Optimization study of high hydrostatic pressure-assisted thawing method of Barramundi (*Lates calcarifer*)

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Outline

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Abstract

Lates calcarifer is the most widely farmed sea bass in Taiwan. Fish is easily spoil at room temperature. Therefore, many technologies have been used in the food industry to extend the shelf-life of fish for ease of transport. However, the quality of frozen food is highly associated with the thawing process. Therefore, this study aimed to investigate advance methods, such as high hydrostatic pressure-assisted thawing (HPAT) and ultrasound assisted thawing (UAT) on the effects of fish quality. Effects of HPAT (100 and 200 MPa) on the physicochemical characteristics of sea bass were evaluated in comparison with conventional (water thawing, WT, air thawing, AT and refrigeration thawing, RT) thawed samples. HPAT significantly decreased the thawing time. The lower drip loss and lower total volatile basic nitrogen (TVBN) were found at HPAT contrast to conventional thawed samples. HPAT at 100 MPa had the minimum pH, maintained the stability of thiobarbituric acid reactive substances (TBARS) values, Texture Profile Analysis, (TPA) and color changed. In conclusion, HPAT was applicable to the thawing process of frozen sea bass. The HPAT 100 MPa is an effective method to accelerate the thawing process and maintain the drip loss, TVBN, TBARS, TPA and Color analysis of frozen sea bass. The HPAT could be an alternative advanced thawing methods of fish to provide higher post-thaw quality.

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