a ii 12

Cey . J. Sci. (Bio. Sci.) Vol. 25, 1998

REPRODUCTIVE BIOLOGY OF THE TRENCHED SARDINE AMBLYGASTER SIRM (WALBAUM) FROM THE WESTERN COASTAL WATERS OF SRI LANKA.

by

W.P. N. Karunasinghe [1] and M.J.S. Wijeyaratne [2]

ABSTRACT

Aspects of reproductive biology such as sex ratio, mean size at maturity, breeding season, spawning frequency and fecundity of Amblygaster sirm inhabiting the western coastal waters of Sri Lanka were studied for a period of three years. During most of the months of the study period, the sex ratio was observed to be very close to 1:1. In the smallest and the largest size groups, the relative abundance of females was higher than that of males. The lengths at 50% maturity for the males and females were estimated to be 15.9 and 15.0 cm respectively. The absolute fecundity was found to vary from 55000 eggs to 95, 500 eggs for the fish ranging in total length from 16.0 to 20.0cm. About 75% of the eggs that separate from the ovary are shed during spawning. Main spawning season in this region was observed to be from April to June.

INTRODUCTION

Amblygaster sirm (Walbaum) is an abundant clupeid species in the Western Indian Ocean, South China Sea and coastal waters around Papua New Guinea, Australia (Fischer and Bianchi 1984), Indonesia, Philippines and Thailand (Chullasorn and Martosubroto 1986) It plays an important role in the pelagic fish production of the coastal states of the Indian Ocean. On the west coast of Sri Lanka, this species contributes about 25 % to the pelagic fish production of the country (Anon. 1984)

Although some work on the fishery of *A. sirm* on the west coast of Sri Lanka has been carried out by Dayaratne (1985), Karunasinghe and Fonseka (1995), Karunasinghe and Wijeyaratne (1991a), Siddeek *et al* (1985), a few studies have so far been done on the biology, of this species. Studies on the reproductive biology, spawning grounds and eggs and larvae of *A.sirm* have been carried out in India (John 1951, Nair 1960, Chacko and Gnanamekalai 1963, Radhakrishnan 1973), the Philippines (Ronquillo 1960), and Sri Lanka (Dayaratne 1984). The eggs and larval stages of this species have been reported from the costal waters off Sri Lanka *A.sirm* breeds twice a year (Dayaratne 1984). Two batches of oocytes have been observed in the mature ovaries indicating that this species is a serial spawner (Radhakrishnan 1973).

In the present paper, the sex ratio, size at first maturity, breeding season, spawning frequency, and fecundity of *A. sirm* from the western coastal waters of Sri Lanka are reported.

1. National Aquatic Resources Agency Crow Island, Colombo 15, Sri Lanka.
2. Department of Zoology, University of Kelaniya, Kelaniya, Sri Lanka.