

A Taxonomic Approach To Popular Wild Edible Leafy Vegetables Used In Preparation Of Local Assamese Cuisines

¹Bidyut Bikash Deka

¹Assistant Professorr

¹Department of Botany, Barama College, Barama, Baksa, Assam, India

Abstract: The present study reveals that being a part of North East region Assam is rich in biodiversity from time immemorial. Assamese people collect locally available plant parts to prepare daily dishes from ancient times. As a part of the study conducted from 2015 to 2016, a total of 120 houses of upper and lower Assam was visited. During the survey time, 30 wild plant species were recorded as being used as leafy vegetables in Assamese cuisines. Among them 1 species belongs to Pteridophyte and 29 species to Angiosperms. Among Angiosperms, 25 species represent dicotyledones and 4 species monocotyledons. . Each and every plant carries different nutritional values. The harvesting or collecting time of leafy vegetables differs from species to species.

Key words: wild, leafy vegetable, Assamese, cuisine

I. Introduction:

Assam is one of the states of India and located in the north east region. The biodiversity of Assam is naturally rich. Different plant species occupy Assams forest, water bodies, waste land as natural habitat. Most of them prefer marshy places as habitat. Monsoonal rains make temporary depression in and around paddy fields and forest area. All these provide an ideal luxuriant growth of aquatic and marshland angiosperm (Deka & Devi, 2015). Assamese people have been including these plant in diet menu traditionally. They are of great nutritive value. Most of them have medicinal qualities too. The nutritional value of some wild leafy vegetables is higher than several Known common vegetables. Consumption of traditional diets known to these societies are said to have many beneficial effects such as prevention of some age related degenerative diseases- arteriosclerosis, stroke etc (Misra *et al* 2008). Some plants are super rich in vitamins, minerals, carbohydrate, proteins which are very essential for growth and development of human body to survive.. Any Assamese people can locally collect these type of plants which have nutritious value if prepared for daily dishes. Moreover these leafy vegetables have very lower market value as being wild local people can earn some money by collecting and selling them in urban market without any investment. The main challenge comes from proper identification of these wild plants. These non conventional plants not only help the human body to keep healthy but is also economically beneficial as its cost is almost little. The wild vegetables are free from chemical fertilizer and pesticides. Thus they bring no threats to human

health and can survive in all adverse situation due to presence of wild gene. Most of them are herbs and grow in water bodies or marshy places.

II. Materials and Methods:

Assam is one of the states of India with a heterogenous population and with an area of 78,438 sq Km. Assam has total population of 31,205,576 in which females were 15,266,133 as per 2011 census. Around 2.68 crore persons which is 86% of total population live in rural areas. The geographical boundary of the state is $24^{\circ} 2'N$ to $27^{\circ} 6'N$ latitude and $89^{\circ} 8'E$ to $96^{\circ} E$ longitude. The state is bounded by Bhutan and Arunachal Pradesh in the North, Meghalaya, Tripura, Mizoram, Manipur and Nagaland in the South, Arunachal Pradesh in the East and West Bengal and Bangladesh in the West. The study was conducted during 2015-2016 in various villages of upper and lower Assam.

In the survey the information regarding the edible values of plants has been collected from experienced elder villagers including both male and female of different localities of the state, as per suggested by Jain (1987) and Cotton (1996). The most effective and important side of consumption of wild plant is its proper identification and its correct traditional process of utilization. The specimens have been collected at their flowering and fruiting stages at regular intervals. Herbarium sheets of standard size have been prepared following the methodology of Jain and Rao (1977). 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, Kanjilal (1934), Bor (1940). and Dutta (2004) and others available at the library of Gauhati University.

The scientific names of the plants are arranged in alphabetic order as shown in table 1. Other information provided are vernacular name in Assamese, flowering and fruiting periods and a brief taxonomic description.

III. Result and Discussion:

The wild edible leafy vegetables consumed by Assamese people show high diversity due to presence of suitable environmental condition as well as vast traditional knowledge regarding its food value.. The present study has documented that 30 plant species are consumed by the local people of the state as leafy vegetable (Table 1). Among them 4 species belong to monocot, 25 species belong to dicot and 1 Pteridophyte (Table 2). The 2 most dominant families regarding consumption value are Araceae (04) and Amaranthaceae (03). Regarding their occurrence 6 species are found in aquatic habitat and remaining 24 species in terrestrial habitats. These non conventional plants provide not only food but also indirectly supply vitamins, minerals etc to the rural people. Among the 30 species 26 are categorized under herb, 3 under climber and 1 under tree. Though mostly lamina portion of leaves or tender shoots are preferred for cooking but in case of *Colocasia gigantea*, *Homalomena aromatica*, *Nymphaea alba* and *Nymphaea nouchali* the petiole is cooked.

Table 1: Wild popular plants used in Assamese cuisines as leafy vegetables

Species	family	Vernacular name (Assamese)	Collection period	Flowering & fruiting period	Taxonomic description
<i>Alternanthera sessilis</i> R. Br.	Amaranthaceae	Matikaduri	May-June	July-Oct	Perennial herb with white flower
<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	Kata khutura	Jan-Feb	March-May	biennial herb with spiny shoot
<i>Amaranthus viridis</i> Linn.	Amaranthaceae	Khutura	Dec-Jan	Jan-March	Annual herb with greenish flower and deltoid ovate leaves
<i>Bacopa monnieri</i> (L.) Pennell	Scrophulariaceae	Brahmi aak	June-August	July-Sept	Perennial Rooted emergent aquatic herb with bitter taste
<i>Basella rubra</i> Linn.	Basalaceae	Puroi sak	Oct-Jan	Feb-April	A biennial succulent climber with dark purple small fruit
<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Purnanava	Whole year	April-May	Perennial herb with diffuse stem
<i>Centella asiatica</i> Urban	Apiaceae	Bor Manimuni	Jan-April	Feb-March	A prostrate annual herb with reniform leaf
<i>Chenopodium album</i> L.	Chenopodiaceae	Jilmil xaak	Jan-Feb	March-May	Annual herb with purple striate stem
<i>Colocasia esculenta</i> (L.) Schott	Araceae	Kola kosu	Whole year	May-July	Perennial herb with tuberous rhizome
<i>Colocasia gigantea</i> (Blume ex Hassk) Hook.f.	Araceae	Dohi Kosu	Whole year	May-July	Perennial herb growing in shady places; inflorescence white
<i>Diplazium esculentum</i> (Retz.)Sw.	Polypodiaceae	Dhekiya	June-Sept		Perennial non flowering herb with ascending rhizome and leaf with circinate vernation
<i>Enhydra</i>	Asteraceae	Helenchi	June-	July-Nov	Perennial aquatic rooted

<i>fluctuans</i> Lour.			August		floating diffusing herb with bitter taste
<i>Homalomena aromatica</i> (Spreng.) Schott	Araceae	Gondh Kosu	Whole year	March- May	A perennial short herb with stiff and strong scented petiole
<i>Houttuynia cordata</i> Thunberg	Sauraraceae	Masandari	Whole year	April- June	Perennial herb with creeping root stock and white flower and with strong fishy odour
<i>Hydrocotyle sibthorpioides</i> Lam.	Apiaceae	Soru Manimuni	Jan- March	Feb- March	A prostrate annual herb with shiny cordate leaf
<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	Kolmou	July-Oct	Oct-Jan	Perennial aquatic rooted floating herb with violet flower
<i>Lasia spinosa</i> Linn.	Araceae	Seng Mora	Whole year	July-Sept	Perennial herb with Stoloniferous stem, prickly
<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Dron	Jan- March	Oct-Nov	Annual herb with quadrangular stem and white flower imparting a bitter taste
<i>Murraya koenigii</i> Spreng.	Rutaceae	Nara Singha	April- Sept	Jan- March	perennial small tree with strong scented leaves
<i>Nymphaea alba</i> L.	Nymphaeaceae	Saru vet	July-Oct	July-Oct	Aquatic rooted floating perennial herb
<i>Nymphaea nouchali</i> Burman	Nymphaeaceae	vet	June-Oct	July-Oct	Aquatic rooted floating perennial herb
<i>Oxalis corniculata</i> L.	Oxalidaceae	Tengeshi tenga	Jan- March	Feb- March	Annual creeping herb with yellow flower, dehiscent fruit and sour taste
<i>Paederia foetida</i> L.	Rubiaceae	Vedai lata	Whole year	July-Sept	Perennial climber with strong sulphurous odour
<i>Persicaria</i>	Polygonaceae	Modhu Soleng	Whole	Feb-	Perennial herb with white

<i>chinensis</i> (L.) H. Gross			year	April	flower and sour taste
<i>Portulaca oleracea</i> L.	Portulacaceae	Malbhog xaak	Dec-March	Feb-March	Annual succulent prostrate herb with yellow flower
<i>Smilax zeylanica</i> L.	Smilacaceae	Tikoni borua	July-Sept	Sept-Dec	Perennial climber with prickly stem
<i>Sphenoclea zeylanica</i> Gaertner	Sphenocleaceae	Pani lehati	June-August	July-Oct	Annual aquatic herb with hollow spongy stem
<i>Stellaria media</i> Linn.	Caryophyllaceae	Moroliya	Dec-March	Jan-April	Annual herb with decumbent stems & white flower
<i>Rumex dentatus</i> L.	Polygonaceae	Bon suka	Jan-March	Feb-April	Annual herb with oblong leaf blade and paniculate inflorescence
<i>Talinum paniculatum</i> (Jacq) Gaertn.	Talinaceae	Pirali Paleng	Whole year	Feb-March	Perennial succulent herb with tuberous root and pink flower

Table 2: Numerical presentation of species used as leafy vegetables

Taxa	Number of		
	Family	Genera	Species
Pteridophyte	1	1	1
Dicotyledons	20	23	25
Monocotyledons	1	3	4
Total	22	27	30

IV. Conclusion:

The present study reports that there are a good number of wild leafy vegetables available in the forest, roadside, paddy fields, wetlands, swamps etc of Assam. They are part and parcel in Assamese cuisine and almost every rural Assamese women can easily identify them. But biochemical research regarding their nutritional values is not satisfactory. Extensive studies in the field will create a new market to unemployment and economy of the state.

V. Acknowledgement:

Author is thankful to Assamese community of different districts of Upper and Lower Assam for giving valuable information required for the present investigation.

References:

- [1] Bor, N.L. (1940): Flora of Assam Vol-V (Gramineae). Calcutta.
- [2] Cotton, C.M. (1996): Ethnobotany- Principles and Application. John Wiley and Son, New York.
- [3] Deka, N. & Devi, N. (2015): Wild edible aquatic and marshland angiosperms of Baksa district, BTC Area, Assam, India.
Asian Journal of Plant Science and Research, **5(1)**:32-48.
- [4] Dutta, A.C. (2004): Axamar Gos-Gosoni, Vol I, Assam Science Society, Assam, Print.
- [5] Dutta, A.C. (2004): Axamar Gos-Gosoni, Vol II, Assam Science Society, Assam, Print.
- [6] Jain, S.K. (1987): A manual of Ethnobotany. Scientific publishers, Jodhpur. *Eco.Bot.* **33 (1)**: 52-56. New York Bot. Gard.
- [7] Jain, S.K. & Rao, R.R. (1977): A handbook of Field and Herbarium methods. Today & Tomorrow's Printers & Publishers,
New Delhi.
- [8] Kanjilal, U.N., Kanjilal, P.C., Das, A., Purkayastha, C. and De, R.N. (1934): Flora of Assam. vols. I-IV, Govt. of Assam Press, Shillong.
- [9] Misra, S., Maikhuri, R.K., Kala, S. P., Rao, K. S. and Saena, K. G. (2008): Wild leafy vegetables : A study of their subsistence dietetic support to the inhabitants of Nanda Devi Biosphere Reserve, India. *Journal of Ethnobiology and Ethnomedicine*, **4**:15
1-9