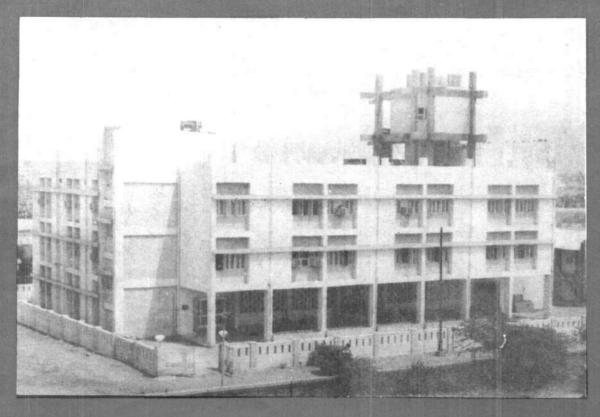


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केन्द्रीय समुद्री मात्स्यिकी CENTRAL MARINE FISHERIES अनुसंधान संस्थान RESEARCH INSTITUTE कोचिन, भारत COCHIN, INDIA

> 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 exraction 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 incerease 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

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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 Minicoy 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.	Abudefduf septemfasciatus	. 6	9.5-14.2	Chaetomorpha sp., Enteromorpha sp., Polysyphonia sp., Centroceras sp., Gracilaria edulis, zooplankton, calcareous algae
2.	Acanthurus sp.	2	9.3-11.3	Filamentous algae, zooplankton, plan material
3.	A. triostegus	7	7.3-11.2	Enteromorpha sp., Centroceras sp., Sarconema sp., Gracilaria edulis, Dictyota sp., filamentous algae, other brown algae
4.	A. lineatus	2	14.5-16.5	Dictyota sp., Gracilaria edulis
5.	Caranx sp.	3	9.9-13.8	Fish remains, filamentous plant materia
6.	Chaetodon auriga	6	12.2-14.5	Worms, calcareous pieces, zooplankton
7.	Epinephelus tauvina	1		Zooplankton, fish remains
8.	Gerres lucidus	11	11.2-16.5	Chaetomorpha sp., Cladophora sp., Gracilaria edulis, Enteromorpha sp., fish remains, zooplankton
9.	Hyporhamphus sp.	1		Fish remains, filamentous plant material
10.	Kyphosus valgiensis	2	19.6-31.3	Seagrasses, Gracilaria edulis, Dictyot sp., Enteromorpha sp., other algae
11.	Leptoscarus valgiensis	5	14.3-15.5	Seagrasses
12.	Lethrinus harak	21	11.0-16.4	Fish remains, shrimps, crabs, filamentou green algae, brown and red algae
13.	L. mahsena	2	9.5-14.5	Chaetomorpha sp., Gracilaria edulis, green and brown algae, seagrasses, zooplankton
14.	Liza sp.	1		Sand particles
15.	Lutianus gibbus	1		Zooplankton
16.	L. kasmira	8	7.2-14.1	Shrimps, Cladophora sp. crabs, polychae worms, fish remains
17.	Myripristis murdjan	1		Semidigested matter
18.	Other parrot fishes	13	11.2-16.8	Seagrasses, fish remains, crab
19.	Paraupeneus indicus	2	11.6-13.7	Crabs, gammarids, copepods, fish remains
2 0.	Polynemus sexfilis	8	12.9-16.5	Fish remains, seagrasses <i>Gracilaria edul</i> shrimps, zooplankton
21.	Stethojulis trilineata	1		Semidigested matter
22.	Therapon jarbua	1		Crabs, Enteromorpha sp.