

Non cultivated Nutritive Aquatic Angiosperms of Nalbari District, Assam

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Abstract: Since time immemorial noncultivated food plants have displayed a vital role to the food behavioral system of human community. Due to high cost and low supply of healthy food, search for cheap and alternative sources of nutritious food has increased day by day. Wild edible plants (WEP) have emerged as new alternative sources to healthy and nutritious food. There are established practices of using non-conventional food plants as stand by source of food at times of famine, natural calamity and at times when major crops fail due to local climatic aberrations. It reveals that WEP also have medicinal properties though they are overlooked as food for poor families. The aquatic vegetation of Nalbari district is quite rich due to presence of a large number of water bodies like wetlands, swaps and a good number of rice fields. The study reveals that various parts of 32 species belonging to 29 genera and 21 families of angiosperms are edible and consumed by the communities inhabiting there in.

Key words: Non cultivated, Aquatic, WEP, Angiosperm, Nalbari

I. Introduction:

Non cultivated food plants are wild and grow naturally and consumed mainly as leafy vegetables. A large number of non-conventional food plants grow in different types of water bodies. Aquatic or hydrophytic vegetation is well observed in rivers, lakes, paddy fields, ponds, swamps, wetlands etc. Aquatic plants spend a part of their life cycle in water or their seeds germinate in water phase or in substrate of water body (Reid, 1961). Aquatic plants also cover those plants occurring in marshy places.

Nalbari is one of the prominent districts of Assam. The district is bounded by Baksa district in the North, Kamrup rural in the East, Kamrup district in the South and Barpeta district in the West. The geographic boundary of this district lies between 26°N and 26.51°N latitude and 91° E and 91.47° E longitude. Many perennial water reservoirs such as rivers, wetlands and swamps are observed here. Again during monsoon temporary marshy depressions are made in and around paddy fields. The rivers flowing over the district are Buradia, Pagaldia, Ghogra, Nona, Baraliya and Tihu. Some of the wetlands locally known as beels in this district are Roumari, Batamara, Sukekuchi, Batua Kamakhya, Ghoga etc. The communities inhabiting there in are Assamese.

II. Materials and Methods:

The specimens have been collected at their flowering and fruiting stages at regular intervals for proper identification. Herbarium sheets of standard size have been prepared following the methodology of Jain and Rao (1977). The local uses specially its consumption value have been analyzed with local experienced people including both male and female as per the process suggested by Jain (1987), Cotton (1996). The plants have been identified by comparing voucher specimens with the herbarium sheet of Gauhati university, Kanjilal Herbarium, Shillong and by using different floras and monographs of Benthams and Hooker (1862), Kanjilal(1934), Biswas and Calder(1936), Bor (1940), Pathak(1990), Malakar (1995). Families have been arranged following Benthams and Hooker (1862-1983) with slight modification.

III. Result and Discussion:

The aquatic vegetation of Nalbari district shows high species diversity due to presence of a large number of wetlands and paddy fields. The present study has reported that 32 aquatic angiosperms are consumed by the local people of the district (Table 1). Among them 13 species belong to monocot and 19 species belong to dicot. Regarding their occurrence 18 species are found in marshy places, 1 species as free floating, 4 species as rooted emergent, 8 species as rooted floating and 1 species as rooted submerged. Different plant parts like rhizome, petiole, tender shoot, leaf, flowers, thalamus, fruits and seeds are used to prepare different dishes. These WEP provide not only food but also indirectly increase disease resistant capacity by supplying vitamins, minerals etc to the rural people. The edible part of *Stellaria media*, *Ipomoea aquatica*, *Alternanthera sessilis*, *Rumex dentatus*, are tender shoot, but that of *Ottelia alismoides*, *Euryale ferox*, *Trapa natans*, *Fragaria indica*, is fruit (Table 2). The seeds of *Hygroryza aristata*, *Oryza rufipogon*, *Setaria glauca* can be cooked as rice. Again, the seeds of *Alpinia galanga* and leaf and rhizome of *Acorus calamas* have been utilized as spices.

Table 1: Non Cultivated Nutritive aquatic Angiosperm of Nalbari district

SL No	Family	Species	Vernacular name (Assamese)	Consumed part	Habitat
1	Sauraraceae	<i>Houttaysia cordata</i> Thumb	Mesendori	leaf	Marshy places
2	Nelumboaceae	<i>Nelumbo nucifera</i> Gaertner	Podum Phul	Thalamus, petiole	Rooted floating
3	Nymphaeaceae	<i>Nymphaea nouchali</i> Burm.f.	Mouka phul	Tuber, Petiole, Fruits and seeds	Rooted floating
		<i>N.rubra</i> Roxb. Ex Andrews	Ranga Mouka	Tuber, Fruits and seeds	Rooted floating
		<i>N.stellata</i> Willd.	Mouka phul	Tuber, Petiole, Fruits and seeds	Rooted floating
		<i>Euryale ferox</i> Salisbury	Mokhona	fruit	Rooted floating
4	Caryophyllaceae	<i>Stellaria media</i> (L.)Vill.	Thatheni xak	Tender shoot	Marshy places
5	Amaranthaceae	<i>Alternanthera sessilis</i> (L.)R. Br.ex DC	Mati Kaduri	Tender shoot	Marshy places
6	Polygonaceae	<i>Persicaria chinensis</i> (L.)H.Gross	Modhu soleng	Tender shoot	Marshy places
		<i>Rumex maritimus</i> L.	Tor Barua	Tender shoot	Marshy places
7	Rosaceae	<i>Fragaria indica</i> Andr.	Bon Komola	Ripe fruit	Marshy places
8	Oxalidaceae	<i>Oxalis corniculata</i> L.	Tengesi	Tender shoot	Marshy places
9	Trapaceae	<i>Trapa natans</i> var.	Singori	fruit	Rooted floating

		<i>incisa</i> Makino			
10	Apiaceae	<i>Centella asiatica</i> (L.)Urban	Bor Manimuni	Whole plant	Marshy places
		<i>Hydrocotyle sibthorpioides</i> Lamk.	Soru Manimuni	Whole plant	Marshy places
11	Convolvulaceae	<i>Ipomoea aquatica</i> Forsk	Kolmou	Tender shoot	Rooted floating
12	Plantaginaceae	<i>Bacopa monnieri</i> (L.) Pennell	Brahmi	Tender shoot	Marshy places
13	Campanulaceae	<i>Spencoclea zeylanica</i> Gaertn.	Pani Lehoti	Tender shoot	Rooted emergent
14	Asteraceae	<i>Enhydra fluctuans</i> Lour.	Heloshi	Tender shoot	Rooted floating
15	Hydrocharitaceae	<i>Ottelia alismoides</i> (L.) Perso	Sengun tepa	fruit	Rooted submerged
16	Pontederiaceae	<i>Monochoria hastata</i> (L.) Solms	Pani Koshu	flowers	Rooted emergent
		<i>M. vaginalis</i> (Burm.f.) presler ex Kunth	Vat Meteka	flowers	Rooted emergent
17	Acoraceae	<i>Acoras calamus</i> Linn.	Bos	Rhizome & leaf	Marshy places
18	Araceae	<i>Amorphophalus campanulatus</i> Blume	Ohl oshu	Dried tuber & petiole	Marshy places
		<i>Colocasia esculenta</i> (L.) Schott	Kola Koshu	Rhizome, petiole, tender leaf	Marshy places
		<i>Lasia spinosa</i> (L.) Thw.	Seng Mora	Tender shoot	Marshy places
		<i>Typhonium trilobatum</i> (L.)	Sama Koshu	Tender leaf	Marshy places

		Schott			
19	Poaceae	<i>Hygroryza aristata</i> (Retz.) ex Nees	Bahpotiya	Seed	Free floating
		<i>Oryza rufipogon</i> Griffith	Bon Dhan	Seed	Rooted emergent
		<i>Setaria glauca</i> Beauvois	Siyal Nejia	Seed	Marshy places
20	Zingibera ceae	<i>Alpinia galanga</i> (L.) Sw.	Tara gos	Seed	Marshy places
21	Marantac eae	<i>Donax canniformis</i> (G. Forster). Schumann	Tara Aloo	Rhizome	Marshy places

Table 2: No of species with plant parts consumed

Plant parts consumed	No of Species
Tender shoot	10
Leaf	4
Petiole	5
Whole plant	2
Flower	2
Fruit	7
Seed	7
Thalamus	1
Tuber	5
Rhizome	2

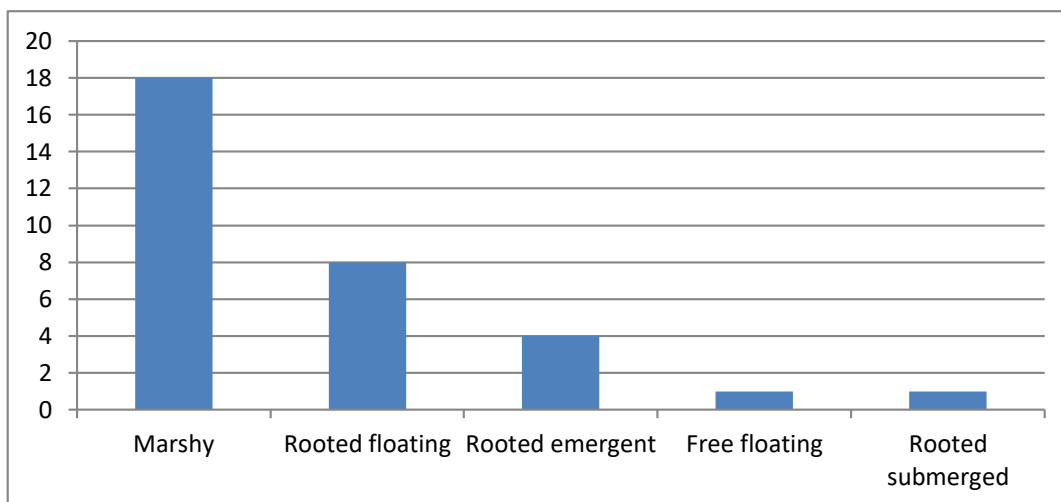


Fig-1 : Habitat categorization.

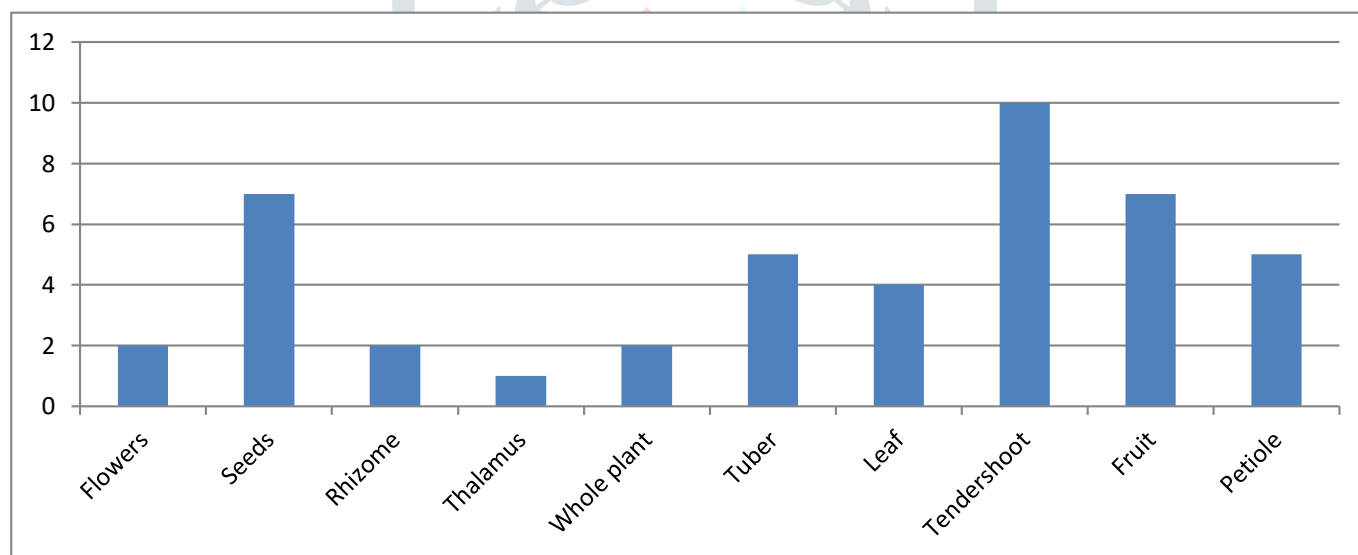


Fig-2 : No. of species with plant parts consumed.

IV. Conclusion:

Wild edible plants have always played an important role as supplement of major nutrients in the food security system since time immemorial. The present study reports that due to occurrence of many different types of water bodies like paddy fields, wetlands, ditches, ponds, swamps, the district is rich in aquatic plant diversity. The Assamese community of this region has been utilizing these plants as food in their diet since time immemorial. Their vast traditional knowledge on food and medicinal value and proper identifying capacity of these WEP is of great significance in the research field. Taxonomic studies and consumption values of aquatic plants will bring a new scope on ethno food hub in near future. Moreover, these plants represent

a crucial section of human diet and contribute huge economic boost to the livelihood of people living in below poverty lines of the Societies.

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