

INVESTIGATIONS ON THE ABUNDANCE AND DISTRIBUTION OF PELAGIC
EGGS AND LARVAE OF TELEOST FISHES LIVING
IN THE VICINITY OF URLA BAY

by

Savas MATER and Kevser YALCIN

Ege University, Faculty of Science, Biology Division
Hydrobiological Department, Bornova-Izmir (Turkey)

Résumé

Ce travail traite l'abondance, la distribution et la morphologie des oeufs et larves des poissons osseux se trouvant dans la baie d'Izmir, près d'Urla. Les résultats de cette recherche ont révélé que les distributions des oeufs et larves de poissons sont influencées par la température et surtout par la pollution.

INTRODUCTION

Up to the present one, there is no comprehensive study on the distribution of the pelagic eggs and larvae present in the Urla Bay, which comprises an important site in the southern shores of Izmir Bay. The aim of this investigation is to determine the breeding periods of the species from the polluted towards the unpolluted zones, as well as the distribution and abundance of the eggs and larvae, taking into consideration the emergence and gradually increasing pollution in the inner parts of the Urla Bay, which is resulting from the accumulation of debris and a lack of water circulation.

METHODS

With the aim of gathering eggs and larvae, monthly samples are collected from three stations chosen according to their pollution states, on a yearly basis. These three stations are: 1. Inside of the Urla Bay, 2. Outside of the Urla Bay and 3. The vicinity of the islands.

To increase the sample sizes collected from the stations, UNESCO WP-2 Model plankton net are used, which have a mesh size of 200 micron and an opening diameter of 0.57 meter. Because of the shallowness of a

part of research site (station 1:5 m) and the general occurrence of the pelagic eggs and larvae on the surface: horizontal hauls of 15 minute duration are carried- on, while the vessel speed is 2 knots. During each haul, 228 m³ sea water is strained.

Results

The total ichthyoplanktonic material collected from the research area includes 4726 eggs and 510 larvae. Among the eggs; Engraulis encrasicolus (Cuv.) comprise 47.16 % the second place in abundance is taken by Mullus barbatus (L.) with 17.16 %. Then comes Arnoglossus sp. (12.11 %). Among the larvae; Blennidae and Atherinidae are most abundant in postlarvae, while Engraulis encrasicolus (Cuv.) takes second place in pre and postlarval. In the research area, it is established that there is a gradual increase both qualitatively and quantitatively from the inner Bay towards the islands. Furthermore, the inner Bay is found to be richer in postlarvae.

Generally, a retardation in breeding periods during March and September is observed. Collected number of eggs shows a minimum during those months. With the beginning of December, newly spawned eggs are seen in the plankton. With the appearance of spawning new species in May, spring and summer seasons, number of eggs gradually increased in June, July and August egg number reached a maximum. During the colder months of the year, a drop in the number of larvae is observed. During May and July, number of larvae increased.

At the conclusion of the investigation, finding of eggs belonging to economically important species are significant. The main reason of this finding is the gradually increasing pollution of the İzmir Bay, which is the most important factor in effecting and limiting the distribution and abundance of eggs and larvae. Urla Bay and its vicinity provide a suitable feeding and breeding medium with its rich fauna and flora characteristics for various teleost species which can escape from the inner İzmir Bay. However, many dead eggs were collected in August as a result of increasing temperature, hence the increasing mortality. The increasing number of postlarvae belonging to Blennidae and Atherinidae in inner Urla Bay during May and July is significant.

Unless some preventive measures are taken against the pollution in İzmir Bay, the joining of Urla Bay, which is a suitable place for the development of eggs and larvae of teleost fishes, with this polluted zone seems unavoidable.