AGE AND GROWTH OF THE DEEP WATER ROSE SHRIMP *PARAPENAEUS LONGIROSTRIS* IN THE HELLENIC IONIAN SEA

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Abstract
The age and growth parameters of the deep water rose shrimp *Parapenaeus longirostris* in the unexploited fishing grounds of the Hellenic Ionian Sea were examined in the present work. The data were collected during four experimental surveys in the framework of one scientific project of HCMR, carried out in the Ionian Sea. The mean modal length and the growth parameters showed that females had higher growth rate of males.
Keywords : Deep Waters, Ionian Sea, Decapoda, Growth.

P. longirostris constitutes a valuable target species for most fisheries in the Mediterranean Sea. It is considered one of the most important species of the crustacean fishery in Greece, in terms of landings being very widespread both in the Aegean and Ionian Seas, mainly at depths ranging between 150-400 m. In the Hellenic seas, only very few studies exist on its biology and fishery [1-3].

All samples were collected during four trawl surveys in the northern part of the Hellenic Ionian Sea (eastern Mediterranean Sea) (October 1999, April, July, September 2000) (INTERREG project) at a depth range from 300 to 500 m. The Bhattacharya length-based method as implemented in FiSAT was used to estimate the age. The VonBertallanffy model was used for growth parameter estimation as applied by ELEFAN I programme. The growth index ϕ' was also estimated for comparison purposes.

The carapace length of females ranged from 8 to35 mm, with the bulk of the stock being between 21-29 mm. In males, in spite of the same range of the carapace length, the majority ranged from 18 to 24 mm, in both areas. Size distributions of males showed 1-2 well-separated modes. Modal groups in females varied from 2 (in April and September 2000) to 3 (September1999, July 2000) well discriminated. The standard deviation and separation index values derived from the length-based analysis indicated well-separated age groups. Autumn months were better represented for both sexes as these included more -well separated- age groups (Table 1).

Tab. 1. Identified mean lengths-at-age from the length-frequency analysis of females and males *Parapenaeus longirostris* during the five seasonal surveys in the Ionian Sea, using the Bhattacharya method.

FEMALES				
Modes	9/1999 N=415	4/2000 N=274	7/2000 N=234	9/2000 N=75
	Mean CL			
1	13,77	19,61	21,77	22,86
2	22,63	24,64	25,02	27,64
3	27,67		29	
MALES				
Modes	9/1999 N=513	4/2000 N=301	7/2000 N=67	9/2000 N=198
	Mean CL			
1	12,32	18,64	21,52	21,95
2	21,21	24,82		27,35
3	27,04			

The parameters of the von Bertalanffy growth equation were estimated as follows: L∞=33.2 mm, K=0.68 1/yr for males and L∞=37.2 mm, K=0.76 1/yr for females. Rn was calculated as 0.219 and 0.168 for males and females, respectively. The growth performance index ϕ' was calculated as 2.85 for males, and 3.03 for females. The greater values of L∞, K and ϕ' and the mean lengths-at-age reinforce the hypothesis that growth is faster in females than males. Similar growth rates for both sexes have been shown in various areas of the Mediterranean [3-4].

References

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