

Relationship between total length vs. otolith length in *Mullus barbatus* L. and *Trisopterus minutus capelanus* (Lacepède) in the Northern Tyrrhenian Sea

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Relationships between the current body length of a fish and the sizes of one or more marks in some hard part of its body are widely used in fishery biology. For example back-calculation method enable fishery researchers to obtain growth parameters estimates that, in addition, could be used to validate results coming from direct reading of otoliths. Moreover computation of the relationship between fish total length (T.L.) and otolith size is very useful in trophic ecology studies, where otoliths are often the only recognizable fish structure in the stomach content of many predators.

This work deals with the relationship between fish T.L. vs. otolith length in two very common fish species in the Northern Tyrrhenian Sea (DE RANIERI *et al.*, 1988; BIAGI *et al.*, 1990, 1992): *Mullus barbatus* and *Trisopterus minutus capelanus*. The specimens were collected by otter trawl in the area between Elba and Giannutri Islands during October 1991. Five otoliths (Sagitta) were sampled for each 1 cm size class of fish T.L. The sagittae were cleaned and preserved in 50% alcohol after extraction. Otolith length was measured by micrometric binocular and it was approximated to the nearest 0.16mm.

Analysis of the scatterplots suggest a linear relationship in both species. The parameters were estimated by model I of linear regression (SOKAL & ROHLF, 1981; FRANCIS, 1990) and the relationships are shown in Fig. 1 and Fig. 2 for *M. barbatus* and *T. minutus capelanus* respectively.

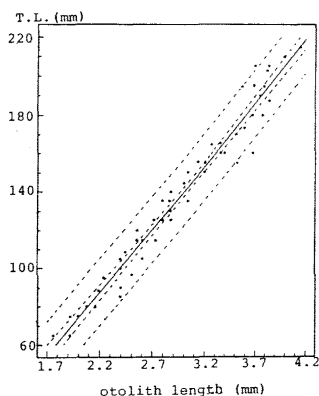


Fig. 1: *M. barbatus*

$$n^{\circ} = 60$$

$$y = -56.68 + 65.48 * x$$

$$r = 0.9818.$$

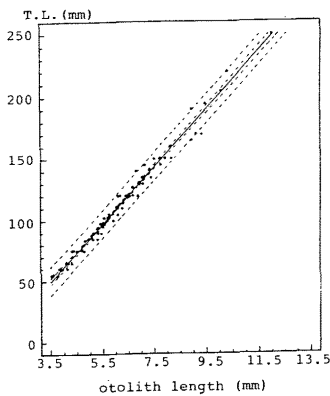


Fig. 2: *T. minutus capelanus*

$$n^{\circ} = 70$$

$$y = -31.78 + 23.29 * x$$

$$r = 0.9913.$$

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