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Effects of packaging methods and storage temperatures on the quality of cobia (*Rachycentron canadum*) fillets during frozen storage

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The stability of air and vacuum packaged cobia fillets (*Rachycentron canadum*) were studied during frozen storage up to 5 months at -18°C and -25°C . Cooking yield, water content, total volatile basic nitrogen (TVB-N), lipid hydrolysis and oxidation were measured to evaluate the effects of the packaging methods and storage conditions on the quality degradation of the fillets. The lipid and phospholipid contents decreased significantly for all experimental groups, except for vacuum packed fillets stored at -25°C , whereas the amount of free fatty acids (FFA) increased considerably, indicating enzymatic activity throughout frozen storage period. The formation of lipid hydroperoxides (PV) and thiobarbituric acid reactive substances (TBARS), markers of lipid oxidation, significantly increased with prolonged storage time. Storage temperature and time proved to be principal factors regarding lipid degradation of cobia fillets during frozen storage. A lower storage temperature had more preservative effects on the lipid stability of the cobia fillets. Furthermore, the results obtained in present study demonstrated the beneficial effect of vacuum packaging of cobia fillets regarding inhibition of lipid oxidation compared to air packaging. The results of present study provide important knowledge about the stability of cobia fillets for fish processing industry. With increased knowledge, manufactures can optimize their processing leading to increased utilization, quality and value of farmed fish species.

Biography

Nguyen Thi Hang is MSc student in Food Science at Faculty of Food Science and Nutrition, University of Iceland, Iceland. She received her Bachelor's degree in Food Technology in 2008 from Nha Trang University, Vietnam. In 2015, she attended the advanced training and research course in the field of Quality Management in Fish Handling and Processing under a United Nations fellowship at Marine Research Institute, Iceland for six months. Her research interests are related to lipid oxidation in food products.

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