Stability of docosahexaenoic acid and eicosapentaenoic acid in breads after baking and upon storage - DTU Orbit (13/12/2018)

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Wholemeal bread and white bread were prepared by substituting shortening with refined menhaden fish oil (0.5%, 1.0% and 1.5% w/w). The stability of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) were evaluated over 5 days of storage through gas chromatography (GC) analysis along with peroxide and anisidine value determinations. Sensory analysis was also performed by evaluating the fishy flavour, palatability and palatability differences compared to the control bread upon storage. The recoveries of EPA and DHA in breads after baking were 68.7%-72.8% with no further significant changes (P <0.05) upon storage for both types of breads. Results from GC analyses correlated well with peroxide and anisidine value analyses, which showed relatively low values throughout the storage time. Omega-3-fatty acids from Menhaden fish oil can be incorporated into breads by substituting the shortening at a fish oil level of 0.5% (w/w) with acceptable palatability even after a 3-day storage period.

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