Annals of Plant Sciences 6.11 (2017) pp. 1732-1735

ANNALS OF PLANT SCIENCES
ISSN: 2287-688X
OPEN ACCESS
www.annalsofplantsciences.com

Research Article

Ethno-botanical study of wild edible fruits consumed by the people of Lakhimpur district of Assam, India.

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Received: 9/17/2017; **Accepted:** 9/28/2017

Abstract: The present study deals with the identification, ethno-botanical exploration, documentation and popularization of wild edible fruits consumed by the people of Lakhimpur district of Assam, India. Fruits are the chief sources of essential minerals, protein, carbohydrates, fiber, vitamin C, sugar, water and possess tremendous medicinal value. Fruits play an important role in maintaining a well-balanced weight loss diet and healthy living. During the study period, several field trips were conducted in different seasons and the plants were identified by consulting relevant scientific literatures. In this paper, a total of 48 wild edible fruits belonging to 25 families were recorded along with their local names, scientific name, family, time of availability, taste and uses. Further, emphasize should be given in order to maintain and improve this important source of food supply for their conservation for human welfare.

Keywords: Ethno-botany, Medicinal value, Wild edible fruits.

Introduction

Since time immemorial, wild edible fruits have been playing an indispensable part in supplementing the diet of the people. But with the advent of many exotic fruits, the dependence and popularity of these fruits has gradually declined. In tribal areas, many people still use them extensively as a supplement to their basic food requirement and even preserve for use during periods of food scarcity. Poor people living in the rural areas also depend on these wild edible fruits as an income source for their livelihood.

Wild edible fruits are rich sources of vitamin C, sugar, fiber, minerals and water. They provide fibers which prevent constipation. The edible fruits having nutritional food value provide minerals like sodium, potassium, magnesium, iron, calcium and phosphorus. Since, fruits contain low calorie content, therefore plays a vital role in weight loss and nutrition. Wild fruits are locally available, inexpensive and possess high nutritive value. They have a great socio-economic significance because of their food and medicinal property. Apart from their traditional use of food, wild fruits are widely used in different formulations of Indian folk medicine, fodder and for performing rituals and other functions. They can also be used as remedy for various diseases. Consumption of these fruits reduces the risks from several diseases like diabetes, cancer, neurodegenerative ailment and coronary heart disease (Brahma *et al.,* 2013). Assam constitutes different ethnic communities and tribes. Wild fruits are mainly consumed by the rural and tribal people of different localities of Assam.

People are mostly dependent on various natural resources for their daily requirement and utilize varieties of wild plants as their food both for nutrition and medicinal purposes. Mostly, these wild plants include herbs, shrubs and trees which are used either as vegetables or as fruits. Majority of the fruits are eaten raw when ripe or processed which help to compensate the day-to-day requirement of calories. Generally, the sweetish pulp or the fleshy palatable pericarps of the ripe berries or drupes are consumed. There have been several reports on wild edible fruits done by Upadhye *et al.,* (1994), Wehmer (1996), Bist and Sharma (2005), Sankaram *et al.,* (2006), Nitzela *et al.,* (2007), Mengistu and Hager (2008) and Rashid *et al.,* (2008).

Area of study

Lakhimpur district is bounded by latitude 27°20′ N and longitude 94°15′ E. The total area of the district is approximately 2,277 km². It is bounded by Papumpare district of Arunachal Pradesh to the north, Dhemaji district to the east, Jorhat district to the south and Sonitpur district to the west. It has a unique climatic pattern, and average rainfall of 263.3 mm annually with high humidity (68%) prevailing almost throughout the year in the district (http://lakhimpur.nic.in/html). This typical climate results in rich evergreen vegetation with dense forest areas suitable for growth of a large number of wild plant species.

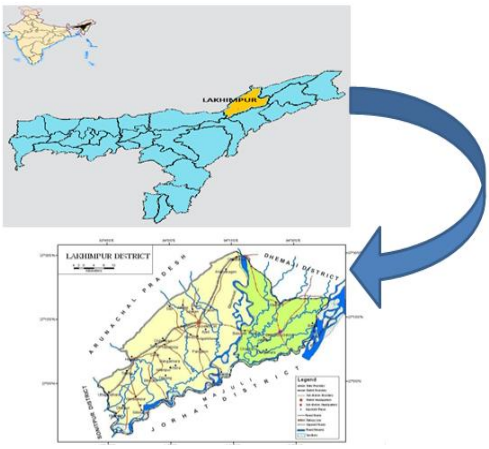

Figure 1. Map showing the study area.

Materials and Methods

The study was undertaken during 2015-2016 in different seasons by conducting several field trips in different remote places of Lakhimpur district, Assam. In order to assess the traditional knowledge on wild edible fruits, frequent interactions and discussions were made with the local vegetable vendors, villagers, including farmers, herdsmen, shepherds and housewives. Questionnaires

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were done for the collection of data such as local name, time of availability, taste and their mode of uses.

During survey, live specimens along with photographs of all the collected wild edible fruits were taken for local identification and the indigenous knowledge received from them was noted down. The wild fruit plants were identified with the help of local people and referring relevant scientific literatures which includes Hooker (1872-1877); Cooke (1967); Singh and Karthikeyan (2000), Singh *et al.,* (2001) and Yadav and Sardesai (2002).

Results and Discussion

In the present investigation, a total of 48 wild edible fruits belonging to 25 families were reported along with their local name, scientific name, family, time of availability, taste and uses (Table - 1). Most of these wild fruits have very rich nutritive value. Some of them also possess medicinal properties. Majority of the fruits are eaten as raw when ripe, few are taken as vegetables and pickles.

This study deals with the identification, ethno-botanical exploration and documentation of wild edible fruits with respect to food value available in Lakhimpur district, Assam.

Fruits are considered as nature's gift to mankind and are not only delicious and refreshing but also constitute a major part of daily food intake. Therefore, special attention should be paid to them in order to conserve this important source of food supply. Overexploitation of wild areas due to deforestation and lack of popularity has resulted in declining of these plants and many are nearing extinction. Therefore, mass attention is urgently needed to preserve and popularize these wild edible fruits among the people. Further, the indigenous traditional knowledge about the uses of these wild fruits is valuable and research on its nutritional analysis and their medicinal properties is required for near future.

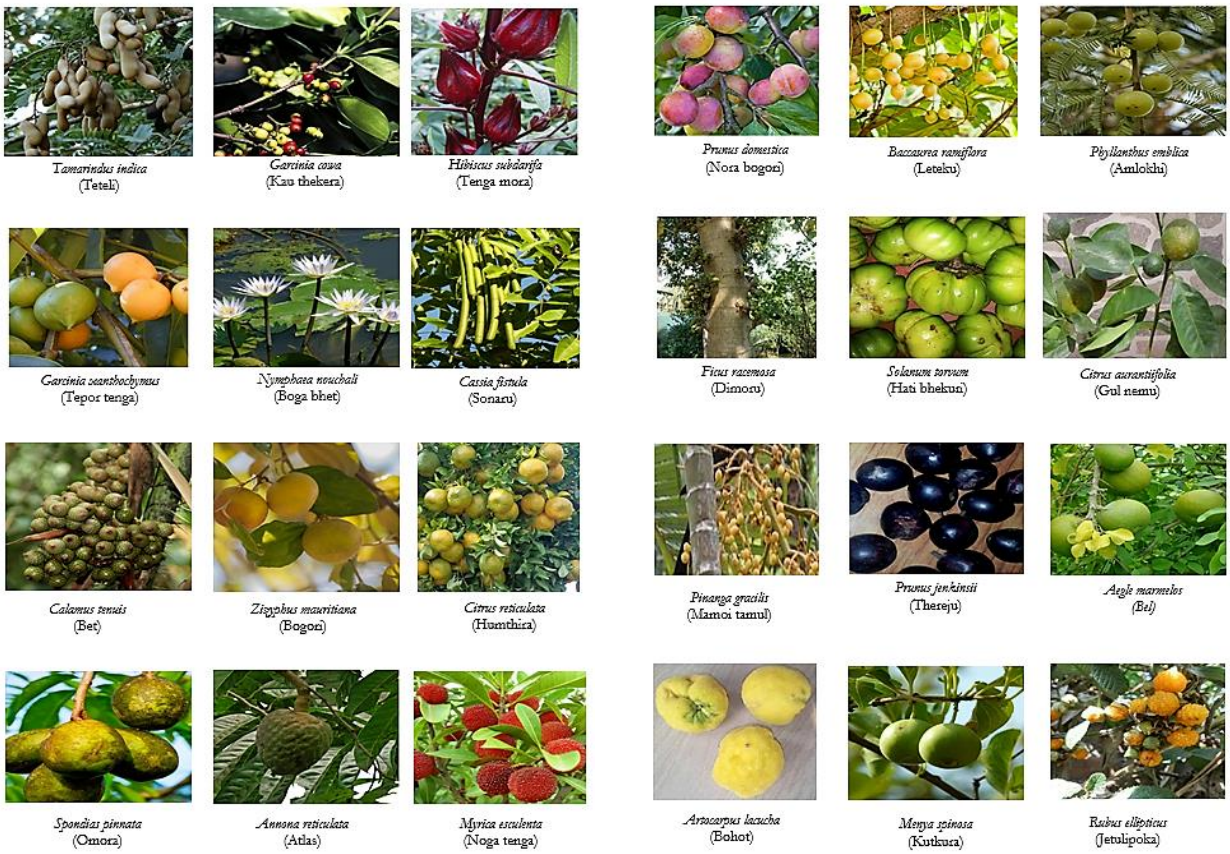
Conclusion

Wild fruits play a significant role in providing nutrition to people of rural and tribal communities since they are an excellent source of various vitamins, carbohydrates, proteins, fibers, minerals besides medicinal value. Incorporation of these wild fruit plants in commercial crop plants will improve the economy in tribal areas and food deficiency. The present study would contribute to the database of traditional knowledge of wild fruits as food and also educate the younger generation about its ethno-botanical importance. Furthermore, a scientific investigation of wild edible fruits is necessary in order to assess the potentiality which would be cultivated and utilized as a source of food supply for an ever-increasing population.

Table 1. List of wild edible fruits available in Lakhimpur district of Assam, India.

S. No.	Local Name	Scientific Name	Family	Taste	Time of availability	Uses
1	Ahom bogori	*Prunus persica* (L.) Stokes	Rosaceae	Sweet	Mar-June	Ripen fruits are eaten raw.
2	Amlokhi	*Phyllanthus emblica* L.	Euphorbiaceae	Sour/ astringent	May-Nov	Fruits are eaten raw or dried and also used in pickles.
3	Atlas	*Annona reticulata* L.	Annonaceae	Sandy Sweet	Nov-Dec	Fruits are eaten raw.
4	Bel	*Aegle marmelos* (L.) Corr. Serr.	Rutaceae	Sweet	Feb- June	Fruits are eaten raw and used in stomach trouble, constipation.
5	Bet	*Calamus tenuis* Roxb.	Arecaceae	Astringent	April-Dec	Ripen fruits are eaten raw.
6	Bhumura	*Terminalia bellirica* Roxb.	Combretaceae	Almond taste/ astringent	Dec-Feb	Fruits are eaten raw. Highly medicinal and used in the preparation of 'Trifola'.
7	Boga bhet	*Nymphaea nouchali* Burm. f.	Nymphaeaceae	Slightly bitter	May-Oct	Fruits are eaten raw.
8	Bogori	*Zizyphus mauritiana* Lam.	Rhamnaceae	Sweetish sour	Dec-Feb	Fruits are eaten fresh. Pickles, jelly can be prepared
9	Bohot	*Artocarpus lacucha* Buch. -Ham.	Moraceae	Sweet	May-July	Fruits are eaten raw.
10	Bokul	*Mimusops elengi* Roxb.	Sapotaceae	Sandy sweet	Feb-Sept	Ripen fruits are eaten raw.
11	Bor thekera	*Garcinia pedunculata* Roxb.	Clusiaceae	Sour	May-July	Ripen fruits are first dried and then eaten with curries or as pickles.
12	Dimoru	*Ficus racemosa* L.	Moraceae	Sweet	April-July	Ripen fruits are eaten raw.
13	Futkola	*Melastoma malabathricum* L.	Melastomataceae	Sweet	Nov-Jan	Fruits are eaten raw.
14	Gul nemu	*Citrus aurantifolia* (Christen) Swing.	Rutaceae	Sour	May-Nov	Fruits are eaten raw or as pickles.
15	Hati bhekuri	*Solanum torvum* Swartz.	Solanaceae	Bitter	May-Nov	Young fruits are eaten cooked.
16	Humthira tenga	*Citrus reticulata* Blanco.	Rutaceae	Sweetish sour	Dec-Feb	Mature fruits are eaten raw.
17	Jetulipoka	*Rubus ellipticus* Smith.	Rosaceae	Sweet	Sept- Mar	Ripe fruit smells sweets and is very tasty, eaten with must relish.
18	Jolphai	*Elaeocarpus floribundus* Bl.	Elaeocarpaceae	Sour	Oct-Jan	Fruits are eaten raw or as pickles.
19	Jora tenga	*Citrus medica* L.	Rutaceae	Sour	Sept-Nov	Fruits are eaten raw.
20	Kau thekera	*Garcinia cowa* Roxb.	Clusiaceae	Sour	June-July	Ripen fruits are first dried and then eaten with curries or as pickle.
21	Kola jamu	*Syzygium cumini* (L.) Skeels.	Myrtaceae	Sweet	June-July	Ripen fruits are eaten raw.
22	Kordoi	*Averrhoa bilimbi* L.	Oxalidaceae	Sour	Oct-Mar	Fleshy fruits are eaten raw. Pickles, jelly can be prepared. It is considered medicinal and given to jaundice patient.
23	Kothal	*Artocarpus heterophyllus* Lamk.	Moraceae	Sweet	Mar-Aug	Ripen fruits are eaten raw.
24	Kunduli	*Coccinia grandis* (L.) Voigt.	Cucurbitaceae	Slightly sour	Throughout the year.	Young fruits are eaten as vegetables.
25	Kutkura	*Menya spinosa* Roxb. ex Link.	Rubiaceae	Sweetish sour	Oct-Dec	Ripen dried fruits are edible.
26	Leteku	*Baccaurea ramiflora* Lour.	Euphorbiaceae	Sweetish sour	May- July	Ripen fruits are eaten raw.
27	Mamoi/ Mumai tamul	*Pinanga gracilis* Bl.	Arecaceae	Astringent	Mar-June	Ripen fruits are eaten raw.
28	Mirika tenga	*Elaeagnus caudata* Schltdl. ex Momiy.	Elaeagnaceae	Sour	April-May	Ripen fruits are eaten raw or as pickles.

29	Noga tenga	*Myrica esculenta* Buch. -Ham.	Myricaceae	Sour	April-Jun	Ripen fruits are eaten raw or as pickle.
30	Nora bogori	*Prunus domestica* L.	Rosaceae	Sweetish Sour	Jan-May	Ripe fruit is eaten with delicacy, either raw or as pickles.
31	Nuni	*Morus alba* L.	Moraceae	Sweet	Jan-Feb	Ripen fruits are eaten raw.
32	Omora	*Spondias pinnata* (L.f.) Kurz.	Anacardiaceae	Sour, slightly bitter	Sept-Dec	Fruits are eaten raw.
33	Outenga	*Dillenia indica* L.	Dilleniaceae	Sour	July- Dec	Fruit is eaten raw or cooked as vegetable. Pickles jams etc. are also prepared.
34	Pani jamu	*Syzygium malaccense*	Myrtaceae	Sweet	June- July	Ripe fruits are eaten raw.
35	Pokmou/ Kopal futa	*Physalis minima* L.	Solanaceae	Sweet	Mar- Sept	Mature fruits are eaten raw.
36	Poniol	*Flacourtia jangomas* (Lour.) Raeusch	Salicaceae	Sweet	May- July	Ripe fruits are eaten raw.
37	Pora amlokhi	*Phyllanthus acidus* (L.) Skeels.	Euphorbiaceae	Astringent	June- July	Ripen fruits are eaten raw or as pickle.
38	Robab tenga	*Citrus maxima* (Burm) Osbeck.	Rutaceae	Sweetish sour	Winter	Ripen fruits are eaten raw.
39	Rohdoi	*Averrhoa carambola* L.	Oxalidaceae	Sweet	Nov- Jan	Fruits are eaten fresh as chutney, squash and also considered medicinal for liver trouble.
40	Rupohi thekera	*Garcinia lanceifolia* Roxb.	Clusiaceae	Sour	Feb- July	Ripe fruits are eaten with vegetables. Pickles can be prepared. The fruit is highly medicinal.
41	Silikha	*Terminalia chebula* Retz.	Combretaceae	Bitter/ astringent	Oct- Dec	Highly medicinal, fresh or dried fruits are chewed after meal as digestive.
42	Siral	*Cucumis melo* L.	Cucurbitaceae	Sandy sweet	July- Oct	Mature fruits are eaten raw.
43	Sonaru	*Cassia fistula* L.	Fabaceae	Sweet	Dec- Feb	Fruits are eaten raw.
44	Tenga mora	*Hibiscus subdarifa* L.	Malvaceae	Sour	Winter	Fruits are eaten raw. Jam, jelly, pickles can be prepared from ripe fruits.
45	Tepor tenga	*Garcinia xanthochymus* Hook. f.	Clusiaceae	Sour	May-July	Ripe fruits are eaten raw or cooked with other vegetables. Pickles can also be prepared.
46	Teteli	*Tamarindus indica* L.	Fabaceae	Sour, slightly sweet	Nov- Feb	Unripe and ripe fruits are eaten raw. Used to prepare jelly, pickles.
47	Thereju	*Prunus jenkinsii* Hook f. & Th.	Rosaceae	Sweetish Sour	Dec-Mar	Ripen fruits are eaten raw.
48	Tita bhekuri	*Solanum indicum* L.	Solanaceae	Bitter	May-Nov	Fruits are eaten fried as vegetable and considered medicinal for worm infection and skin diseases.



Acknowledgement

The author is thankful to all the local people of different localities of the study area for their information, support and help in carrying out of the field studies.

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Cite this article as:

Dharitri Borgohain. Ethno-botanical study of wild edible fruits consumed by the people of Lakhimpur district of Assam, India *Annals of Plant Sciences 6.11 (2017) pp. 1732-1735.*

doi: http://dx.doi.org/10.21746/aps.2017.6.11.3

Source of support: Nil; **Conflict of interest:** Nil