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# DISTRIBUTION OF MILK FISH, *CHANOS CHANOS* (PISCES: CHANIDAE) FRY IN RUSHIKULYA ESTUARY

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## ABSTRACT

The *Chanos* fries were available both during low and high tides in the Rushikulya estuary. However, the catch was higher during the high tide than the low tide. There were two peak periods of availability of the fries; one in April and the other in August. The catch of the fries was highest in August and lowest in December. The occurrence of the fry throughout the year indicated its protracted breeding behaviour.

Key-words: Milk fish, *Chanos chanos*, Rushikulya estuary.

Rushikulya estuary is quite fertile and brackish water fishes are regularly caught in this estuary. River Rushikulya joins the Bay of Bengal at Ganjam and forms an extensive estuary. There is regular tidal inflow into the mouth of the river from the Bay of Bengal. The milkfish, *Chanos chanos* (Forskal) is an important food-fish and is extensively cultured in brackish water ponds in Southeast Asia, particularly in the Philippines, Indonesia and Taiwan (Chaudhuri, Juario, Primavera, Samson and Mateo, 1977). The occurrence of the fry has been reported by Basu and Pakrasi (1976) on the east coast of India from Vishakhapatnam to Tamilnadu and in lower Sunderbans in West Bengal; by Rao (1970) in Pulicat lake; by Saha, Chakraborty, Mahalanobish, Nag, Paul, Dey (1964) at Janput sea coast and by Saha, Chakraborty, Jana, De, Misra, Pal, Talapatra (1964) along Alampore coast on the western banks of Hooghly estuary. There is no information on the occurrence of the larvae and post-larvae of milkfish from the coastal waters of Orissa. The present note communicates the same.

The fries collected from Midnapore type shooting net (Jhingran, 1965) of 1/8" mesh size from October 1983 to September 1984 covering high and low tides of a day on new-moon and full-moon days were preserved hourly and considered as unit of effort. The *Chanos* larvae were identified by elongated, compressed and transparent body, a prominent black spot over the air bladder, terminal mouth, upper jaw hanging over the lower jaw, deeply forked caudal wings with slightly longer upper lobe, distal anal fin,

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scattered pigments over the head and body and having 33 pre-anal myotomes. They are bluish gray above the lateral line with silvery white abdomen. The percentage of the number of *Chanos* fries in the total number of fish fries in each sample were calculated and noted. The seasonal variations, the lunar periodicity and the hourly catch of the fry in high and low tides were recorded.

The catch of the *Chanos* fries per unit effort was highest in the month of August (17.52%) and lowest in December (5.66%). The percentage of *Chanos* fries decreased from October to December, and thereafter increased upto April (10.1%). From April the percentage of catch decreased in July (7.57%) but then there was a sharp increase in the month of August. The percentage of the fry was higher at high tide than at low tide (Fig.1). The percentage of the fries decreased gradually from the first hour to the third hour of the catch in each month (except in February, October and December) during high tide but during the low tide the reverse was the case (Fig.2). There was higher catch during the full-moon period from January to June (except in April/May) and from July to December (except in September) reverse was the case (Fig.3).

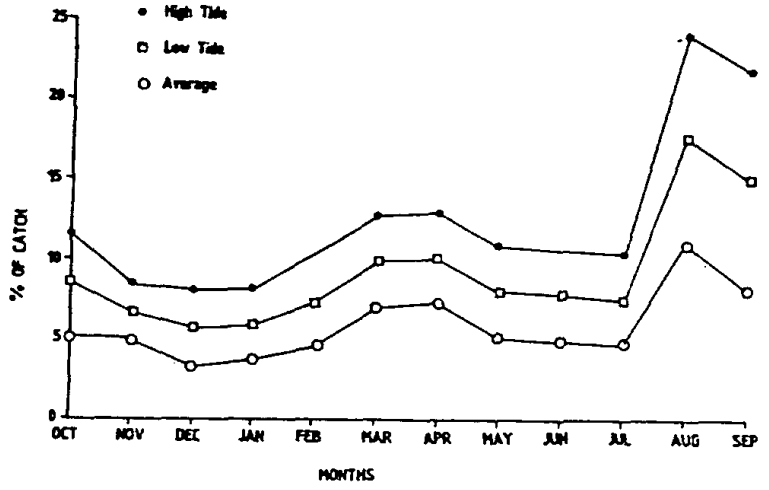


Fig.1. Average percentage of *Chanos* fries.

Rao (1970) reported the continuous ingress of the milkfish larvae into the Pulicat lake from February/March to October with two peaks. Quantitatively the peak in August/September was more important than the one in April. A secondary peak in October/November was reported for Coramondel coast by Ganapati, Chacko, Srinivasan and Krishnamurthy (1950) and Chacko, Abraham and Andal (1953). Tampi (1957) stated that the spawning season of *Chanos* was from February to May and reported a single peak and single spawning. He reported that the occurrence of the fry in October/November might be due to breeding in those months by another population. Saha, Chakraborty, Mahalanobish, Nag, Paul, Dey

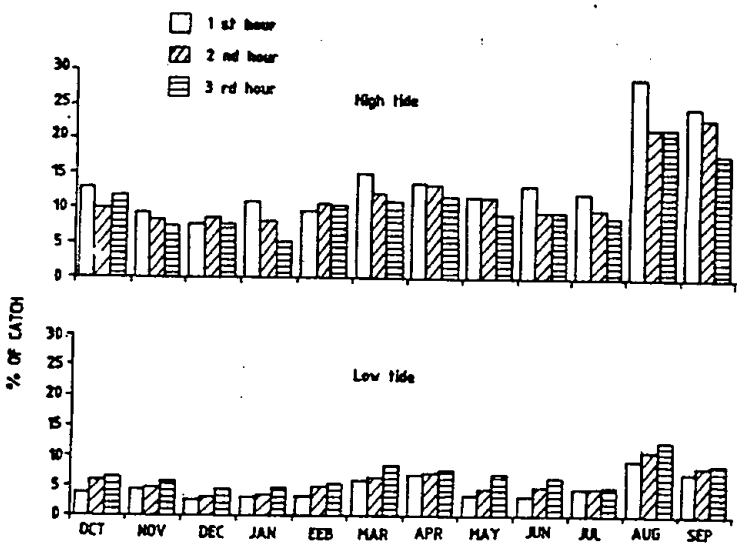


Fig.2. Hourly catch of *Chanos* fries.

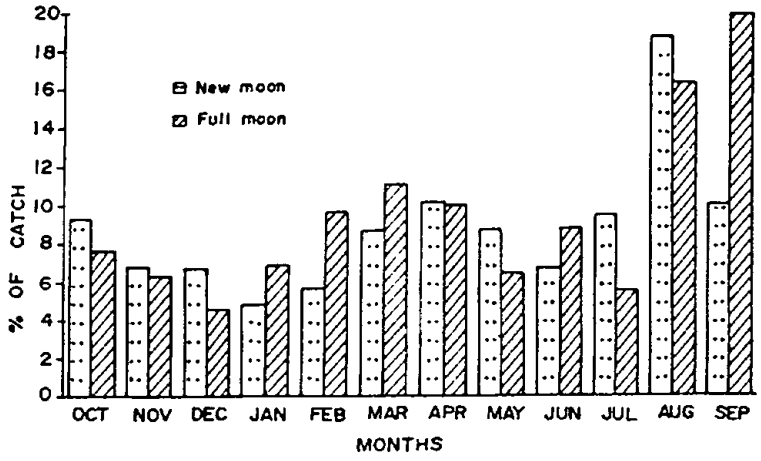


Fig.3. Lunar periodicity of the *Chanos* fries.

(1964) and Saha, Chakraborty, Jana, De, Misra, Pal and Talapatra (1964) reported the occurrence of the fry in Hooghly estuary from April to June with a peak in May. The present observations show the continuous occurrence of the *Chanos* fries in the estuary throughout the year with two peak periods, one in August which is more important than that of the April and indicate that individual fish in the population may spawn independently and it is in conformity with the postulation made by Rao (1970) and Saha, Chakraborty, Mahalanobish, Nag, Paul, Dey (1964) and Saha, Chakraborty, Jana, De, Misra, Pal and Talapatra (1964).

Observations on the lunar periodicity by Rao (1970) indicated that *Chanos* fries were more abundant during the new-moon period than during full-moon period from February to June and from July to October (except in September) reverse was the case. Their greater abundance during the new-moon period was also reported by Chacko and Mahadevan (1956). Basu and Pakrasi (1976) postulated from their observations that lunar periodicity had no effect on larval catch. The present observations show the greater abundance of *Chanos* fries during the full-moon period from January to June (except in April/May) and from July to December (except in September) reverse was the case.

Basu and Pakrasi (1976) observed that the first hour catch of milkfish from the onset of the high tide was maximum followed by the second hour catch but the third hour catch was insignificant. In the present observations the first hour catch was highest which decreased in the second and third hours gradually during the high tide (except in October, December and February) and the hourly catches of the fries were just the reverse during the low tide. This may be due to the velocity of the water during tidal inflow.

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