

# Seaweed R&D Program of MMSU School of Fisheries

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Topographically, Ilocos Norte is rugged and rocky with majority of the lands used for agriculture with a total land area of 339,934 ha. It has coastal towns where seaweeds abound both in the intertidal and subtidal zones. Seaweed gathering of natural stocks has been an alternative source of income among coastal populace. Some of the seaweeds are gathered for food but the bulk are washed away to the shoreline during stormy days.

The earliest report on marine algae found in Ilocos Norte was made by Gilbert(1943). However, agarophytes were not included despite their significance in the diet as claimed by the Ilocanos. Sulit et al. (1952) attempted to extract agar from *Gracilaria* and *Hypnea*, and carrageenan from *Eucheuma* as well as alginic acid from *Sargassum* and *Turbinaria* species of the Ilocos Region. The same paper mentioned five seaweed species eaten directly including *Porphyra*.

In 1953, Montilla and Blanco prepared a list of 25 species of common seaweeds, including 7 green, 2 brown algae and 6 red algae. Galutira and Velasquez (1963) identified 19 species of edible seaweeds in Ilocos Norte with notes on their food preparations. Cordero's (1976) report on the red algae of the Philippines included several species of red algae in the Ilocos Region such as *Porphyra*, *Gelidiella*, etc. In 1983, Agngarayngay reported 15 species of agarophytes in Ilocos Norte, Hurtado-Ponce (1983) listed 35 species of edible seaweeds of Currimaos, Ilocos Norte in which 14 are agarophytes, and Tungpalan (1987) described 8 agarophyte species. Trono and Ganzon-Fortes (1985) reported 17 species of agar-bearing seaweeds.

An inventory/assessment and utilization of agarophytes of Ilocos Norte was done by Ragasa et al. (1995) which reported seasonal variations on the biomass, agar content and quality of agar produced from five (5) dominant agar-bearing species of red algae. Seasonal variations on the biomass of *Sargassum* species in Currimaos, Ilocos Norte was done by Hurtado and Ragasa (1999). Other studies were conducted by students and researchers of the Mariano Marcos State University in collaboration with cooperating agencies like the Philippine Council for Aquatic and Marine Research and Development, UP Marine Science Institute, DA-BAR and DOST-ITDI. Screening of novel sources of carrageenan from other species of red algae is being done. The results of these researches now serve as the baseline for the development and maximum utilization of the seaweed and are now being utilized by researchers, technologists and businessmen.

### On Going Projects

- Characterization of carrageenan from selected Philippine red algae and its interaction with food systems, MMSU-DA-BAR Project.
- Assessment of *Porphyra* industry of Ilocos Norte, MMSU Project.
- Culture of economically important seaweeds, Province of Ilocos Norte & MMSU.

### Future Projects Awaiting Collaboration

- Improvement of drying method of *Porphyra* with emphasis on mineral content degradation.
- Tissue culture studies on *Porphyra*, *Eucheuma gelatinae*, *E. arnoldii* and *Halymenia* species.
- Nutritional evaluation of *Porphyra* and other edible seaweed species.

### R & D Strengths

- Diversified seaweed growth both in the intertidal and subtidal zones.
- Presence of staff/players doing R&D activities.
- R&D needs
- Globally competitive cost structures on post harvest marketing and distribution system.
- Collaborators to complement the present structure and technical expertise.

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