

Rancidity development during frozen storage of mackerel (*Scomber scombrus*): Effect of catching season and commercial presentation

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Hydrolytic and oxidative rancidity development and its effect on quality loss were studied in frozen mackerel (*Scomber scombrus*) by biochemical and sensory indices. The effect of the lipid content on fish damage at a commercial freezer temperature (-20°C) was studied for up to 12 months; thus, mackerel caught at two different times of the year (May and November) was checked, May being the period of minimum lipid content, while November is known to be the time of maximum lipid content. The study was also focused on two different kinds of fish products (whole fish and fillets). Increasing lipid hydrolysis was observed for all kinds of samples during the frozen storage; no differences ($p > 0.05$) between whole fish and fillets were found for free fatty acid formation; however, mackerel from May showed a higher ($p < 0.05$) hydrolysis development than its counterpart from November. Increasing lipid oxidation (peroxide value and thiobarbituric acid index) was observed for all kinds of samples du