Some aspects on the fecundity and reproduction of the sand sole, *Solea lascaris*, in Iberian coastal waters

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Introduction

The sand sole *Solea lascaris* is commercially important in the Iberian fisheries as it reaches high values in the market. Only a few studies were directed to the reproduction and fecundity of this species in Iberian waters This work aims to collect information and compare it using the same methodology.

Results & Discussion

Sex-ratio by length-class showed:
 male dominance under 25 cm total length and
 females dominance over 25 cm total length.

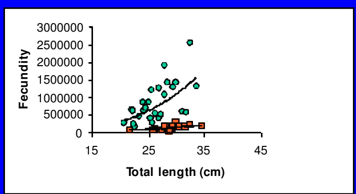
The length at first maturation for females was:
 19.4 cm in the north of Portugal,
 21.8 cm in the southern Portuguese coastal waters and
 21.1 cm in the southern Spanish coast.

The reproductive season occurred between February and September
The analysis of the histology of the ovary, not only indicated determinate fecundity but also multiple spawning during the reproductive season.

Potential fecundity was estimated in:
 155226±71175 oocytes/female in the north and
 879839±566146 oocytes/female in the south.
These values are significantly different (t=7.58; p=0.004).
It was not possible to estimate the fecundity for Cadiz area because there weren't enough data.

The fecundity-length (cm) relationship is:
 Fecundity=36.999.total length$^{2.462}$; R^2=0.288 for the northern waters, and
 Fecundity=28.301.total length$^{3.114}$; R^2=0.392 for the south.

The fecundity estimates for the northern area were lower compared to the south and to other studies (Deniel, 1984; Dinis, 1986). This could be related not only to the populational characteristics but also to the way mature females were obtained. In the north we relied only on fish sold in the auction, after heavy manipulation with probable oocyte losses whereas in the south fish were obtained directly from the fishing vessels.



Fecundity size relationship estimated for sand sole caught in the North coast (squares) and the South coast (dots).

Material & Methods

867 sand sole, *S. lascaris*, were collected between June 1998 and August 1999, from commercial fisheries in the North and South of Portugal as well as the Bay of Cadiz, South of Spain, in order to study some aspects of the reproduction and fecundity of this flatfish.

Standard histological methods were used replacing parafin by Leica historesin as mature ovaries are very friable.

The length at first maturation was obtained with asymmetrical maturation ogives computed with the Astudillo & Sanchez (1989) method.

Fecundity was accessed by the stereological method (Laird & Priede, 1986).

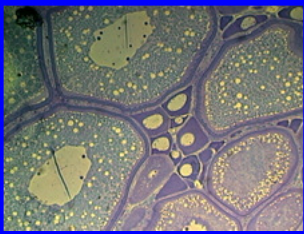
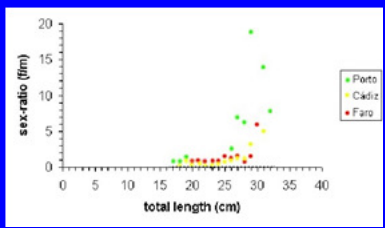
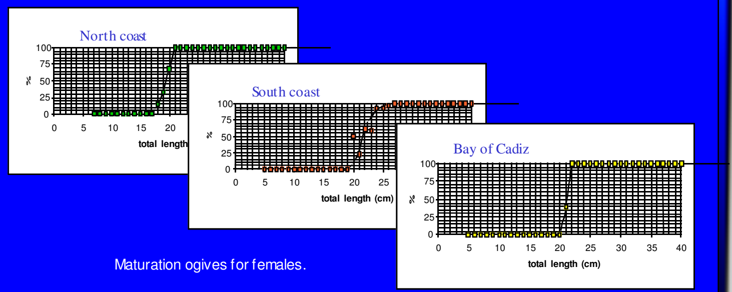


Image of the ovary of *Solea lascaris*, as accessed by the optical microscope (100x) (and with toluidine blue staining), showing small immature oocytes and several stages of vitelogenesis.



Sex ratio (females/males) by length class.



Maturation ogives for females.

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