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Selectivity estimates for *Amblygaster sirm* (Clupeidae) in the small-meshed gill net fishery on the west coast of Sri Lanka

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ABSTRACT

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Selectivity of *Amblygaster sirm* by gill nets of seven mesh sizes ranging from 2.3 to 3.8 cm stretched mesh was studied for a period of 12 months in the coastal waters off Negombo on the west coast of Sri Lanka. The size range of fish caught was 9.0–22.0 cm. Selection by mesh sizes smaller than 3.0 cm was towards the lower end of the selection curve.

Estimated values for selection factors ranged from 5.11 to 6.03 and those for optimum selection lengths varied from 12.9 to 19.7 cm. The highest selection factor was observed for 2.9 cm mesh, probably due to wedging of larger individuals in this mesh.

INTRODUCTION

Small-meshed gill nets are widely used in the coastal areas off Negombo on the west coast of Sri Lanka (Karunasinghe and Fonseka, 1985). These nets are operated mainly from 5–7 m fibre-reinforced plastic boats powered by 8–25 hp outboard engines. *Ambligaster sirm* (=*Sardinella sirm*) is the main species caught and has been estimated to contribute about 70–80% of the total production of this fishery (Dayaratne, 1988).

In stock assessment studies on fish, especially in tropical areas, catch per unit effort by gill nets is commonly used (Gulland and Harding, 1961). However, as gill nets are highly size-selective, a correction for gear selectivity must be made when estimating population parameters (Cucian and Regier, 1966; Hamley, 1980). Therefore, selectivity of gill nets has received wide attention (Ishida, 1964; Hamley and Regier, 1973; Hamley, 1975; Rudstam et al., 1984; Borgstrom, 1989).

The small-meshed gill net fishery contributes about 90% of the small pe-

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