



समुद्री मात्स्यकी सूचना सेवा

MARINE FISHERIES INFORMATION SERVICE

No. 127

FEBRUARY - MARCH 1994



तकनीकी एवं TECHNICAL AND
विस्तार अंकावली EXTENSION SERIES

केन्द्रीय समुद्री मात्स्यकी CENTRAL MARINE FISHERIES
अनुसंधान संस्थान RESEARCH INSTITUTE
कोचिन, भारत COCHIN, INDIA

भारतीय कृषि अनुसंधान परिषद
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

**OBSERVATIONS ON THE GRAZING PHENOMENON OF
THE CULTURED SEAWEED, GRACILARIA EDULIS
BY FISH IN MINICOY LAGOON (LAKSHADWEEP)**

The seaweed *Gracilaria edulis* is a fast growing agarophyte and its distribution is confined to Tamil Nadu, Andaman-Nicobar islands, Lakshadweep group of islands and Chilka lake along the Indian Coast. In Lakshadweep, it has been reported growing abundantly in the islands of Agatti, Kavaratti, Kalpeni and Kadamath while in Minicoy it was totally absent till recently. In 1990 this seaweed was transported from Mandapam (Gulf of Mannar) and Kavaratti islands (Lakshadweep) to study the feasibility of its establishment and colonizing in the lagoon in Minicoy. As is well known this seaweed is much sought after as an industrial raw material for the extraction of the phyto-chemical, agar-agar which is of wide industrial use.

The initial culture experiments by net and rope methods had shown encouraging results and as time passed by, a certain amount of grazing by fish was observed in the culture nets and ropes causing considerable damage to the

seed material or growing fragments or some times to the fully grown seaweed. But during one of the field trials in 1992, a record production of 31 fold increase over the initial seed material was noticed in one of the ropes which had escaped grazing by fish, while most of the ropes introduced along with that were grazed down completely except for one more rope which had grown to harvestable size in November 1992 yielding an 18.65 fold enhancement over the seed material introduced initially.

These experiments were continued in 1993 also with a view to confirm the above trend consistently in the subsequent years. But these culture operations had a set back because of heavy grazing of the seed material within a few hours of introduction by different types of fishes.

So as to get a convincing proof that these fishes were actually feeding on the seaweed; cast net and set gill net operations were carried out

Prepared by : V. S. K. Chennubhotla, A. K. V. Nasser, V. A. Kunhikoya, A. Anasukoya, Research Centre of CMFRI, Minicoy (Lakshadweep) and M. S. Rajagopal, CMFRI, Cochin - 682 014.

in the seaweed culture sites to capture the fishes that hover around the culture sites. The gut contents of these fishes were analysed for

qualitative analysis of food items and the details are given in table.

TABLE 1. Fishes caught from the seaweed culture sites in the Mnticoy lagoon by cast net and get gill net and their gut contents

Fish species		No. of fish Examined	Length range (cm)	Gut contents
1	2	3	4	5
1.	<i>Abudefduf septemfasciatus</i>	6	9.5-14.2	<i>Chaetomorpha</i> sp., <i>Enteromorpha</i> sp., <i>Polysiphonia</i> sp., <i>Centroceras</i> sp., <i>Gracilaria edulis</i> , zooplankton, calcareous algae
2.	<i>Acanthurus</i> sp.	2	9.3-11.3	Filamentous algae, zooplankton, plant material
3.	<i>A. triostegus</i>	7	7.3-11.2	<i>Enteromorpha</i> sp., <i>Centroceras</i> sp., <i>Sarconema</i> sp., <i>Gracilaria edulis</i> , <i>Dictyota</i> sp., filamentous algae, other brown algae
4.	<i>A. lineatus</i>	2	14.5-16.5	<i>Dictyota</i> sp., <i>Gracilaria edulis</i>
5.	<i>Caranx</i> sp.	3	9.9-13.8	Fish remains, filamentous plant material
6.	<i>Chaetodon auriga</i>	6	12.2-14.5	Worms, calcareous pieces, zooplankton
7.	<i>Epinephelus tauvina</i>	1		Zooplankton, fish remains
8.	<i>Gerres lucidus</i>	11	11.2-16.5	<i>Chaetomorpha</i> sp., <i>Cladophora</i> sp., <i>Gracilaria edulis</i> , <i>Enteromorpha</i> sp., fish remains, zooplankton
9.	<i>Hyporhamphus</i> sp.	1		Fish remains, filamentous plant material
10.	<i>Kyphosus vaigiensis</i>	2	19.6-31.3	Seagrasses, <i>Gracilaria edulis</i> , <i>Dictyota</i> sp., <i>Enteromorpha</i> sp., other algae
11.	<i>Leptoscarus vaigiensis</i>	5	14.3-15.5	Seagrasses
12.	<i>Lethrinus harak</i>	21	11.0-16.4	Fish remains, shrimps, crabs, filamentous green algae, brown and red algae
13.	<i>L. mahsena</i>	2	9.5-14.5	<i>Chaetomorpha</i> sp., <i>Gracilaria edulis</i> , green and brown algae, seagrasses, zooplankton
14.	<i>Liza</i> sp.	1		Sand particles
15.	<i>Lutjanus gibbus</i>	1		Zooplankton
16.	<i>L. kasmira</i>	8	7.2-14.1	Shrimps, <i>Cladophora</i> sp. crabs, polychaete worms, fish remains
17.	<i>Myripristis murdjan</i>	1		Semidigested matter
18.	Other parrot fishes	13	11.2-16.8	Seagrasses, fish remains, crab
19.	<i>Paraupeneus indicus</i>	2	11.6-13.7	Crabs, gammarids, copepods, fish remains
20.	<i>Polynemus sexfilis</i>	8	12.9-16.5	Fish remains, seagrasses <i>Gracilaria edulis</i> , shrimps, zooplankton
21.	<i>Stethojulis trilineata</i>	1		Semidigested matter
22.	<i>Therapon jarbua</i>	1		Crabs, <i>Enteromorpha</i> sp.