

AN ASSESSMENT STUDY ON THE SEA VEGETABLE POTENTIALS IN PANAY ISLAND WITH EMPHASIS ON *CAULERPA PELTATA* VAR. *MACRODISCA*

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Introduction

This paper contains a brief resume of some major results of an on-going study designed to assess the sea vegetable potentials of Panay Island with special treatment on *Caulerpa peltata* var. *macrodisca*.

The increasing need to utilize algae for human consumption or industrial purposes constitutes the bare justification for a concentration of efforts on surveys of resources and in particular, the productivity and quantitative assessment of the standing crop.

To date there has been no attempt to assess the seaweed potential in the Philippines. There is a dearth of reports along this line to be used as base-line data for future plans to assess the quantity of seaweeds specifically sea vegetables — important marine resource found in Philippine waters. There are major steps in realizing a seaweed potential in the Philippines such as:

- 1) To identify the kinds, abundance, and commercial values;
- 2) To introduce production, with sustained support by government and private sectors;
- 3) To utilize wild crops and to eventually farm certain commercial species and to sell the product with good profit for all; and
- 4) To assure a satisfactory life style to the farmer producers, whose product should continue to be valuable to the end users.

The desire to implement these steps has been the aim of an on-going project financed by the National Research Council of the Philippines. The present project, opted to limit the scope of work as to assess the sea vegetable potentials of Panay Island, Central Philippines.

Methodology

Started in 1982, the NRCP project research team launched a series of surveys and sampling collections conducted in the four member-provinces of Panay Island namely, Aklan, Antique, Capiz and Iloilo. Data gathered show the presence of

several edible species of green, brown and red seaweeds otherwise known as sea vegetables. Ironically, most of these species are unknown as human food to the inhabitants in contrast to their popularity and acceptability as food by the Ilokans. Of these, the more noteworthy and popular to the island's inhabitants is *Caulerpa peltata* var. *macrodisca*, a green alga locally known as "laba-laba" (Ilongo/Hiligaynon) or "Eaba-eaba" (Aklanon).

One of the objectives of the project is to culture *C. peltata* var. *macrodisca* in experimental pond – a step towards possible mass production later.

C. peltata var. *macrodisca* used to abound, harvested and marketed locally from the Tinagong Dagat, New Washington, Aklan. This sea vegetable, however, disappeared mysteriously from the area in the late sixties. The people of New Washington attribute the disappearance of "laba-laba" to the wanton use of synthetic chemicals to exterminate weeds and predators from bangus and sugpo fish ponds. The disappearance coincided with the proliferation of the fishponds along the periphery of Tinagong Dagat in the sixties.

The present supply of "laba-laba" offered for sale in the market comes from Iloilo. The specific area or habitat of the sea vegetable was later traced to be the municipal waters of Estancia, following a series of snorkelling and scuba-diving in the island.

Morphological and Ecological Notes

Morphologically, *C. peltata* var. *macrodisca* is composed of prostrate creeping rhizome-like portion from which small rhizoidal structure arise on the lower side and erect branches of complex and variable form arise from the upper side. These branches bear peltata or disc-shaped branchlets/ramuli 10-12-15-mm in diameter, irregularly alternate, rarely whorled.

Wild growths of "laba-laba" in Estancia are found at depths ranging from the intertidal to 10 meters in areas of low salinity (brackish or estuarine), low pH and moderate water movement. Populations found intertidally show that reproductive structures are prominent during most part of the year, excepting the summer months from March to early June. In summer, pH, salinity and surface water temperature are relatively high and these prove to be deterrents to the plant growth. Mechanical breakage or injuries inflicted during harvest time cause death on that part of the plant. However, new shoots originating from the stolen show no marked seasonal periodicity. Large and thick growths of *C. peltata* var. *macrodisca* are noticeable during the cooler months from August until January of the following year.

Observations on wild *C. peltata* var. *macrodisca* in Estancia, Iloilo suggest that growth rates vary with season. Pulling or pruning, two common practices of harvesting labalaba, deprives the plant from regenerating any re-growth. Juvenile recruitment from asexually produced reproductive bodies was primarily within the one meter radius of the parent plant arranged irregularly.

Mari-Culture of *C. Peltata* Var. *Macrodisca*

Few edible species under genus *Caulerpa* reaching the Manila markets come from Pangasinan and Cebu provinces. Of the two sources, Cebu appears able to supply *Caulerpa*, mostly *C. lentillifera*, rather regularly. The source of the *Caulerpa* comes from the culture ponds in Mactan Island. However, said supply of *Caulerpa* from Cebu will be greatly affected because the culture ponds are on the verge of being demolished. The Export Processing Zone Authority (EPZA) based in Mactan Island has programmed to establish an industrial complex that will eat up parcels of *Caulerpa* culture ponds in the Island.

Full implementation of the EPZA plan is anticipated to produce two adverse effects. Firstly, it will mark an end to the supply of *Caulerpa*; and secondly, it will cause socio-economic dislocation among the sea vegetable farmers dependent on *Caulerpa* for their daily sustenance. With the bleak picture of this important sea vegetable it was necessary to fish for possible remedies.

Projections

This situation paved the way to the timely implementation of the present NRCP financed project. The project is designed to survey, explore and inventory areas positive to *Caulerpa* and other sea vegetables. One area thought of was Panay Island found rich in sea vegetables. Of the species collected, *C. peltata* var. *macrodisca* was chosen to be test cultured. The plan is to transport stocks of wild *C. peltata* var. *macrodisca* to the experimental pond constructed in the vicinity of the National Museum Bio-Research Station (NMBRS) located at the coastal Barangay of Jawili, Tangalan, Aklan. Ecological parameters such as pH, salinity, water temperature will be monitored daily.

The success of the experimental *Caulerpa* culture is expected to produce the following impacts:

- (1) Re-introduction of *Caulerpa peltata* var. *macrodisca* to Tinagong Dagat, New Washington.
- (2) Transfer of culture technology to the local farmers.
- (3) Involvement of the local government by converting the project into another source of livelihood for the masses.
- (4) Mass-production of *C. peltata* var. *macrodisca* and selling the product to consumers in Manila and other cities. This should augment the production and supply of *Caulerpa* coming from Mactan Island.

Magdalena C. Cantoria, Discussant

Sea vegetables are popular as food among the Ilocanos and it is surprising to learn that many of these plants are unknown in other parts of the country, even to people living near the sea.

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Within the last two decades or so, some of these sea vegetables which were unknown previously in Manila markets became available. Prior to that time, only gulaman dagat from Manila Bay was what was sold. With improved transportation facilities, it became possible to find such sea vegetables like *Caulerpa* and *Codium* in the Greater Manila area and even non-Ilocanos became familiar with “ar-arospip” and “pu-pulo”. Dr. Cordero tells us that the caulerpa found in Manila markets comes from Pangasinan and Cebu.

“Laba-laba” or “eaba-eaba”, which Dr. Cordero has chosen as test plant, must be a delicacy to have become popular in Panay, where sea vegetables are little appreciated as food for man. It must be popular enough to warrant its being harvested in and marketed from Tinagong Dagat, New Washington, Aklan. With the disappearance of the plant from this area in the late sixties, the supply of this sea vegetable now comes from Iloilo. This means that there is still a local demand for the plant, sufficient enough to make it worthwhile to investigate the possibility of its being cultivated.

Should the project of Dr. Cordero yield the expected outputs, it will be possible to grow laba-laba on a commercial scale in the Aklan region to meet local demands in that region and to augment the supply in the Manila market.

It appears that once the indigenous culture technology is known and firmly established on the basis of the research findings of Dr. Cordero, it will be possible to present the cultivation of laba-laba as a KKK project in Aklan. The project can be utilized for rural development, with proper government support and supervision. A future research program will be directed toward the development of an improved technology which will also include other sea vegetables so that, hopefully, the Philippines may enter the international market.

The conversion of long-established food-producing areas to industrial complexes is a common occurrence in modern society and this change can not be averted. That the caulerpa culture ponds in Mactan Island in Cebu will be sacrificed for the expansion of the Export Processing Zone Authority will probably redound to the ultimate advantage of the country in terms of helping our economy. Our leaders foresee an increase in export products and an increase in job opportunities for people in the area. To us biologists, the picture is indeed bleak. We foresee

pollution of the bodies of water around the area, including the existing caulerpa ponds, and the destructive effects on marine life in the vicinity. Our role is being defined in a way for us by Dr. Cordero and this is to find means to grow these endangered marine species in some other localities if we cannot protect them in their present natural habitat. Dr. Cordero is to be commended for doing his part and devoting his expertise to the conservation and development of our sea vegetables, one of our valuable marine resources.