

Effects of Lightly Salted on Fish Meat Quality Changes during Freeze-thaw Cycles

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Outline

- I. Introduction
- II. Changes in quality properties and tissue histology of lightly salted tuna meat subjected to multiple freeze-thaw cycles
- III. Effect of freezing-thawing on the quality changes of large yellow croaker treated by low-salt soaking during frozen storage
- IV. Conclusion

Abstract

Aquatic products have regional and seasonal characteristics, and are usually transported by cold chain, but cold chain logistics cannot connect every link in the transportation process, resulting in large temperature fluctuations of frozen foods. Therefore, this study focused on the effects of temperature fluctuations on the quality changes of fish meat during frozen storage. Even after repeated freeze-thaw cycles, the water-holding capacity and elasticity of the salted samples were enhanced, and the yield of tuna and large yellow croaker increased by 16.58% and 24.3% respectively, which was attributed to the changes in tissue microstructure, ice crystal morphology, and protein properties. Intracellular and spherical ice crystals were observed in bacon as opposed to extracellular and large icicles in their unsalted counterparts. Excessive freeze-thaw cycles accelerated the discoloration of cured meats, possibly due to the reduced oxidative stability of the salt. Distorted myofibers and large extracellular ice crystals were found in the unsalted meat after freeze-thaw cycles, while the salted samples were characteristic of regular and plump myofibers and intracellular ice crystals. Salted fish meat was more prone to discoloration and lipid oxidation during freezing-thawing. Therefore, further studies are needed to improve the oxidative stability of salted fish meat to satisfy the consumers' demands for healthy, fast, and tasty foods.

1 **References**

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