



## VOLATILE COMPOUNDS AS INDICATORS OF LIPID OXIDATION IN ANCHOITA (*ENGRAULIS ANCHOITA*)

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Changes in lipid are associated with quality deterioration in fish and are often the decisive factor in determining storage life. The volatile compounds as an indicator of oxidation stability. Thus, the aim of the present work was to study the changes in the fatty acid profile, lipid oxidation and formation of volatile compounds in anchoita (*Engraulis anchoita*), was submitted 120 days of frozen storage at -18 °C. Anchoita was captured during cruises performed by FURG ship, close to the limit Brazil and Uruguay. After captured, the fishes were stored on board in thermal recipients containing the same proportion (1:1) of fish and ice/seawater mixture. In the laboratory the anchoita kept frozen at -18 °C until analysis moment. The Peroxide and Iodine values of fish muscle were determined. The fatty acid were separated and quantified using a gas chromatography with flame ionization detector (GC-FID) equipped with ZB-Wax column (30m x 0,25mm x 0,25µm). The volatile compounds were isolated by headspace-solid phase micro-extraction (SPME) with a divinylbenzene/carboxen/polydimethylsiloxane (DVB/CAR/PDMS) fiber 50/30 µm. The volatile compounds were separated and tentative identified by a mass spectrometry (HS-SPME-GC-MS). The Peroxide and Iodine values increased during storage with higher value of 15.38 meq/Kg, 65.5% respectively. The fatty acid composition presents modification during frozen period with decreased of fatty acid ratio polyunsaturated/monounsaturated (PUFA/MUFA) since 2.0 to 1.6. The PUFA were the most abundant, followed by (MUFA) and saturated fatty acid (SFA). Within PUFA, the ω3 fatty acids predominated (49.3%). The levels of several of the volatile compounds were found to change during storage. Of these, several alcohols (2-cis-peten-1-ol, 1-peten-3-ol, 1-hexanol, 1-octen-3-ol), aldehydes (propanal, 3-methylbutanal, hexanal, nonanal) and others volatiles (acetic acid, caproic acid, propionic acid) were identified.

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