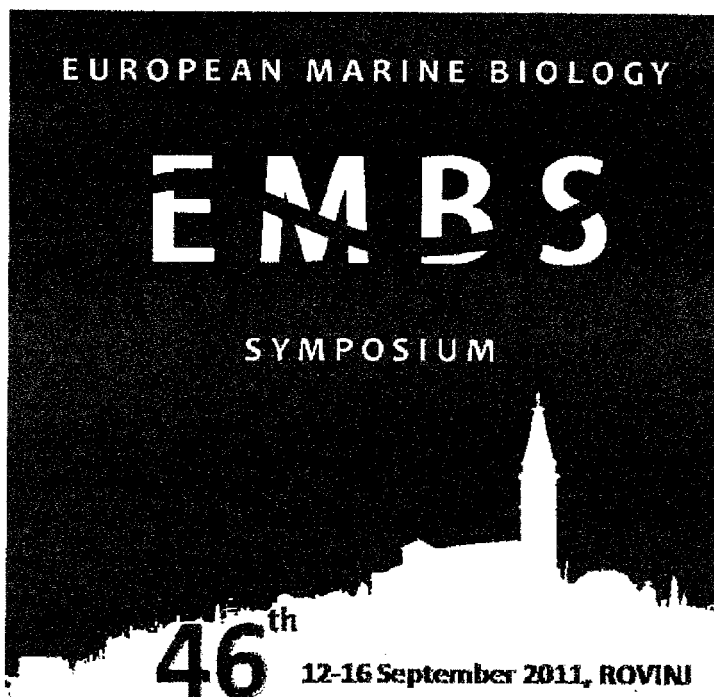


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Age and growth of juvenile *Merluccius merluccius* in the Ionian Sea (Eastern Mediterranean), based on otolith microstructure.

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European hake, *Merluccius merluccius* is one of the most commercially important and unfortunately overexploited demersal species in the Mediterranean Sea and North-eastern Atlantic. The aim of the present study was to estimate the age of hake specimens in the Ionian Sea and determine the length and daily growth rate at the end of the first year of life. The age estimation was based on the study of otolith microstructure after applying the grinding method. A total of 129 specimens ranging in total length (TL) from 102 – 438 mm, were studied. Daily increments enumeration and their width measurement were made on calibrated digital images using the Image – Pro Plus software. Estimated ages ranged between 163-717 days. The evolution of increment width along with age, showed that otolith growth was increasing during the 2 first months after hatching (larval stage) and decreasing the next two months (transition to juvenile demersal stage). From the 5th until the 13th month of life growth was relatively stable while after the 13th month, was decreasing progressively. Sex and month of formation proved to be important factors for the fluctuation of DGI width in all stages of growth, according to ANOVA. The power curve with intercept model described best the somatic growth with age according to Akaike criterion (F: $TL=65.4*(days)^{0.4-389}$, M: $TL=69.3*(days)^{0.4-353}$). At the end of the first year of life, females and males attain a mean TL of 283mm and 265mm respectively, while mean daily growth rates were 0.77mm/day for females and 0.72mm/day for males. In conclusion, our results showed that somatic growth of hake in Ionian Sea is greater than it was previously estimated using otolith macrostructure interpretation.

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