

Preservation and bacteriostasis functions of citral nanoemulsion on golden pomfret during 4 degrees C storage

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Golden pomfret is an economical marine fish specie which is easily prone to spoilage during process and storage. The spoilage in aquatic products is normally attributed to the oxidation, action of endogenous enzymes and the pollution of spoilage microorganisms. Hence, effective methods of preservation and bacteriostasis are vital for the fresh keeping of golden pomfret.

In our previous study, a citral nanoemulsion has been prepared, while its inhibition effects to *Shewanella putrefaciens*, one of the SSOs in golden pomfret, has also been clarified. In this study, the practical fresh keeping functions of citral nanoemulsion on golden pomfret were investigated. During storage, the citral nanoemulsion could significantly reduce the TVC value in fish. The SSOs of golden pomfret were mainly *Shewanella* sp. and *Pseudomonas* sp., among which *Shewanella putrefaciens* occupied the dominant status. The citral nanoemulsion could affect the distribution of microbial composition, which was mainly reflected by the stronger bacteriostasis on *Shewanella* sp.. Meanwhile, the nanoemulsion treatment effectively delayed the increase of freshness deterioration indexes such as TVB-N, TBARS and K value, following with higher texture parameters and sensory scores.

Overall, our study verified the ideal preservation and bacteriostasis functions of citral nanoemulsion on golden pomfret, the citral nanoemulsion could be applied as a potential fresh keeping agent in practical aquatic products.

Keywords: Golden pomfret, Citral nanoemulsion, Preservation, Bacteriostasis