

E2-04 Fatty acid composition of some low value marine fish species available in Sri Lanka

E M R K B Edirisinghe<sup>1</sup> W M K Perera<sup>1</sup>, K Hettiarachchi<sup>1</sup>, A Bamunuarachchi<sup>2</sup>

<sup>1</sup>Institute of Post Harvest Technology, National Aquatic Resources Agency (NARA), Colombo 15

<sup>2</sup> Dept of Chemistry, University of Sri Jayewardenepura, Nugegoda

Omega-3 type polyunsaturated fatty acids (n-3 PUFAs) are increasingly recognized as important fatty acids having a number of benefits for human health. These acids are reported to have the ability to decrease the risk of coronary heart disease, high blood pressure, arthritis, and a number of pathophysiological diseases. Fish oils are reported to have higher amount of these fatty acids than other foods.

In this study, fatty acid profiles of 20 common low-value marine fish species of Sri Lanka were determined by gas chromatography. In most species, the omega-3 polyunsaturated fatty acid content varied from 20 to 30%. The higher percentage of these fatty acids were recorded in Halmassa (*Stolephorus punctifer*, Buccaneer anchovy, 36.2%, 218.7mg/100g fish), Bolanda (*Saurida undosquamis*, Brushtooth lizardfish, 34.6%, 361.4mg/100g fish), Geelawa (*Sphyraena forsteri*, Big eye barracuda, 33.6%, 204.3mg/100g fish), Linna (*Decapterus russelli*, Indian scad, 32.4%, 376.0mg/100g fish) and Handalla (*Stolephorus indicus*, Indian anchovy, 30.9%, 276.3mg/100g fish). The most abundant omega-3 PUFAs were eicosapentaenoic acid (C 20:5 n-3, EPA) and docosahexaenoic acid (C 22:6 n-3, DHA) and these 2 acids contribute nearly 80% of the total omega-3-PUFAs. The lowest amount of omega-3-PUFAs were recorded in Orawa. sp (*Siganus javus*, Streaked spinefoot, 12.5%, 788.2mg/100g fish) and Keeliya (*Terapon puta*, Small scaled terapon, 13.7%, 416.6mg/100g fish). These two species contain high amount of omega-3 PUFA, they also have much higher amounts of saturated and monounsaturated fatty acids. Saturated fatty acids were the largest proportion in total fatty acid profile, ranging from 39.1 to 51.4% and the monounsaturated fatty acids were found to contribute a much lower proportion, ranging from 15.4 to 30.0%. The total omega-3 PUFA content in 17 fish species, out of 20, were higher than 21%, and these values are very much higher than the omega-3 PUFAs in other animal and plant fats.

---

Financial assistance by European Economic Community 3 under the STD-3 project (No. TS3\*-CT93-0207) is acknowledged.