmon from 6 to 11 days.

Where do you apply the Ozone?

1. The first step is to wash the fish off when it arrives at the processing plant. This is effective at removing slime and the bacteria from the fish. This can be done with sprays along the conveyor on the way to the chiller tank. We want to spray both sides, so you may want to consider a way to flip or roll the fish.
2. The next step is to spray the fish on the conveyor as they leave the chiller tank and are sent to the heading, cutting and filleting machines. Again we need to spray both sides.
3. The blades in the heading, cutting and fillet machines should all have a spray of ozonated water at all times.
4. Once the fish has been filleted, it should be washed with ozonated water on both sides.





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5. If you use ice to store or chill your fish, you should make your ice from ozonated water.
6. For cleaning and sanitizing, you should use ozonated water to wash all work surfaces and tools. Boot and glove washer using ozonated help to stop employees from carrying bacteria around the plant. In recent test we have seen bacteria level go from TNTC to 5-6.
7. Ozone air can be added to your coolers to destroy mold and bacteria.

Ozone Advantages:

- Ozone oxidizes a myriad of common organisms, fungus, bacteria, etc.
- As an oxidizer, ozone it is 51% as powerful as chlorine and 3,100 times as fast at killing bacteria and other microbes. Ozone is effective as a disinfectant at relatively low concentrations and does not leave toxic by-products similar to those related to chlorination.
- Because it breaks down back to oxygen, ozone leaves no residue in the water or on the product. This means no change in color or flavor that is often associated with chlorine treatment.
- Using ozone gives more assurance against pathogenic E-coli and similar organisms and at the same time, extends the shelf life of the product.
- The Department of the Agriculture published an article saying that no secondary biocide is necessary when using ozone as it kills bacteria, viruses, spores, fungi, mold, mildew, etc., without the need for other products.
- USDA and FDA approved (GRAS Status)

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