in Rajapara Bay of Gujarat coast

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Rajapara is one of the most important dolnet fishing centres in Saurashtra region and the landing centre is a small semicircular bay without any major concrete berthing facilities (Fig. 1). Though, a well constructed jetty is not present in this centre, fishing boats of 10 -14 m size operate and small canoes are used to unload the catch. About 240 dolnet units are under operation, of which 120 are four netters, 90 are three netters and the rest are two netters. Duration of each operation lasts for 4 to 5 h. Depth range of fishing ground is 24 to 40 m and it takes 4-5 h to reach the fishing area.

Fig. 1. Semicircular bay type landing centre at Rajapara

There was heavy landing of around 28 t of the catfish *Arius dussumieri*, in 11 dolnet units with an average of 2,545 kg per dolnet at Rajapara landing centre on 23-3-2009 (Fig. 2). Weight of each fish varied between 3.6 and 5.2 kg with an average

Fig. 2. Heavy landing of catfish at Rajpara landing centre on 23-3-2009

weight of 4.65 kg (Fig. 3). Length frequency analysis showed a single dominant size group with the mode at 70-74 cm and the range between 56-92 cm.

Fig. 3. Weighing of *Arius dussumieri* in temporary sheds at the landing centre

Females were found to be dominant in the population. The gonadal studies indicated that 42% of the females were in the advanced ripe condition, 17% were mature and 8% were in the maturing stage (Fig. 4).

Fig. 4. Mature gonads of female *A. dussumieri*

Observations made in the nearby landing centre of Nawabunder by Fishery Resources and Assessment Division of CMFRI had also reflected the same trend. Totally 108 dolnet units were deployed and the total catfish catch was estimated as 74.9 t. The trawlnets operated in Veraval, Mangrol, Porbunder and Okha have also shown a similar trend during the previous two months. Based on local enquiry, it was found that comparatively higher catch was observed during this year than the previous years.

The gut content analysis showed that majority of the fishes fed on *Acetes* which was predominant in the guts of all fishes observed. Second important food item was *Coilia dussumieri* which was found in 50% of the fishes. The other important food items were *Chirocentrus dorab*, seerfish, carangids, ribbonfish, non-penaeid prawns and other unidentifiable digested matter (Fig. 5).

Fish unloaded by small canoes at Rajpara Landing Centre were carried in vehicles or as head load by fisherwomen to the nearest fish processing sheds for further processing. After weighing, the fishes were cut open to remove the airbladders and the gonads. The ovary and airbladder were kept separately in different tubs. The egg mass of each fish was sold in the local market at the rate of Rs. 40/-. The airbladders were kept in plastic tubs and chemical was added to remove the blood stain

Fig. 5. Major food items encountered in the gut of *A. dussumieri*

and other impurities (Fig. 6). The airbladder thus cleaned was sold to the middlemen from Nawabunder. Further processing was carried out at Nawabunder and it was exported to China for making isinglass.

Fig. 6. Chemically treated airbladders of *A. dussumieri*

Soon after removing the gut, the fish were arranged in plastic tubs with ice and was sold to the buyers from Nawabunder at the rate of Rs. 25-30/- per kg. It was further processed in Nawabunder fish curing yards. The catfishes were beheaded and cut longitudinally into two halves and then washed thoroughly in brine solution. The fishes were arranged in layers one above the other, with salt in between them to a height of 1 to 1.5 m (Fig. 7) and were allowed to remain for 4 days. On the fifth day, they were removed, brushed to remove the excess salt if any and soaked again in brine solution. The fishes were then sun dried for a period of 3 days in multi-tier system of wooden platforms specially made

Fig. 7. Salt curing of catfishes

for this purpose (Fig. 8). After proper drying, the fishes were removed and kept in a separate shed where they were packed and sent for export mainly to Sri Lanka (Fig. 9).

Spawning migrations of *Arius thalassinus* and *Arius tenuispinis* towards shallow waters of less than 10 m depth have been reported during the south-west monsoon from the west coast. Considering the fact that majority of the female specimens analysed were in the advanced stage of gonadal maturity, it appears that *A. dussumieri* also would have migrated towards shallow waters of the Gujarat coast during February-March.

Fig. 8. Multi-tier system of wooden platforms specially made for sun drying of catfishes

Fig. 9. Dried catfishes ready for export