

The impact of lipid content, cooking and reheating on volatile compounds found in Narrow - barred Spanish mackerel (*Scomberomorus commerson*).

ABSTRACT

Effects of four cooking methods (microwave cooking, grilling, steaming and shallow fat frying) and reheating by microwave on volatile profile in *S. commerson* were evaluated. Thirty compounds were identified in GC-MS analysis of raw samples. The number of volatile compounds had increased to 36, 46, 45 and 45 compounds in microwave cooked, grilled, steamed and shallow fat fried samples, respectively. Total concentrations of volatile had increased from 72.80 to 111.06, 74.25, 112.19 and 92.37 $\mu\text{g}/\text{kg}$, respectively. The concentration and new flavor compounds were increased by Chill-Reheating, due to the fast oxidation. The concentration of alcohol and aldehydes increased significantly ($P < 0.05$). The hexanal amount also increased in all samples and indicated a marked development of warmed-over flavor. Quantitative and qualitative ($P < 0.05$) differences were observed in volatile compounds between raw and cooked samples.

Keyword: *Scomberomorus commerson*; Fish volatile compounds; Cooking; Chill-reheating; GC-MS.