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on combined environmental effects on the abundance and distribution of two commercially important species in the Strait of Sicily.

Keywords: abundance, cephalopoda, distribution, environmental factors, Mediterranean Sea, Strait of Sicily.

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ICES CM 2001/K:35 (Poster)

Virtual population analysis of the Senegalese *Octopus vulgaris* stock

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Octopus vulgaris is one of the most valuable resources of the Senegalese fishery. A virtual population analysis of the Senegalese *Octopus* stock is computed on a monthly basis between January 1996 and December 1999. The model resolution is age-based using Pope approximation. In spite of the uncertainties linked to the conversion from weight to age and to the estimation of the natural mortality rate (M), the model provides a coherent explanatory tool of the dynamic of this stock during the 1996–1999 period. In particular it accounts for the events linked to the demographic explosion that occurred in summer 1999 and which had considerable impact on the Senegalese fishery.

Keywords: fishery, *Octopus vulgaris*, Senegal, virtual population analysis.

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Seasonal variations for the concentrations of trace elements in common octopus (*Octopus vulgaris*) at Portuguese waters

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Octopus vulgaris is a benthic species with a high growth rate, relatively short life cycle, widespread in various marine ecosystems off the Portuguese coast. This work reports on the elemental concentrations, i.e., Mn, Fe, Cu, Zn, V, Se, and As, determined in the octopus' digestive gland, gill, and arm tissues. We study the influence of season and gender in the distribution and in the concentrations of these elements. Octopuses were collected in four seasons of the year (autumn, winter, spring, and summer) at a coastal area of Cascais near Lisbon. At least five males and five females are assessed for each season. Elemental concentrations were determined by Particle Induced X-ray Emission (PIXE). All the tissues analysed contain Mn, Fe, Cu, Zn, As, and Se. V was only determined in the digestive gland. The highest contents of Fe, Cu, Zn, V, and Se were determined in the digestive gland. The concentration of As is higher in gills and arms. Alterations associated to season were verified for Mn, Cu, Zn, V, and As concentration in the digestive gland. This work permits to build a database for elemental concentrations in octopus tissues.

Keywords: bioaccumulation, metals, octopus, trace elements.

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