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BOOK of ABSTRACTS

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STUDY ON AGE AND GROWTH OF MEDITERRANEAN HAKE (*Merluccius merluccius* L.) IN THE GULF OF THERMAIKOS (N.AEGEAN) BASED ON WHOLE OTOLITHS READINGS AND LENGTH-FREQUENCY ANALYSIS

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ABSTRACT

In this study, the growth of hake (*Merluccius merluccius*) was compared using otolith readings and length frequency analysis. Samples were collected by gillnets. A total of 64 sagittal otoliths were examined, covering a length range of 12-42 cm, from fish taken during surveys carried out between February 2007 and November 2007. The parameters of the regression between otolith major axis and total length were $a=1.2759$ & $b=1.1184$ with $R^2=0.9597$ and $SE(b)=0.0304$, showing a high correlation between the rings counted in the otoliths and the length of the individuals. An indirect validation based on length-frequency distribution analysis was performed using the ELEFAN method on 470 individuals (length range 11-64 cm) collected between October 2006 and July 2007. The estimated von Bertalanffy growth parameters from otolith back calculation using nonlinear regression analysis (Levenberg-Marquardt method) were $L_{\infty} = 46.32$ cm, $k = 0.408$ year⁻¹ and $t_0 = -0.19$ year while from length-frequency analysis using FiSAT II (ELEFAN) were $L_{\infty} = 66.15$ cm and $k = 0.25$ year⁻¹. The computed growth performance index ϕ' was 2.942 for the first method and 2.983 for the second, showing no differences.

Keywords: age, growth, hake, otolith, length-frequency analysis