First Age Estimates of Albacore, *Thunnus alalunga* Bonn., in the Aegean Sea using scales

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INTRODUCTION Albacore distribution in the Aegean sea is discontinuous with a higher concentration mainly in the north between the Sporads islands and the penisula of Chalkidiki where the most important Greek fishery fleet for albacore operates since several years.

Preliminary data on fishing grounds, fishing period, total catch an size distribution are reported by DE METRIO G. et al.(1988) but there i no certain data about the age structure of the stock in this area. Ag estimates have been made for albacore in the Central Mediterranean usin the scales (CEFALI A. et al., 1982). Some other estimates were perfome in the Atlantic using different methods (BEARDSLEY G.L.,1971; BARD F.X. 1974; GONZALEZ-GARCES A. and A.C.FARINA-PEREZ, 1983). This study is first approach to evaluating the age and the growth of albacore caugh in the Aegean sea using the scales.

MATERIALS AND METHODS The fork length and the weight of 868 fish i 1986 and 379 in 1987 was measured at Alonisos port. Scales wer collected from 219 fish during the autumn of the same years. Date o capture and fork length (FL) were recorded for each specimen. For th age estimation, reading of the scales was performed under an optica microscope. The average lengths (FL) at age were calculated.

RESULTS AND DISCUSSION The fork length (FL) of the albacores range from 54.8 to 82 cm and the age estimated were from 1+ to 6+ years. Th smallest specimen of the sample was 1+ year old while the largest was 6 years old. A size-age key for 219 albacores grouped in size classes o 2 cm is given in Table I.

Table I. Size-age (estimated) key of the 219 albacores studied. Th fork length (FL) is regrouped in classes of 2 cm.

FL (cm)	Estimated age						
	0+	1+	2+	3+	4+	5+	6+	TOT
54-56		1	1					2
56-58		3						3
58-60			2					2
60-62			8	1				9
62-64			20		1			21
64-66			31	10				41
66-68			16	23	1			40
68-70			5	32	1			38
70-72				15	11			26
72-74				4	12			16
74-76				1	10	2		13
76-78					1	1		2
78-80				1	1	2	1	5
80-82					1			1

The age classes most present in the sample were classes II, III and IV with a percentage of 37.9%, 39.7% and 17.8% respectively. Very few individuals, practically 4.6% of the sample, were estimated as belonging to the age classes I, V, and VI.

Size distribution of the catch in 1986 and 1987 is reported in the Fig.1. The average fork length of the albacore was 68 cm in 1986 and 67.6 cm in 1987 where the average weigth was 5.8 kg and 5.7 kg respectively. Most of the caught fish lengths (FL) ranged between 60 and 74 cm correspond to individuals of the second, third and fourth age classes, 39.3% - 41.8% - 12.8% in 1986 and 37.5% - 39.9% -12.2% in 198 respectively, according the estimated size-age key. In the table II, th average values of length (FL) at age classes are reported.

Table II. Average fork length at age classes and standard deviation estimated.

AGE CLASSES	n	FL (cm)	st.deviation
I	4	56.5	0.8
II	83	64.5	2.5
III	87	68.8	2.6
IV	39	73.0	2.9
V	5	77.0	1.5
VI	1	79.0	-

Taking into account the very limited number of the individuals i the sample, smaller than 60 cm and bigger than 76 cm, we do not conside the estimates of the length at age for the classes I, V and VI as representatives. It is obvious that a sample including more individuals of the extreme length classes should be studied. Furthermore results obtained by various authors using the same or different methods differ so given the importance of a correct age estimation for the stock assessment, a validation of the used method must be performed.

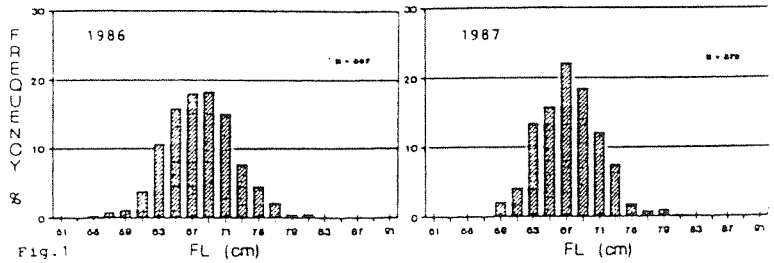

Fig.1

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