

SOME SEAWEEDS CONSUMED FRESH IN THE PHILIPPINES¹

By S. V. BERSAMIN, S. V. LARON, F. R. GONZALES
and R. B. BANANIA
Of the Philippine Fisheries Commission

ABSTRACT

Utilization of Seaweeds directly as human food is well-known in the Philippines. Among the species commonly used as food are *Acanthopora*, *Cladophora*, *Codium*, *Gracilaria*, *Hydroclathrus*, *Laurencia*, *Porphyra* and *Sargassum*. The seaweeds are used raw or blanched mostly as salad vegetable.

INTRODUCTION

Like other Asians—the Japanese, Malaysians and Chinese—the Filipinos, especially those from the coastal towns of the Philippines, are eaters of seaweeds. It is not uncommon for coastal inhabitants to be seen on the seashore during low tide collecting “vegetables of the sea”, as one writer puts it.

It can be conjectured that the Ilocanos of Northern Philippines who are leading consumers of seaweeds spread the idea of seaweed-eating among the Pampangueños and Tagalogs of Central and Southern Luzon. Migrating Ilocanos to the coastal towns of Mindanao have also influenced the people of the locality to eat fresh seaweeds. The Bicolanos and Visayans of Central Philippines are also known to be consumers of fresh seaweeds.

Seaweeds are utilized by the Filipinos as food, medicinals and chemicals or fertilizers. Seaweeds are usually gathered, dried and transported from the coastal towns to Manila where they are processed into various forms as food or desserts especially the *Gracilaria* sp., chemicals-alginate products (*Sargassum* sp.) or medicinals and fertilizers (*Digena simplex*, etc.). Popularly known to have potential economic values are seaweeds belonging to the genera *Porphyra*, *Gracilaria*, *Hypnea*, *Gelidium* and *Codium*.

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There is an undertermined quantity of seaweeds gathered and consumed directly as human food in the Philippines. It is commonly known that in markets of coastal towns—seaweeds are sold in the fresh state and prepared as salads or added to fish or fish preparations. Fresh seaweeds are generally rare in the markets of inland towns because of inadequate handling facilities.

There are twelve species of seaweeds presented in this paper which are known to be relished by the Filipinos since time immemorial. These are gathered in considerable quantities and sold and consumed in the fresh state.

The number of Philippine species not yet fully evaluated is no doubt still numerous. According to Dr. G. Velasquez (1953) "in the Philippines, the enormous amount of seaweeds existing along its coasts has not been fully evaluated, except in certain industries derived from them since early times. According to an opportunity to secure records of the geographical distribution of the local seaweeds and to facilitate their first hand identification is most timely". Only a complete taxonomic and comprehensive report on the economic values of fresh seaweeds will pave the way for the proper exploitation and utilization of their resources.

The species alphabetically listed herein are reported with emphasis on their taxonomic and ecological values. The scope of the general description is centered on their utilization in the fresh state. Whenever possible, chemical analysis, market price and distribution of seaweeds are included in the survey. Housewives were directly consulted regarding the methods of preparing fresh seaweeds for the table.

The writers hope that this paper will motivate or stimulate the arrested development of continuing researches on the economic values of seaweeds that thrive abundantly in Philippine waters.

ACANTHOPORA SPICIFERA (VAHL) BOERGESSEN VAR. ORIENTALIS J. G. AGARDH

Vernacular—"Culot"

Literature—Collado in Phil. Agri. 15 (1926) 129.

General distribution: Found in Cagayan Province, Zamboanga, Hundred Islands, Lingayen Gulf; usually collected along the reefs and shore during low tide; abundant during June to October; gathered by hands; sold in the market in fresh form at 25 centavos per kilo.

Preparation for the table: Fresh seaweeds are washed to remove fresh water-stones, sands, etc. Boiling water is then poured into the cleaned seaweeds and drained after one minute. Then chopped tomatoes, onions, ginger and patis (fermented fish sauce) are added to the seaweed. Vinegar or calamansi is sometimes used instead of tomatoes.

AULERPA RACEMOSA (FORSKAL) WEBER—VAN BOSSE

Vernacular: "Lato" (Visayan region)

Literature: Velasquez in 1st Int. Seaweed Symp (1953) 100

General distribution: Found in Cebu, Catbalogan, Bicol, Zamboanga, Sulu, Pangasinan-cosmopolitan; collected along seashore and reefs during low tide; abundant from January to March; gathered by hands. Sold immediately after collection, otherwise, it will shrink and lose its quality. Market price 50 centavos per ganta.

Use: Eaten as a salad.

Preparation for the table: Seaweeds are cleaned of sand, debris and stones attached, then washed in fresh water. Chopped tomatoes and onions are added. Salt is also added to taste.

AULERPA RACEMOSA VAR. UVIFERA (TURNER) WEBER—VAN BOSSE

Vernacular: "Ar-arusip"

Literature: Collado in Phil. Agri. 15 (1926) 129.

General distribution: Found in Cagayan, Ilocos Provinces, Lucap Bay, Hundred Islands, and in the Coastal regions of Mindanao. Collected along reefs and seashore during low tide; abundant during January to March; gathered by hand-picking. Sold in the fresh state—never sold in the dried form, for fifty centavos per ganta.

Use: Eaten as a salad.

Preparation for the table: Same as "Lato".

AULERPA SERRULATA (FORSKAL) J. AGARDH

Vernacular: "Galgalgac"

Literature: Collado in Phil. Agri. 15 (1926) 129.

General distribution: Found in Cagayan, Lucap Bay, Hundred Islands and coastal regions of Mindanao; collected along reefs and seashore—in the intertidal zones; abundant during May to August; gathered by hand-picking; sold only in fresh forms at 25 to 40 centavos per kilo. This species cannot be gathered in commercial quantities because of hazards in gathering them.

Use: Eaten as a salad.

Preparation for the table: Fresh seaweeds are washed to remove fresh water-stones, sands, etc. Boiling water is then poured into the

cleared seaweed and drained after one minute. Then chopped matoes, onions, ginger and patis (fermented fish sauce) are added to the seaweed. Vinegar or calamansi can be used instead of tomatoes.

CAULERPA SERTULARIODES (GMELIN) HOVE

Vernacular: "Salsalamagui".

Literature: Collado in Phil. Agri. 15 (1926) 129.

General Distribution: The same as the *racemosa* and *wifera* species.

Preparation for the table: Same as the *racemosa* and *wifera* species.

Use: Eaten as a salad.

CODIUM MUELLERI KUETZING

Vernacular: "Pokpoklo" (Ilocos provinces) "sinling sinling" (Luzon, Cebu, Bohol).

Literature: Collado in Phil. Agri. 15 (1926) 129.

General distribution: Found in Cagayan and Ilocos provinces, Lingayen Gulf, Leyte, Cebu, Bohol and parts of Central Luzon; collected along reefs and seashore during low tide; abundant during December to March; gathered by hand-picking; sold in baskets covered by wet sacks (otherwise seaweeds shrink when exposed) at 10 centavos per ganta. This species can be commercialized only in season usually bartered with rice by the collectors. This species cannot be sold in dried form.

Use: Eaten as a salad.

Preparation for the table: Same as ar-arusip; can be prepared without tomatoes.

GRACILARIA CONFEROIDES (LINNAEUS) GREVILLE

Vernacular: "gulaman", "guraman", "gulaman-dagat".

Literature: Blanco in Fl. Filip. (1937) 839; ed. 2 (1945), 580; ed. 3 (1897) 290 (sub. non *Fucus edulis*).—Sulit *et al.* Chemical Studies and Utilization of Some Philippine Seaweeds IPFC Proceedings Series II, 4th Meeting, Phil. (1952) 165-170. Wells in Phil. Jour. Agri. 11 (1917) 267 (sub. nom. *gulaman-dagat*). Wester, DANR Phil. Bull. 39 (1924) 21.—Velasquez in 1st Int. Seaw. Symp. (1953)

General distribution: Found in Manila Bay, Zamboanga, Sulu and Cagayan; abundant from January to June; in Manila Bay, these seaweeds are gathered by using "kalaykay" (rake) in areas from the surface to a water depth of one to one-half meters.

Fresh gulaman-dagat is sold as human food at 10 centavos to 15 centavos per "tumpok" or pile (800 grams to one kilo).

Although eaten, gulaman-dagat is generally used as food of fish (bañgos, *Chanos-chanos*) and utilized as an agar-agar source.

Gracilaria confervoides is being commercialized as food in the Philippines in the processed form and only a minimum quantity is consumed as fresh.

Use: Eaten as a salad.

Method of preparation: Fresh gulaman-dagat are washed free of dirt, sand and salt water. Then tomatoes, onions, ginger and salt is added to the raw or blanched seaweed.

GRACILARIA EUCHEUMOIDES HARVEY

Vernacular: "kawat-kawat"

Literature: Scale in Phil. Jour. Sci. D, 6 (1911).—Western in DANR Phil. Bull. 39 (1924) 21.

General distribution: Found in Lingayen Gulf and La Union; abundant from January to June; usually gathered by "kalaykay" (rake) at depths of one to two meters.

Use: Eaten as salad or added to fish preparations as vegetable.

Preparation for the table: As salad; seaweeds cleaned, blanched and tomatoes, onions, ginger and salt (to taste) added.

Use as vegetable: Seaweeds cleaned, then added to fish preparation recipes having soup.

HYDROCLATHRUS CLATHRATUS (BORY DE SAUNDE) AGARDH

Vernacular: "Balbalulang"

Literature: Blanco in Fl. Filip., ed. 1 (1837); ed. 2 (1945) 582; ed. 3 (1879) 262 (Sub. nom. *Ulva reticulata*).—Collado in Phil. Agri. 15 (1926). 129 (Sub. nom.) *Hydroclathrus cancellatus*—Velasquez in 1st Int. Seaweeds Symposium (1953) 100.

General distribution: Found in the Ilocos region, Cagayan and Pangasinan province; abundant during March to June; collected in sandy shores, bays and estuarine waters; usually gathered by hands in the margin of shores; sold in fresh form at 20 to 30 centavos per ganta.

Use: Eaten as a salad.

Preparation for the table: Seaweeds are washed thoroughly, then tomatoes, ginger and patis added. Ready to serve.

LAURENCIA PAPILLOSA (FORSKAL) GREVILLE

Vernacular: "tartarriptip"

Literature: Miller *et al.* in Hawaii Agri. Exp. St. Bull. 98 (1946) 47, f. 14.2.

General distribution: Found in Cagayan, Zamboanga and Lingayen Gulf, abundant during June to October; collected during low tide; gathered by hand-picking found attached to rocks. Sold in fresh form at 25 to 30 centavos per kilo.

Use: Eaten as a salad.

Preparation for the table: Washed thoroughly and mashed tomatoes and
Ready to serve.

PORPHYRA SP.

Vernacular: "gamet"

Literature: Miller in Hawaii Agri. Exp. St., Bull 98 (1946) Sulit
IPFC Proceedings Section II, 4th Meeting, Quezon City, Phil.
165-170.

General distribution: Found in Cagayan and Ilocos provinces, abundant
from January to April; collected attached on cliffs and rocks along
the shores affected by tides—never found in sandy shores, gathered
by hand-picking.

Gamet is usually cultivated by setting twigs tied in bamboo poles
stocked along shores at depths of 1-3 fathoms.

Twigs serve as anchor of gamet spores.

Use: Eaten as a salad.

Preparation for the table: Washed thoroughly, then add tomatoes, ginger
and salt. Ready to serve.

They are also pressed into thin sheets and dried. In this form
in sheets to rectangular, square or circular shapes.

When used for the table, the drier sheets are soaked in hot water
washed and drained thoroughly after which tomatoes, ginger and
salt are added. Ready to serve.

SARGASSUM SILIQUOSUM J. G. AGARDH

Vernacular: "Aragan"

Literature: Seale in Phil. Jour. Sci. D, 6 (1911) 309—Webster in DAN
Phil. Bull. 39 (1925) 21.—Collado in Phil. Agri. 15 (1926) 129.

General distribution: Found in the Ilocos provinces; abundant from
January to June; collected in shallow depths near the shore; gathered
manually; sold in fresh forms at 30 to 40 centavos per kilo.

Use: Eaten as a salad and sometimes added to fish preparations as
vegetable.

Preparation for the table: As a salad—same as other salad preparation
as "vegetable" cleaned and cut into pieces, then added to the
fish preparation with soup.

TABLE 1.—Chemical analysis of some Philippine seaweeds consumed fresh

Scientific names	Moisture per cent	Ash per cent	Protein per cent
1. <i>Codium</i> sp. -----	93.59	2.94	0
2. <i>Gracilaria</i> sp. -----	7.12	31.12	12
3. <i>Hydroclathrus</i> sp. -----	10.54	-----	10
4. <i>Laurencia</i> sp. -----	12.71	22.77	8
5. <i>Porphyra</i> sp. -----	35.71	15.70	12
6. <i>Sargassum</i> sp. -----	39.41	24.33	2

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