

THE LIPID CONTENT AND FATTY ACID COMPOSITION OF
SHARK LIVER OILS FROM NORTHERN AUSTRALIAN WATERS

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There is considerable interest at the present time in fish oils due to their high content of omega 3 polyunsaturated fatty acids. We have previously shown that flesh from fish caught in Australian waters can be relatively rich in arachidonic acid and other omega 6 fatty acids as well as containing omega 3 fatty acids eicosapentaenoic and docosahexaenoic acids (Sinclair et al. 1986). Recent results of fishing trials indicate that there is considerable potential for a gillnet fishing industry in waters adjacent to the Northern Territory (Lyle and Timms 1984). The resource is multi-species, with sharks representing the major component. The flesh from these shark species has been found to be acceptable to consumers (Welsford et al. 1984) and if an industry is established in this region, other uses for shark products would assist in the commercialization of the industry.

In this report we have analysed the lipid content and composition and the fatty acid composition of livers from 13 different species of shark caught in waters off Darwin. The liver lipid content varied considerably from 6% to 63% fresh weight (mean $25\pm 13\%$). The non-saponifiable material represented $12\pm 12\%$ and the saponifiable material $85\pm 13\%$ of the total lipids. Triglycerides were the main lipid component in all species. The major fatty acids were palmitic ($27\pm 4\%$), docosahexaenoic ($16\pm 8\%$), oleic ($14\pm 5\%$), stearic ($12\pm 2\%$), palmitoleic ($5\pm 2\%$), arachidonic ($4\pm 1\%$), myristic ($3\pm 1\%$), eicosapentaenoic ($3\pm 1\%$), docosapentaenoic, omega 3 ($3\pm 1\%$), docosapentaenoic acid omega 6 ($3\pm 1\%$) and docosatetraenoic acid ($2\pm 1\%$). These results indicate that shark liver oils from northern Australian waters could be a potential source of long-chain omega 3 and omega 6 polyunsaturated fatty acids.

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