

## RELATIONSHIP BETWEEN ZOOPLANKTONIC SPECIES, PHYSICS PARAMETERS AND AGE IN WILD PARALARVAE OF *Octopus vulgaris*

M. Nande<sup>1</sup>, C. Perales-Raya<sup>2</sup>, P. García-Fernández<sup>3</sup>, A. Bartolomé<sup>2</sup>, J.J. Otero<sup>1</sup>, M. Pérez<sup>1</sup>, C. Gestal<sup>3</sup>, and E. Almansa<sup>1</sup>

<sup>1</sup>Grupo de Acuicultura Marina. IEO-Vigo, Radio Faro, 50, 36390 Vigo (Spain)

<sup>2</sup>Centro Oceanográfico de Canarias (IEO), Vía espaldón, Dársena Pesquera PCL 8. 38180 Santa Cruz de Tenerife.

<sup>3</sup>Instituto de Investigaciones Marinas (CSIC), C/ Eduardo Cabello, 6, 36208 Vigo, Pontevedra

E-mail: manuelnande.mn@gmail.com

### Introduction

*Octopus vulgaris* is a candidate species for aquaculture but high mortality rates presented in the planktonic stage due to feeding and physics requirements, this fact makes that researchers need an increase of knowledge about physics and nutritional conditions. Published studies were conducted in clarify the relationship between oceanographic parameters and the composition along the succession of cohabitants species to paralarvae cephalopod (Roura et al. 2012). The aim of this study was to analyse parameters as: composition of species cohabitants in the same niche (potential prey), oceanographic variables (temperature, salinity and depths) and estimated age in relation to the established relationship between ecological parameters and growth for paralarvae of common octopus from the wild.

### Material and methods

Wild paralarvae samples were collected in the Ría de Vigo (NW Spain), during the first peak of common octopus spawning, between May to September of 2015 on-board of oceanographic vessel “José María Naváz” (IEO). A net sampling (2 m of diameter) was used for sampling at the surface between 10 to 20 meters of depth during 15 minutes at a speed of 2 knots. Seventy-five wild paralarvae were sorted on board from surface samples collected in two stations around Cies Islands during five surveys (C1-C5). Paralarvae were slaughtered into N<sub>2</sub> liquid and kept at -80°C until their analysis. Data of seawater surface temperature were taken simultaneously to the paralarvae capture.

The zooplankton samples were filtered with a 100 µm sieve and were preserved in absolute alcohol in order to analysed composition. In each sample zooplankton was identified taxonomically, in certain cases as copepods to level of specie.

We estimated the age of the paralarvae by using the sequence of daily increments in LHS of upper beaks (Perales-Raya et al., 2014). Ages were estimated in 52 wild paralarvae capture as has been described before. Ageing precision (Coefficient of Variation) was calculated from two independent readings of each paralarva.

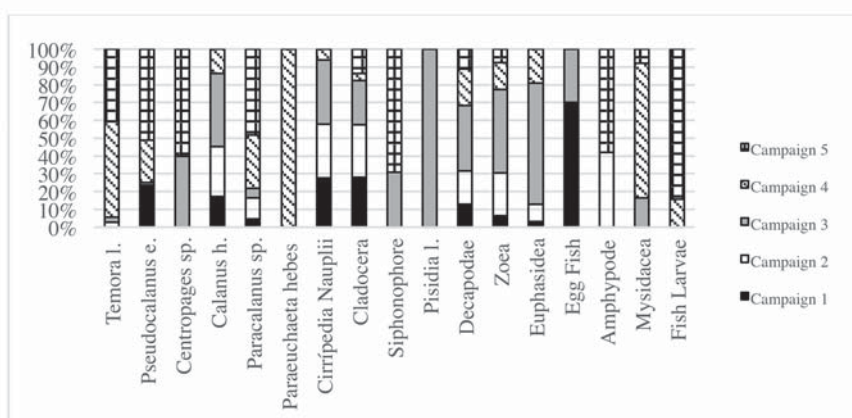


Fig. 1. Composition in percentage of cohabitants species (taxon) during the planktonic succession (May to September 2015).

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### Results

Volume of filtered seawater each sampling was of  $60.000 \pm 10.000 \text{ C/m}^3$  where, 75 wild paralarvae of common octopus were caught. During the planktonic succession, preliminary values of paralarvae age were older in July (C3) capturing paralarvae of age between 3 to 9 days post-hatched. Sea surface temperature during the period was of  $14 \pm 2 \text{ }^\circ\text{C}$ . The species that form the planktonic community vary during succession, so increasing the proportion of secondary consumers in the C3. Large copepods (*Calanus h.*), larvae of decapod, crustacean zoeae and euphausiids (*Nyctiphanes couchii*) were majority in this period (Figure 2).

### Discussion

The oldest paralarvae caught corresponds to the month of July, where the Ria de Vigo is under the upwelling phenomenon maintaining the temperature at  $14 \pm 2 \text{ }^\circ\text{C}$ . In this period, the planktonic succession is in the final stages where secondary consumers are the majority (Roura et al. 2013). Cohabiting species of octopus paralarvae at this time are zoeae decapod, euphausiid, fish larvae which form part of their diet (Roura et al. 2012). In addition, there is a correlation between the composition and the size range of prey as in culture individuals (Iglesias and Fuentes, 2014), being euphausiids, large copepods, and decapod zoeae larger than 2 mm in length.

### References

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