

contents among 0.67 and 4.33mg/100g, with the major value found for *Sparus aurata* and the minor value for *Aphanopus intermedius*. The fatty acid analysis revealed that the studied fishes are rich in polyunsaturated fatty acids (29-57% of the total of fatty acid), with predominance of  $\omega$ -3 components. Docosahexaenoic acid (22:6 $\omega$ 3 - DHA) is the major fatty acid detected, except for *Diplodus sargus* and *Sparus aurata* where the predominant fatty acid is the saturated hexadecanoic acid.

It was also studied the fatty acids composition in the livers of the same species. Interesting results were found related with the fatty acids accumulation process. The species with smaller content in muscles has bigger content in livers. The accumulation is bigger in *Scorpaena scrofa* (1.3% in muscle and 68.9% in liver) and smaller in *Diplodus sargus* (8.7% in muscle and 22.5% in liver). In the livers the major fatty acid is the saturated hexadecanoic acid.

### Trace elements composition in the otoliths of *Aphanopus carbo* and *Aphanopus intermedius*

FRANÇA GOMES<sup>1</sup>, J., C. Trueman<sup>2</sup>, M. Cooper<sup>2</sup>, M. Biscoito<sup>3</sup>, J. A. González<sup>4</sup>, G. Menezes<sup>5</sup>, A. Milton<sup>2</sup> & D. Sena-Carvalho<sup>6</sup>

1- University of Southampton, Southampton, UK. E-mail: [jffg105@soton.ac.uk](mailto:jffg105@soton.ac.uk)

2- University of Southampton, Southampton, UK

3- Museu Municipal do Funchal (História Natural), Madeira

4- Instituto Canario de Ciencias Marinas, Telde, Las Palmas de Gran Canaria

5- Centro do IMAR da Universidade dos Açores, Horta, Açores

6- Direcção de Serviços de Investigação das Pesca, Madeira

The identification and management of stocks is a big challenge for many pelagic fish, particularly in the case of deep water species where the observation and tagging techniques are not practical.

Otoliths microchemistry can provide an alternate approach to stock identification, based on the comparison of isotopes of trace elements on otoliths from potentially separated populations. Populations are recognized as distinct stocks when these comparisons are significantly different.

The isotopic composition of 11 trace elements was determined using 30 otoliths of *Aphanopus carbo* from Azores, Madeira, Canary Islands and Morocco. Other 20 otoliths of *Aphanopus intermedius* from Canary Islands and Morocco as well as 29 otoliths of *Aphanopus* spp. from Madeira were equally examined.

Trace elements fingerprinting successfully showed that 68.4% of all fishes were correctly classified in their regions of origin, suggesting a degree of stock separation.

Populations from Morocco and Madeira appeared to be well separated and it is possible that the chemistry of waters surrounding Canary Islands and Morocco are identical or that fishes from many regions spend some time in these waters.

The concentration of strontium and barium present in the otoliths of *Aphanopus carbo* and *Aphanopus intermedius* are significantly different in fishes caught in the same areas. This surprising result suggests a difference between species in a physical as well as behavioural way. However, more studies are necessary to understand and/or determine the reasons for these differences.

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