{rokbox title=|Larva de melva (Auxis rochei) :: Foto: Asvín P. Torres (COB-IEO)| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-2013-larvas-melva-auxis-rochei-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-2013-larvas-melva-auxis-rochei.jpg{/rokbox}

Raúl Laiz-Carrión, Jose M. Quintanilla, **Asvin P. Torres**, **Francisco Alemany**, Alberto García, (2013). **Hydrographic patterns conditioning variable trophic pathways and early life dynamics of bullet tuna *Auxis rochei* larvae in the Balearic Sea**. Marine Ecology Progress Series, 2013. Vol. 475: 203–212. doi: 10.3354/meps10108

Abstract: This study aims to analyze the influence of trophic interactions on larval growth variability throughout ontogenic development using data on carbon (C) and nitrogen (N) content and isotopic composition combined with a growth study by means of otolith microstructure analysis. To fulfill this objective, *Auxis rochei* larvae were sampled in the Balearic Sea (NW Mediterranean). A principal components analysis distinguished 2 types of surface water masses from a total of 40 stations that showed particular hydrobiological differences—resident Atlantic water (hereafter MW) and fresh Atlantic water (hereafter AW) masses—which showed significant differences in temperature, salinity and mesozooplankton biomass. Size-fractioned zooplankton analysis revealed greater biomass in the >250 µm fraction at AW stations, while the N and C composition of this fraction was higher at MW stations. Bullet tuna from MW were significantly larger and heavier and, consequently, had a higher Fulton's condition factor and higher daily growth rates. The δ15N and δ13C values of the zooplankton size fractions did not show significant differences between MW and AW. However, significantly higher δ13C found in MW larvae suggests differences in the origin of food supplies. Moreover, the significantly higher 15N values in bullet larvae collected in MW indicate a greater trophic specialization, possibly due to differences in the zooplanktonic food web of the water masses.
Auxis rochei
larvae showed a higher trophic level resulting from its higher 15N isotopic enrichment compared with the small zooplankton size fraction. The stable isotope analysis demonstrates its potential in distinguishing variable trophic pathways in early life stages of fish inhabiting open sea marine ecosystems.

Keywords: Bullet tuna, Larvae, Daily growth, Stable isotope, Trophic ecology, C:N ratio, Balearic Sea.