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Editorial

Aquaculture Applications in Seafood Industry

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Editorial

Producing safer food can not only reduce the risk of foodborne disease outbreaks, but also increase its shelf life, market acceptability, reduce losses and waste, and enable aquaculture producers and retailers to achieve higher profitability. Shelf life extension is achieved through the use of refrigeration and chemical additives. However, thermal processing and non-thermal processing methods have also been used to increase shelf life and improve product safety by reducing the level of pathogenic and spoilage microflora. However, thermal processing has serious negative effects on product quality, such as shrinkage, cooking loss, color change, texture, nutrient loss, and taste. Therefore, the application of non-thermal methods such as gamma radiation, high pressure, ultraviolet light, and electrolyzed water (EOWater) provides interesting methods for extending the shelf life of food and other food processing applications. Among these methods, EO water as a disinfectant has attracted greater interest in medicine and dentistry. Newly developed applications in these medical fields are used to disinfect cutting boards, gloves, contact surfaces, and animal care facilities. Among them, EO has Proved to be effective. As a result, new applications in the aquaculture and seafood industries were evaluated.

Electrolyzed water is a new technology developed in Japan. It is based on the electrolysis of water containing low concentration of sodium chloride (0). In the electrolysis chamber, the anode and cathode electrodes are separated by a diaphragm or electrolysis cell. After electrolysis, at the anode, the water is acidic with a pH of 2. The oxidation-reduction potential (ORP) is greater than 1,100mV, and the effective chlorine concentration (ACC) is 10˜80ppm. At the cathode, the pH of alkaline EO water is 11. 6. ORP is -795mV, no chlorine is produced. The nature of acidic and alkaline EO water depends on the salt concentration, electrolysis time and the water flow into the electrolysis chamber. One of the main applications in aquaculture is to treat surface water from coastal watersheds or rivers to supply water to aquaculture facilities that may be contaminated by pathogenic bacteria or viruses. After the live shells were exposed to acidic EO water for 45 and 90 minutes, reduction of CFU/g was observed at 2 to 3 days old, and chloride residues were found in the edible part, indicating that EO water can be a safe, cheap and effective method , Used for shellfish producers to deposit shellfish and ensure safe food for their consumers. EOWater can also effectively control the dinoflagellate, Alexandre, dinoflagellate and xanthellae that cause parasitic shellfish poisoning, indicating that both toxic dinoflagellates can be killed and the toxins can be oxidized.

Other aquaculture and seafood applications for EO water include salmon fillets, tilapia, tuna, stainless steel surfaces containing fish residues, surface hygiene of ceramic tiles, cutting boards and gloves. For example, researchers showed that using EO water (pH 2.6, ORP 1150mV, ACC 90ppm), cultivating raw salmon fillets in 1 for 64 minutes. 07 Log CFU/g (91. 1%) in E. Escherichia coli O157: H7 and 1. 12 barrels of CFU/g (92. Mononucleosis 3. The combination of EO water containing 50ppm and 100ppm ACC and CO gas treatment improves the hygienic quality and freshness of tuna steaks, and extends the shelf life.

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