**Characterization of the spawning and nursery areas of *Engraulis encrasicolus* in the south-western Adriatic Sea**

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**INTRODUCTION**

*Engraulis encrasicolus* is a multiple-spawner species and prefers determined environmental conditions. While the biological aspects of the reproduction are well known, less is known about the distribution of spawning and nursery areas in the south-western Adriatic Sea. The characterization of these areas is of extreme importance for the management of the fish stocks.

**MATERIALS AND METHODS**

An acoustic survey on small pelagic fish has been carried out in July 2012 on board the research vessel G. Dallaporta in the south-western Adriatic Sea (GSA 18) in the framework of MEDIAS project of the EC DCR. Sampling design was based on 11 predetermined parallel transects perpendicular to the coastline and extended to the 200 m bathymetry spaced 10 nm apart.

63 ichthyoplankton stations located 5 nm each other (58 were planned while 5 extras have been sampled when at least one egg was observed at 200 m bathymetry).

Vertical plankton tows have been performed using a WP2 net (200 µm mesh size) until 5 m above the bottom (max depth sampled: 100 m).

Samples have been fixed in 4% buffered formalin and sorted in laboratory to search for *E. encrasicolus* eggs and larvae.

In 39 stations CTD and zooplankton samplings have been made. In laboratory, eggs have been divided in 10 stages following Regner study (1985). Larvae have been divided in two yolk sac stages as described in Somarakis *et al.* (2002).

**RESULTS**

A high frequency of egg stages 3 and 8 has been observed despite the low frequencies of the first two and the last two stages.

The abundance of eggs observed in this work was high compared to previous studies carried out in this area (Casavola, 1998; Melia *et al.*, 2002); the spatial distributions were instead comparable. The peak of abundance was observed in the southern part of the area between Bari and Monopoli.

Concerning larvae, correlations with zooplankton and salinity have been observed. Larvae distribution is apparently wider than eggs, likely due to the motility of larvae.

From the results of this work and the previous studies, it seems that spawning areas remain constant over the years, but it is important to estimate the possible effects of environmental variability in the distribution of eggs and larvae.

**CONCLUSIONS**

Spearman’s Rank correlations between eggs and larvae vs biotic and abiotic variables

<table>
<thead>
<tr>
<th>sal_1m</th>
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<th>T_1m</th>
<th>zooplankton</th>
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<tr>
<td>Eggs m⁻²</td>
<td>-0.06</td>
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<tr>
<td>Larvae m⁻²</td>
<td>-0.42**</td>
<td>-0.12</td>
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**REFERENCES**


