

Cooking methods affect total fatty acid composition and retention of DHA and EPA in selected fish fillets

ABSTRACT

Changes in total fatty acids in fillets of yellow stripe scad, Japanese threadfin bream, and salmon when applying different cooking methods were evaluated. All fish fillets (100 g fresh weight) were subjected to deep drying, grilling, baking in foil, and steaming. The results showed that deep frying of Japanese threadfin bream fillet significantly increased the total saturated fatty acid (955 mg/100 g) compared with the other cooking methods (499–612 mg/100 g). Baking in foil showed a significantly lower retention of total monounsaturated fatty acid in all fish fillets compared to the raw sample, especially yellowstripe scad with a total monounsaturated fatty acid content of 175 mg/100 g. Retention of DHA + EPA (mg/100 g) in yellowstripe scad fillet was found to be the highest by applying steaming method (112) compared to the raw fillet (119), followed by baking in foil (108), grilling (99), and deep frying (93). Steaming and baking in foil methods were able to retain the DHA and EPA content in the cooked fillets of all types of the studied fish compared to raw fillet. Deep frying and grilling methods showed a significant reduction of DHA and EPA contents in all fish fillets compared with steaming and baking in foil. The effect of different cooking methods was found to be significantly associated with the true retention values of DHA and EPA. In conclusion, steaming and baking in foil would be the best cooking methods for retention of DHA and EPA in yellowstripe scad fillet.

Keyword: Docosahexaenoic acid; Eicosapentaenoic acid; *Nemipterus japonicas*; Salmon; *Selaroides leptolepis*