SUMMER FISH LARVAL ASSEMBLAGES IN FOUR AREAS OF THE CENTRAL MEDITERRANEAN

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Abstract

Our study confirms that several tuna species spawn in the central Mediterranean, especially in the vicinity of island. Tuna larvae were found in the four areas sampled (Eolias, Cabo Passero, Malta and Aegean Sea) and represented between 18% and 90% of the total abundance. The high larval abundances and occurrence of *Thunnus alalunga* shows that our sampling period coincided with the spawning peak of this species. Other larvae also found in the assemblages included meso-batipelagic, small pelagic and coastal.
Keywords: Ichthyoplankton, Fishes

Introduction

The Mediterranean Sea is an important spawning area for different fish species. The aim of this study is describing the fish larval assemblages in four different areas located in the Central Mediterranean Sea complementing previous surveys in other Mediterranean locations paying special attention to tuna larvae [1]. The presence of larval stages of fish will provide valuable information to describe summer spawning areas for different species in the Central Mediterranean Sea.

Material and Methods

Icthyoplankton samples were obtained within the framework of the oceanographical survey Marviva Med during summer 2008 in four areas in the Central Mediterranean: Eolias (24 stations, from 15th July to 19th July), Cabo Passero (8 stations from 24th-25th July), Malta (5 stations from 25th-26th July) and Aegean Sea (14 stations, from 5th to 11st July). Surface hauls were conducted at 1 m depth using Bongo 90 net equipped with 500 microns meshes. Stations were sampled during daytime and night. Samples were conserved in ethanol. Once in the laboratory, the fish larvae were sorted out and identified to the lowest taxonomic level possible, generally, species level.

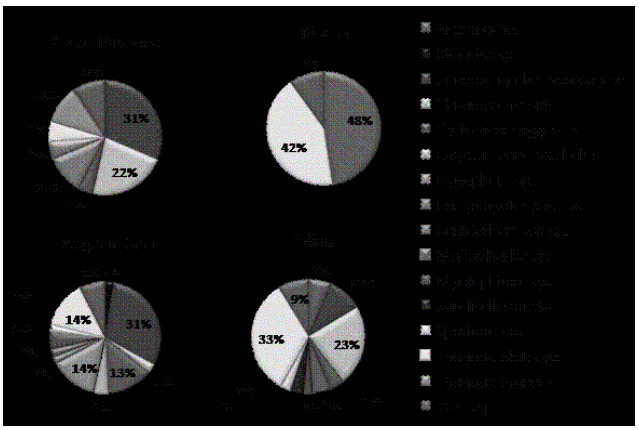

Fig. 1. Fish larval species sampled in each area (Cabo Passero, Malta, Aegean Sea, Eolias). Numbers represent the percentage of each species in relation to the total larval abundance in each area. Only species representing more than 2% of the total abundance were included. All stations within areas were pooled together

Results and discussion

Six species of *Scombridae* were identified but their presence in the different areas differed. Eolias was the area with higher diversity of *Scombridae*, being all species represented, including *Euthynnus alletteratus* which was only found herein, but excluding *Katsuwonus pelamys* that was only found in Malta. *Thunnus alalunga* and *Auxis rochei* were found in all four areas. However, only *Thunnus alalunga* was represented in abundances higher than 2% of the total abundance in each area. In Malta, the larval assemblage was clearly dominated by two species, *Thunnus alalunga* and *Auxis rochei* ,representing around 90% of the total abundance of the fish larval species identified. *Xiphias gladius*, a species included in the red list of UICN, was found in three areas except in Cabo Passero. Inversely, *Thunnus thynnus* was found in Cabo Passero and in Eolias. Larvae of large and medium pelagic species have been found in large quantities also in other areas of the NW Mediterranean Sea, defining specific larval assemblages [2], as in our case occurred in Malta. Our results suggest that the different areas sampled in the Central Mediterranean Sea are spawning areas for *Scombridae* fish and, taking into account the high larval abundances and occurrence of *Thunnus alalunga*, that sampling period coincided with the spawning peak of this species. Larval assemblages were composed by fish groups other than large pelagics. In Eolias, the community was dominated by *Thunnus alalunga* and *Chromis chromis* (a coastal species). Other medium pelagic fish larvae such as *Auxis rochei* was also found in the area. Meso-batipelagic fish species followed in importance. The coexistence of these different groups of larval species has been described in the NW Mediterranean [3] suggesting some similarities in the larval assemblages of NW and central Mediterranean. In the Aegean Sea, meso-batipelagic fish larvae dominated the community represented by *Ceratoscopelus maderensis*, *Cyclotone pigmaea* and Hygophum sp. *Thunnus alalunga* was also represented in the community. *Ceratoscopelus maderensis* and *Lampanyctus pusillus*, belonging to the meso-batipelagic species, dominated the assemblage. Our study confirms that several tuna species spawn in the central Mediterranean, especially in the vicinity of island, and co-occur with larvae of other species.

References

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