

## DISTRIBUTION OF ANCHOVY (*ENGRAULIS ENCRASICOLUS PONTICUS*) EGGS AND LARVAE OFF SINOP IN 2003 (SOUTHERN BLACK SEA)

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### Abstract

In this study, distribution of anchovy (*Engraulis encrasicolus ponticus* Aleksandrov, 1927) eggs and larvae was investigated off Sinop (southern Black Sea, Turkey) in 2003. The mean egg quantity of anchovy was determined as  $27 \pm 9.26$  and  $80.6 \pm 34.52$  in vertical and horizontal plankton tows, respectively. Larvae numbers of anchovy in vertically and horizontally hauls were  $8 \pm 2.52$  and  $22.3 \pm 11.3$ , respectively. The spawning season of anchovy was confirmed to be between May and September.

*Keywords* : *Ichthyoplankton, Black Sea.*

### Introduction

Anchovy is the most important fish of the Black Sea constituting more than 60% of total catch [1]. This study aims to evaluate distribution of anchovy eggs and larvae off the coast Sinop of the southern Black Sea in 2003.

### Material and Methods

The ichthyoplankton samples were collected at six stations. These stations were 1-4 miles off-shore off Sinop (southern Black Sea, Turkey) having a depth of 40-300 meters. Samples were collected monthly during the period January-December 2003 except August. The samples of the plankton were carried out from vertically tows from anoxic zone to surface using a plankton net (having a 50 cm diameter mouth opening and 210 mm mesh size). Horizontal hauls were also utilized by towing the net for 15 min at vessel speed of 2.5-3 miles  $h^{-1}$ . The samples were preserved with borax buffered 4% formaldehyde solution.

### Results and Discussion

In generally, anchovy eggs and larvae were found from May to September. In vertical hauls, the most abundant eggs and larvae were found in July. In horizontal hauls, the most abundant eggs were found in July and most larvae were found in June. In vertical hauls, eggs and larvae ranged from 7.5 to 260  $ind.m^{-2}$ , and from 5 to 115  $ind.m^{-2}$ , respectively. In horizontal hauls eggs and larvae were found in the range of 0.4-159  $ind.100 m^{-3}$  and 2.6-52.1  $ind. 100m^{-3}$ , respectively. Previously, it was found that the anchovy eggs and larvae were 0-30  $ind.m^{-2}$  and 0-2  $ind.m^{-2}$ , respectively in 1991 and were 0-40  $ind.m^{-2}$  and 0-26  $ind.m^{-2}$ , respectively in 1992 [2].

Tab. 1. Average number ( $ind.m^{-2}$ ) of anchovy (*Engraulis encrasicolus ponticus*) eggs and larvae in the northern (Sevastopol Region) and the southern (Sinop Region) Black Sea in the summers of 2000, 2001 and 2003, from vertical tows.

Period	Egg Vertical ( $ind.m^{-2}$ )		Larvae Vertical ( $ind.m^{-2}$ )	
	Sinop	Sevastopol	Sinop	Sevastopol
*2000 (June-August)	31.7	10.2	2.5	0.7
*2001 (June-August)	-	31.6	-	1.2
**2003 (June-July)	182	-	49	-

\*2000 and 2001 data were taken from [3].

\*\*In this study

When results of this study are compared with previous studies, more eggs were found off Sinop coasts of Turkey than those in Sevastopol coast of Ukraine in vertical hauls. Moreover, the numbers were much higher in 2003 compared to 2002 (Table 1). The high numbers of eggs and larvae found in 2003 are in parallel with the highest landing values of anchovy in the same year (about 373 thousand tons [4]).

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