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Ethnobotany of *Sargassum* spp. in the Philippines

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Abstract — A survey of folk uses of *Sargassum* spp. in the 20 year period (1977–1996) showed that different regions in the tropical country of Philippines utilize the brown seaweed differently. Common to the entire country was the use of *Sargassum* spp. as cover or wrapper of fish and other marine animals to maintain their freshness.

In the Ilocos Region in the North, most folk consider it as a vegetable. Whereas in the Visayas and Northern Mindanao, natives utilize *Sargassum* as fertilizer, flower inducer and insect repellant. Cebuano and Boholano communities in the area also use the seaweed as animal feed in addition to those mentioned previously. In certain parts of the island of Bohol, a *Sargassum* drink is made and is reported to have health benefits. However, there is a declining trend of the folk uses of *Sargassum* due to Western and modern influences.

Key words: *Sargassum* spp., ethnobotanical uses, food uses, horticultural uses, agricultural uses

Sargassum are generally large, tall and dark brown or yellowish in color. Depending on species, leaf color and size varies with sex as in *Sargassum duplicatum*, female species are darker and not widely expanded at ends while leaves of male species are lighter in color and fleshy. Some species grow to several meters forming a bushy habitat while others are found drifting along the currents or near-shores.

They are found almost all over the rocky, wave exposed or sheltered areas. *Sargassum* beds usually occur near coral reefs where they attach to rocky substrates along reef margins (Trono and Fortes 1988). Like its varied uses, different places in the Philippines have their own local names for this brown seaweed. In the Northern Philippines, it is locally called *Aragan*, *Boto-boto* and *Lusay-lusay*. In Central Visayas and Northern Mindanao it is known as *Samo*.

A survey of folk uses of *Sargassum* spp. in the 20 year period (1977–1996) showed that different regions in the tropical country of Philippines utilize the brown seaweed. Common to the entire country was the use of *Sargassum* spp. as cover or wrapper of fish and other marine animals to maintain their freshness.

In coastal agricultural areas, the fresh plant is utilized too as a feed ingredient to hogs and cattle. Anecdotal reports indicated that fresh *Sargassum* is fed to the farm animals producing bigger body mass of the animal but less fat. The practice of adding ground *Sargassum* to commercial feeds have been discontinued due to unregulated harvesting which had ecological implications in the marine environment. It should be noted that bleached powdered *Sargassum* is now being exported as animal feed.

In the Ilocos Region in the North, most folk consider it as a vegetable and either eats them as salad or as an ingredient in their viands. The most common dish that utilizes *Sargassum* is the viand called "Inabraw", wherein young parts of the brown seaweed are boiled with other terrestrial vegetables and fish (Martinez-Goss et al. 2001, Cordero 2005, Trono et al. 1988). It has also been reported that *Sargassum* tips have been incorporated in the canned milkfish being produced in the Visayas (Calmorin 1992). Aside from the above uses, *Sargassum* drink is made in the Bohol area and is reported to have health benefits. Coconut vinegar is added to the young *Sargassum* plants to hasten the disintegration of the thallus, however, there are conflicting reports of whether this is a common practice in the area.

Agricultural and horticultural uses of *Sargassum* are found mostly in areas where there is an influence of Cebuano culture in the Visayas and Mindanao. The natives utilize *Sargassum* as fertilizer by mixing salt-free algae with the soil or potting media of the plants. The practice has been improved and at present, the seaweed is now a main raw material in the manufacture of fertilizers. The vital role of *Sargassum* as an ingredient in the formulation of fertilizer is supported by the researches on the presence of plant growth hormones in seaweeds and some minerals (Laserna et al. 1982, Montaño and Tupas 1990, Tupas and Montaño 1987). Petchay (*Brassica chinensis*) and peanuts (*Arachis hypogea*) treated with foliar spray containing *Sargassum polycystum* extract showed significant increase in biomass production and bigger and greater number of fruits, respectively, as compared to the plants treated with kinetin spray (Montaño and Tupas 1990). The same results were obtained with string beans (*Phaseolus luteola*), and corn (*Zea mays*) (Tupas and Montaño 1987). Aside from using the algae as fertilizer, others hang fresh *Sargassum* in the orchids *Phaelenopsis* spp. to induce flower-

Table 1. Distribution of *Sargassum* in the Philippines.

Species	Distribution		
	Luzon	Visayas	Mindanao
Sargassum abbottiae	Albay Calatagan, Batangas		
S. baccularia	Calatagan, Batangas Mindoro Hundred Islands Palawan	Cebu	
S. balingasayasense	Bolinao, Pangasinan		
S. bataanense	Bataan		
S. binderi	Batangas Mindoro Hundred Islands Baler, Quezon Palawan	Cebu	
S. cinctum	Calatagan, Batangas Occ. Mindoro Hundred Islands Palawan	Cebu	
S. currimaoense	Currimao, Ilocos Norte		
S. crassifolium	Calatagan, Batangas La Union Mindoro Bolinao Pangasinan Palawan	Cebu	Zamboanga del Sur
S. cristaefolium	Batanes Batangas Ilocos Norte Ilocos Sur Palawan	Boracay Island Aklan Cebu Eastern Samar Guimaras Leyte	Sulu Surigao del Sur Zamboanga del Sur
S. feldmannii	Batangas Purto Galera Pangasinan Palawan	Cebu	Zamboanga del Sur
S. dotyi	Puerto Galera		
S. gracillimum	Batangas Puerto Galera Hundred Islands Palawan	Cebu	
S. hemiphyllum	Batanes Batangas Masbate Pangasinan Palawan	Cebu Samar Iloilo	
S. ilicifololium	Batanes Batangas Ilocos Norte Pangasinan	Cebu Borongan Samar Iloilo	Sulu Zamboanga del Sur
S. kushimotense	Batangas Occ. Mindoro Pangasinan PalawanCebu	Cebu	

Table 1. continued

Species	Distribution		
	Luzon	Visayas	Mindanao
S. oligocystum	Batanes	Aklan	Surigao
	Batangas	Antique	Zamboanga del sur
	Catanduanes	Bohol	
	Cavite	Cebu	
	Ilocos Norte	Eastern Samar	
	La Union	Guimaras	
	Palawan	Iloilo	
		Negros	
S. ohnoi	Puerto Galera		
S. paniculatum	Batanes	Cebu	
	Batangas		
	Hundred Islands		
	Pangasinan		
S. polycystum	Albay	Antique	Davao del Norte
	Bataan	Biliran	Surigao del Norte
	Batangas	Bohol	Zamboanga del Sur
	Cagayan	Cebu	
	Catanduanes	Eastern Samar	
	Eastern Samar	Negros Occidental	
	Ilocos norte	Negros Oriental	
	La Union	Siquijor	
	Marinduque		
	Occ. Mindoro		
	Puerto Galera		
	Palawan		
S. samarense	Eastern Samar		
S. siliquosum	Batangas	Antique	Misamis Occidental
	Cagayan	Biliran	Zamboanga del Sur
	Cavite	Bohol	
	Ilocos Norte	Cebu	
	Ilocos Sur	Eastern Samar	
	La Union	Guimaras	
	Masbate	Estancis	
	Mindoro	Iloilo	
	Pangasinan	Leyte	
	Quezon	Negros Occidental	
		Siquijor	
S. turbinaroides	Batangas	Cebu	
	Puerto Galera		
	Pangasinan		
	Palawan		
S. umezakii	Puerto Galera		
S. velasquezii	Puerto Galera		
S. yamadae	Currimao, Ilocos Norte		
Sargassum sp.	Pangasinan		Misamis Oriental
Sargassum sp.	Sorsogon		

ing and to repel insects. Some hang fresh *Sargassum* on the flowering cacao trees to prevent infestation of insects on the fruit. In southern Visayas area, *Sargassum* is burnt with small pieces of rubber to ward off insects. This practice is found prevalent in rice- and other crop producing areas (Aliño et al. 1990).

With development of the sea urchin fisheries and its hatchery recently, *Sargassum* has been used to feed the sea urchins. It is interesting to note that *Sargassum* was fount to contain a compound that induces the sea urchin planula to settle and metamorphose. (Abriam et al. 2005). The feasibility of *Sargassum* spp. as a feed to cage-cultured abalone

Asina asina was also assessed. The study noted that abalone fed with *Sargassum* displayed significantly higher growth rate (Calmorin 1994).

There is declining trend of the folks uses of *Sargassum* due to Western and modern influences. Another area of concern is on the conservation of marine biodiversity and marine environment. Specific to *Sargassum* is the natural stock management and development of culture methods.

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