

STUDY OF THE POPULATION DYNAMICS PARAMETERS
OF Penaeus indicus (H. MILNE EDWARDS)
IN NEGOMBO AND CHILAW, SRI LANKA
DURING THE PERIOD SEPTEMBER 1982 TO JUNE 1986.

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Growth and mortality parameters of Penaeus indicus from Negombo and Chilaw caught between September 1982 and June 1986 are analysed on annual basis, based on length frequency data. The yield isopleths were then drawn.

The asymptotic length for different periods and areas varied from 20.5 - 24 cm (total length) and growth constant of the von Bertalanffy growth formula was found to be between 1.5 - 1.8. The total mortality varied from 2.89 - 4.49. The mean natural mortalities for the whole period of study were 2.7 and 2.6 for Negombo and Chilaw respectively, whereas fishing mortality varied between 0.39 - 0.97 in Negombo and 0.03 - 1.86 in Chilaw.

From the relative yield isopleths drawn, an increase of fishing effort which results in a value of fishing mortality of 2.6 can be suggested with an increase of the minimum mesh size. As this is a multispecies fishery the optimum mesh size should be determined after finding a balance between the other commercially important shrimp species.

As the length at first spawning is much higher than the smallest length of shrimps being caught, precautions should be taken to avoid the reduction of the spawning stock below the level where recruitment is affected, either by restricting the areas and time of fishing.

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