

**D-09: Some aspects of biology, fishery and total production of dolphin fish (*Coryphaena hippurus*) in Sri Lanka**

J Jinadasa

(Dept. of Zoology, Univ. of Sri Jayewardenepura, Nugegoda)

Dolphin fish (*Coryphaena hippurus*) is a pelagic fish distributed in tropical seas. It is a commercially important fish. It has the highest Specific Growth Rate (SGR) for cultivated marine and brackish water fish and it varied from 4- 13% of the body weight day<sup>-1</sup>. The age structure and some aspects of biology of this fish in the Pacific and Atlantic Oceans have been studied. However, its biology and the fishery in the Indian Ocean is not known. This fish is widely caught in the northeastern coast of Sri Lanka, from May to August every year and it plays an important role in her commercial fishery.

SECTION 2

The purpose of the present study was to report its size, age structure, the pattern of recruitment to the fishery and the total production in Sri Lanka with the view to formulate a management programme.

The present study was initiated in 1984 and the data collected since then upto December 1994 are used in the present study. Dolphin fish caught in the commercial fishing vessels of Negombo and Beruwela, in the western and south western sub fishing areas were sampled fortnightly, between 0500-0600 h at the time of landing the fish catch. Fish were identified according to FAO key (1984), Munro (1955) and Gibbs and Collette (1959). The fork lengths and weights of male and female fish were measured using a metal tape and a spring balance and recorded. The age of the fish was calculated according to Oxenford and Hunte (1983). The total fishing effort for the 2 sub areas were obtained from the site offices. The total number of registered boats, according to sub areas were obtained from the Dept of Fisheries. The Catch Per Unit Effort (CPUE) for the present study is defined as the number of kg of fish caught boat<sup>-1</sup>. The total production of fish was estimated using the above data according to Gulland (1975).

Meristic and morphometric characters studied indicated that only *C. hippurus* is present in the study area. However previous studies have reported *C. equiselis* in Sri Lanka. They are caught in medium size (9 m) boats. The length of the female fish caught varied from about 35 to 145 cm and that of male fish from about 40 to 160 cm. The size of fish can vary seasonally. The largest fish were caught from about September to December and February to March and the smallest fish from about June to August. The modal length of female fish ranged from about 60 to 85 cm and that of male fish from about 65 to 120 cm. The length and weight relationship established for males and females indicated that the males are heavier than females of the same size. The age of the exploited fish ranged from zero to 3 years, majority of fish caught are less than one year old fish. The smallest size of fish caught is 35 cm and the largest 160 cm and most of the fish (70%) caught are mature.

The CPUE estimated for the 2 sub areas varied from 0.35 to 0.52 with a mean of 0.50 kg boat<sup>-1</sup> operation<sup>-1</sup>. The total dolphin fish production in Sri Lanka is about 197 t year<sup>-1</sup>.

According to the results of the present study only one species of dolphin fish is present in the sea around Sri Lanka. The length of the fish caught commercially ranged from 35 to 160 cm, it varied with the sex of the fish and the season. Most of the fish caught are less than one year old fish and are mature. The CPUE in the 2 areas are 0.35 and 0.52 kg boat<sup>-1</sup> operation<sup>-1</sup>. The total fish production in Sri Lanka is about 197 t per year.