ON THE TROLL LINE INVESTIGATIONS OFF COCHIN DURING FIVE FISHING SEASONS Part II.* INVESTIGATIONS DURING 1963-64 SEASON

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During this season the investigations were mainly directed towards elucidation of the selective action of trolling lures. Feather jigs, baffalo horn jigs, stainless steel jigs, Japanese whale bone jigs and plastic jigs were selected. Operations were carried out from Fishtech No. 5 (30′ fishing boat).

RESULTS

Fig. 1 indicates the catch in numbers for different lures under study showing a superiority of white feathers in selection rate over the others.

The following table shows catch in different hours with a very sharp selection rate at 10.00 to 11.00 hrs.

TABLE I CATCH IN RELATION TO TIME

Time	Catch in %
08.00–09.00	2.3
09.00–10.00	8.65
10.00–11.00	37 44
11.00–12.00	26.20
12.00–13.00	15.00
13.00–14.00	1.52

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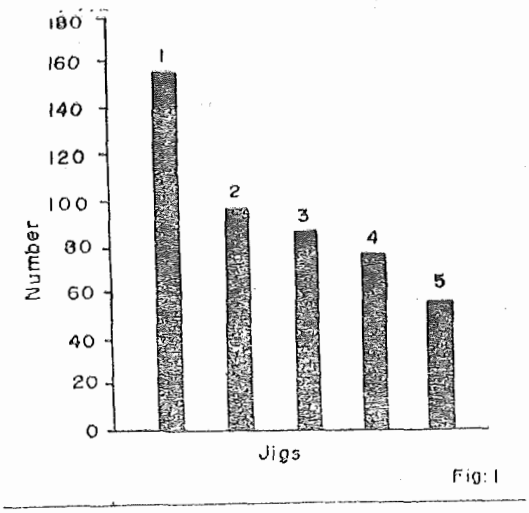

Fig. 1: Number of fish caught by different lures.
1. Feather jig
2. Buffalo horn jig
3. Stainless steel jig
4. Japanese whale bone jig
5. Plastic jig

From the table, it is found that 78.54% of the total catch was taken between 10.00 and 13.00 hours.

Table II shows an identical picture of selection rate of different jigs under study from 10.00 to 13.00 hrs. showing the superiority of stainless steel jigs.

TABLE II CATCH IN RELATION TO JIGS

Jigs	Catch in %
White feathers	76.78
Buffalo horn	73.78
Stainless steel	87.41
Japanese whale bone	75.65
Plastic	83.33

Figure 2 shows the selection rates of different lures in every hour from 08.00 to 15.00.

Figures in table III show that water temperature is one of the factors which determine the selection rate in the case of Indian seer and the optimum temperature lies between 29° to 30°C during which period 71.25% of the total catch was recorded. The time selection has direct bearing on the change of water temperature and hence the maximum selection point of 78.54% recorded between 10 and 13.00 hrs during which period the water temperature was between 29 to 30°C.

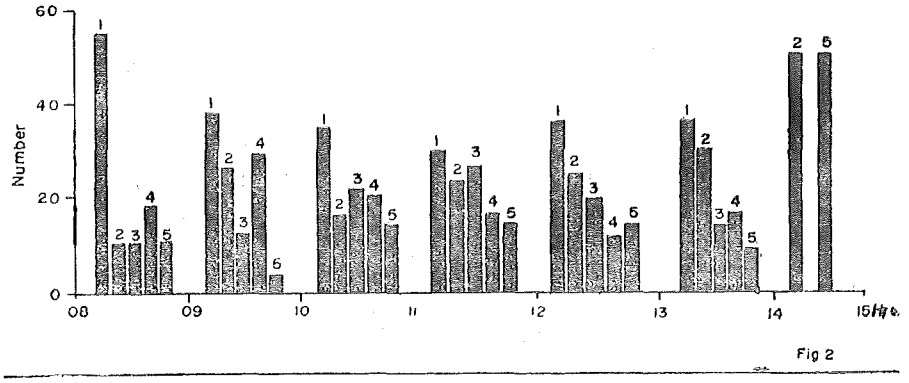

Fig. 2: Selection rate of different lures in different hours
1. Feather jig 2. Buffalo horn jig 3. Stainless steel jig
4. Japanese whale bone jig 5. Plastic jig.

Except 14.00 to 15.00 hrs., white feather was found to be most effective.

Figure 3 shows the percentage of fishes in different length groups taken by respective lures, with respect to total catch of the particular size group (40 to 60 cms; 60 to 80 cms and 80 to 110 cms) in length.

Catch at different temperatures.

TABLE III CATCH IN RELATION TO TEMPERATURE

Temperature °C	Catch %
27	8.60
28	12.85
29	39.20
30	32.25
31	6.80

TABLE IV CATCH IN RELATION TO TIME AND TEMPERATURE

Time	Temperature variation °C	Catch %
08.00–10.00	27–28	10.95
10.00–13.00	29–30	78.54
13.00–15.00	31 and above	10.81

Table IV gives the catch in relation to time and temperature of water. The selective capacity of white feather jig was well pronounced even at different hours of the day under study. At 08.00 to 09.00 hrs white feather jigs showed maximum selection level at 54.55% of the total catch recorded during the period. Buffalo horn jig, stainless steel, Japanese whale bone and plastic recorded respectively 9.09%, 18.18% and 9.09%.

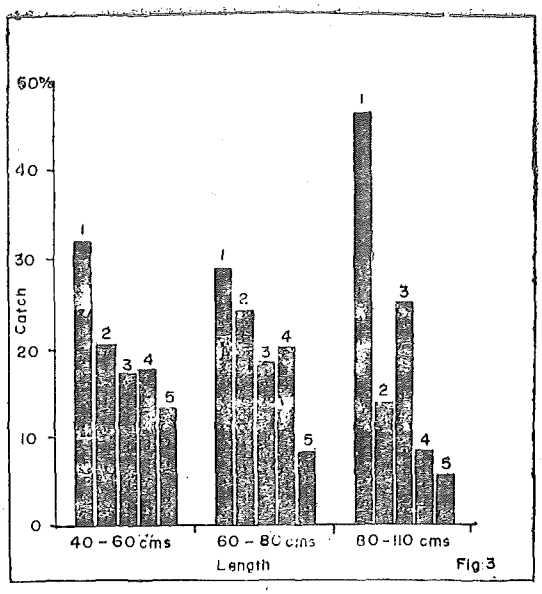

Fig. 3: Percentage of fish in different length groups taken by respective lures.

1. Feather jig 2. Bufflao horn jig 3. Stainless steel jig 4. Japanese whale bone jig 5. Plastic jig.

At 09.00 to 10.00 hrs 38.46% of the total catch of the period was recorded by white feather jig. Buffalo horn jig, stainless steel, Japanese whale bone and plastic recorded respectively 23.09, 10.25, 25.64 and 2.56% of the total catch during the period. At 10.00 to 11.00 hrs when the maximum selection level of 34.1% of the total catch of the period was recorded by white feather jigs, buffalo horn, stainless steel, Japanesc whale born and plastic jigs recorded 15.60, 20.80, 19.07 and 10.40% respectively. At 11.00 to 12 00 hrs white feather jig indicated a maximum selective point at 28.92% of the catch recorded during the period. Buffalo horn, stainless steel, Japanese whale bone and plastic jigs recorded 21.48, 22.31, 15. 70 and 11 57% respectively at this time.

At 12.00 to 13.00 hrs when 36.23% of the catch was taken by white feather jigs, buffalo horn, stainless steel, whale bone and plastic respectively recorded 23.18, 18.74, 10.14 and 11.59%. At 13.00 to 14.00 hrs white feather jigs recorded a maximum selection point at 34.88% of the total catch of the period. Buffalo horn, stainless steel, Japanese whale bone and plastic jig respectively showed selection of 27.90 13.93, 16.25 and 6.97 % of the total catch. At 14. 00 to 15.00 hrs when white feather jig, stainless steel and Japanese whale bone jig failed to show any selection buffalo horn jigs and plastic jigs shared 50% of the total catch recorded during the period.

Conclusion

From the materials collected the authors could arrive at the following conclusions:

White feather jig was the most effective, while buffalo horn, stainless steel, Japanese whale bone and plastic jigs follow in the order of selection. White feather jig was preferred by the fishes of all length groups except those of 80 to 110 cms where strinless steel showed its superiority over buffalo horn, whale bone and plastic. The most salient feature of selection was the time selection which could be attributed to the optimum water temperature (29 to 30°C).