Application of plant extracts as natural additives for the preservation of fishery products

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Fish and fishery products have become increasingly popular due to their high nutritional value owing to the presence of high-quality protein, n-3 polyunsaturated fatty acids, vitamins, and minerals. However, fish are recognized as being highly perishable, having a relatively short shelf life and being highly susceptible to enzymatic, microbiological, and chemical deterioration. To prevent these chemical deteriorations and delay the microbial growth in fish, various preservation methods are used. Among them, lowering the temperature of fish and using of synthetic preservatives are renowned; however, they do not completely inhibit the chemical deterioration and microbial growth in fish. Moreover, excessive use of synthetic preservatives has proven to be carcinogenic and potential health risks for humans. Therefore, there is an increasing interest in natural additives with potent antioxidant and antimicrobial properties to replace the synthetic preservatives in seafood preservation. Plant extracts with rich phenolic compounds from several plant sources, such as seaweed, guava leaves, water lily, and stevia leaves have demonstrated notable *in-vitro* antioxidant and antibacterial activity. Due to the presence of phenolic compounds, plant extracts retard bacterial growth as well as inhibit the formation of ammonia and other primary and secondary lipid oxidation products, which extends the shelf life, retains the quality, texture, and flavor of the fish fillets. Therefore, these plant extracts can be used as natural additives in the seafood industry for the preservation of fish and fishery products.

Keywords: Plant extract, Synthetic preservatives, Phenolic compounds, Antioxidant and antibacterial activity, Quality, Shelf life.