

Chemical quality and microbial load of edible tissue of Japanese threadfin bream (*Nemipterus japonicus*) during storage at -18°C

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Received date: 2018.07.20

Reception date: 2018.11.11

Abstract

This research aims to investigate the effects of freezing and frozen storage at -18°C on the chemical quality and microbial load of edible tissue of *Nemipterus japonicus*. 24 samples of fish with average weight and length of 660 ± 23.3 g and 31 ± 1.65 cm were obtained from the fish market of Bushehr seaport in autumn 2015 and were stored for 180 days in a freezer. Chemical features (including crude protein, crude fat, ash, moisture, pH, total Volatile Nitrogen and Peroxide) and microbial load (total bacterial count) were determined monthly. Data were analyzed using the SPSS (18th edition) for Windows program. The results of this research indicated that the amounts of crude protein, crude fat, ash and moisture of fresh samples were 15.80 ± 0.20 , 4.27 ± 0.21 , 1.63 ± 0.54 and 78.64 ± 0.77 %, respectively; whereas these amounts were changed to 15.50 ± 0.23 , 4.07 ± 0.06 , 2.79 ± 0.19 and 77.32 ± 0.56 %, respectively after 180 days of frozen storage. The amounts of pH, total volatile nitrogen and peroxide of fresh samples were 6.90 ± 0.04 , 13.78 ± 0.22 mg N₂/100g and 0.91 ± 0.09 meq O₂/kg, respectively; whereas these amounts were changed to 7.82 ± 0.15 , 17.17 ± 0.31 mg N₂/100g and 1.99 ± 0.11 meq O₂/kg, respectively after 180 days of frozen storage. Microbial analysis showed that total bacterial count in fresh sample was 3.11 ± 0.13 log CFU/g that was changed to 3.56 ± 0.11 log CFU/g after 180 days of frozen storage. According to these results and by comparing the results with the standards, *Nemipterus japonicas* edible tissue had acceptable quality after 180 days frozen storage.

Keywords: Freezing, Chemical quality, Microbial load, Edible tissue, *Nemipterus japonicas*.