

Wild edible fruits of the Karbi's of Karbi Anglong district of Assam, India

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Abstract

The paper deals with 51 species of wild edible fruits of the Karbi tribe along with botanical and Karbi names, brief description, time of availability, taste, mode of uses and market prices. The conservation of the indigenous plant wealth through cultivation and also for chemical analysis through further follow up investigation to evaluate their nutritive value on these plants has been emphasized.

Key words: Karbi Anglong, Wild fruits, Karbi tribe, Market prices.

INTRODUCTION

The state of Assam, with its diverse physiography and varied climatic conditions, bears a separate phytogeographic identity and diverse plant wealth within its much varied ecosystems (Baruwa 2006). Here, the annual rainfall varies from 85 cm to 250 cm and temperature from 5° C to 38° C, while the relative humidity usually varies between 73% and 95%.

The main inhabitants of the hilly area of the state are tribal people, belonging to six major ethnic groups viz., Karbi, Bodo, Mishng, Hmar, Kuki and Garo (Borooh 1985). Among them, the Karbi (Mikir) is a prominent tribe inhabiting mainly in Karbi Anglong district of Assam. Karbi Anglong lies between 92° 50' and 94° 25' East longitude and 25° 05' and 26° 15' North latitudes (Guha 2002). Karbi people, belongs to the Mongoloid racial stock (Bey 2004), prefer to live on hill slopes and are pile dwellers (Pegu, 1981). Being hill dwellers, their relation with forest is intrinsic and that plays an important role in their daily life (Kar & Borthakur 2007). Different kinds of fruit grow abundantly in their ambient vegetation and Karbi people in the district largely use most of these fruits in their daily life as dietary supplement either fresh or eaten cooked.

Wild edible fruits play an important role in the life of Karbi people to satisfy their therapeutic, dietary and livelihood needs. Significantly fruits also supplement to the dietary and nutritional requirements of the people of Karbi Anglong throughout the year. Fragmentary studies concerning people and plant interaction and their interdependence in Karbi Anglong have been undertaken from time to time (Jain & Borthakur, 1980; Handique *et al*, 1987; Chowdhry 1989; Borthakur, 1996) and on Karbi Anglong in different aspects by Borthakur, 1976a, 1976b, 1980, 1981a, 1981b; Kar & Borthakur, 2007. The present investigation was carried out on Karbi tribe with the objective to find out the wild edible fruits used by the Karbis of Karbi Anglong district of Assam. The findings of present investigations are new records for the area and are not recorded by the earlier workers.

METHODOLOGY

Intensive field surveys were undertaken during the period 2005 – 2007 with the help of village heads and persons who have knowledge on wild edible fruits, were undertaken for collection and to

record the ethnobotanical uses of fruits. Local markets were surveyed and plant samples were collected with necessary market information including market prices and form of fruits sold. Collected plants were made into herbarium specimen following standard herbarium techniques (Jain & Rao, 1977). Plants were identified consulting ASSAM Herbarium and Herbarium of Botany Department, Gauhati University. Voucher specimens have been deposited in the Herbarium of Botany Department, Gauhati University.

RESULTS

During the present study 49 species of Angiosperms and 02 species of Gymnosperms have been recorded. Recorded Angiosperms included 02 monocotyledonous and 47 Dicotyledonous species. The result has been presented in the Table 1 where the recorded plants are presented alphabetically including their botanical names, families, Karbi name(s), brief description, time of availability, mode of use and taste. And, the Table 2 shows the prices of 29 fruits recorded from six local markets.

Table 1: Wild edible fruits of Karbi's of Karbi Anglong district of Assam

Botanical name (family), Local name	Brief description	Time of availability	Mode of use	Taste
<i>Antidesma acidum</i> Retz. (Euphorbiaceae), <i>Ingchum</i>	Shrub; berry juicy, turns blue on ripening	November to February	Ripe fruit taken as such.	Sour
<i>Aphania rubra</i> L. (Sapindaceae), <i>Tekelu</i>	Tree; leaves whorled; ripe fruits black	July to August	Ripe fruit taken as such.	Sweet
<i>Artocarpus lakoocha</i> Roxb. (Moraceae), <i>Ingat-arong</i>	Tree; lamina ovate; ripe fruits tubercled, yellow	August to November	Fresh fleshy ripe fruit eaten	Sweet & sour
<i>Baccaurea sapida</i> Lour. (Euphorbiaceae), <i>Dampijuk</i>	Tree; lamina lanceolate; ripe fruit yellow juicy	June to July	Juicy aril produce refreshing drinks with salt	Sour & sweet
<i>Bischofia javanica</i> Blume (Euphorbiaceae), <i>Phungput</i>	Tree; fruit small, flat, red when ripe	June to August	Dry fruits infusion as refreshing drink	Sour
<i>Bridelia tomentosa</i> Blume (Euphorbiaceae), <i>Thebihi</i>	Tree; fruit small round, ripe fruit black	September to November	Ripe fruits taken as such	Sweet, astringent
<i>Carallia lucida</i> Roxb. (Rhizophoraceae), <i>Thengbu-thung</i>	Small tree; fruits small, red when ripe	September to November	Ripe fruits taken as such	Sweet
<i>Calamus rotang</i> L.(Arecaceae), <i>Pri</i>	Spiny climber; ripe fruits brown	October to January	Ripe fruits taken with salt	Sour
<i>Caryota urens</i> L.(Arecaceae), <i>Dok-Kichu</i>	Gigantic palm; ripe nuts turn red	April to July	Seeds taken with betel leaves	Sweet, astringent
<i>Cicca acida</i> (L.) Merrill (Euphorbiaceae), <i>Takeri Thelu</i>	Small tree; fruits ribbed, yellow when ripe	May to August	Ripe fruit cooked with dal or used as such	Sour
<i>Cycas pectinata</i> Griffith (Cycadaceae), <i>Or-oh</i>	Leaves pectinate; cone brown	November to February	Roasted seeds eaten	Sweet
<i>Dillenia pentagyna</i> Roxb. (Dilleniaceae), <i>Chirimpi</i>	Tree; fruits scaly, yellow when ripe	August to September	Ripe fruits made into chutney	Sweet

Botanical name (family), <i>Local name</i>	Brief description	Time of availability	Mode of use	Taste
<i>Diospyros embryopteris</i> Pers. (Ebenaceae), <i>Sotoro</i>	Tree; ripe fruit hairy, yellow	October to January	Ripe fruit taken as such	Sweet, astringent
<i>Donella roxburghii</i> (G. Don) Pier ex Lecom (Sapotacea), <i>Reng-reng</i>	Tree; ripe fruits yellow	September to January	Ripe fruits taken as such	Sweet
<i>Ehretia acuminata</i> R. Brown (Ehretiaceae), <i>Chorsim</i>	Tree; lamina elliptic, ripe fruit yellow	September to January	Unripe fruits made into pickle	Sour- sweet
<i>Elaeagnus latifolia</i> L. (Elaeagnaceae), <i>Selegni</i>	Thorny scandent shrub; ripe fruits red, scales silvery	February to April	Ripe fruits made into pickle	Sweet
<i>Elaeocarpus serratus</i> L. (Elaeagnaceae), <i>Okhi-Siming</i>	Tree; ripe fruits elliptic, green	August to October	Ripe fruits made into pickle	Sour
<i>Flacourtia indica</i> (Burm.f.) Merrill (Flacourtiaceae), <i>Thengpi kundu</i>	Small tree; ripe berry reddish black	September to November	Ripe fruits eaten as such	Sour
<i>Ficus racemosa</i> L. (Moraceae), <i>Ingthum</i>	Big tree; syconus hairy, red when ripe	May to August	Ripe fruit eaten as such	Sweet
<i>Garcinia morella</i> L. (Clusiaceae), <i>Prandong</i>	Tree; fruits turn yellow when ripe	June to August	Ripe fruit made into chutney	Sour
<i>Garcinia lancaefolia</i> L. (Clusiaceae), <i>Pranso</i> <i>arong</i>	Small tree; fruits turn red when ripe	May to July	Ripe fruits made into pickle	Sour
<i>Garcinia xanthochymos</i> Hook.f. T. Anderson (Clusiaceae), <i>Thechampreng</i>	Small tree; ripe fruits yellow	May to July	Ripe fruit roasted & made into chutney	Sour ex
<i>Garcinia pedunculata</i> Roxb. (Clusiaceae), <i>Pran-pri</i>	Big tree; ripe fruits yellow	April to July	Ripe fruits made into pickle	Sour
<i>Glycosmis pentaphylla</i> (Retz.) Correa (Rutaceae), <i>Praudettod</i>	Herb; ripe fruits turn yellow	July to September	Ripe fruit eaten as such	Sweet
<i>Gnetum gnemon</i> L. (Gnetaceae), <i>Hanthu</i>	Scandent shrub; cone apiculate	October to January	Seed roasted and taken	Sweet
<i>Gymnopetalum cochinchinensis</i> Kurz. (Cucurbitaceae), <i>Riho</i>	Twiner; fruits elliptic, ribbed, raw fruit green	June to September	Fresh fruits cooked as vegetable	Bitter
<i>Hibiscus cannabinus</i> L. (Malvaceae), <i>Hanserong</i>	Shrub; persistent calyx red, edible	August to October	Fruits made into chutney and jelly	Sour
<i>Hibiscus sabdariffa</i> L. (Malvaceae), <i>Hanserong-ke-er</i>	Shrub; persistent calyx red, edible	August to October	Fruit prepared into chutney and jelly	Sour
<i>Hodgsonia macro carpa</i> (Bl.) Cogn. (Cucurbitaceae), <i>Hanthar</i>	Twiner; ripe fruits round, turns orange colour	September to December	Seed kernel roasted and eaten	Sweet
<i>Litsea salicifolia</i> Hook.f. (Lauraceae), <i>Kadeng serang</i>	Small tree; ripe fruit black	April to June	Raw fruit made into chutney	Pungent
<i>Maesa indica</i> L. (Myrseniaceae), <i>Sesu</i>	Shrub; fruit spongy, yellow when ripe	August to November	Ripe fruits taken fresh	Sweet
<i>Melastoma malabathricum</i> L. (Melastomataceae), <i>Bik- bik</i>	Shrub; ripe fruits purple, hairy	August to October	Ripe fruit taken as fresh	Sweet
<i>Mimusops elengi</i> L. (Sapotaceae), <i>Bakul</i>	Tree; ripe fruits yellow	May to August	Ripe fruits taken as such	Sweet, astringent
<i>Opuntia dillenii</i> Haw. (Cactaceae), <i>Mirdo longpak</i>	Shrub; ripe berry red	November to February	Ripe fruit taken fresh	Sweet, slimy

Botanical name (family), Local name	Brief description	Time of	Mode of	Taste
<i>Oroxylum indicum</i> (L.) Vent. (Bignoniaceae), <i>Nopak ban</i>	Tree; sword shaped fruit & seed	February to May	Fresh immature fruit used as vegetable	Sweet
<i>Meyna laxiflora</i> Robyns (Rubiaceae), <i>Thenem-ui</i>	Shrub; ripe fruit yellow	September to December	Ripe fruit taken fresh	Sweet
<i>Murraya paniculata</i> (L.) Jack (Rutaceae), <i>Dengjir</i>	Shrub; ripe fruit black	September to November	Ripe fruit taken fresh	Sweet aromatic
<i>Myrica esculenta</i> Buch-Ham. (Myricaceae), <i>Naka hanthor</i>	Tree; ripe fruit round with protuberance, yellow	April to June	Ripe fruit juice taken as refreshing drink	Sour
<i>Nephelium longana</i> Camb. (Sapindaceae), <i>Marle-aron</i>	Tree; ripe fruit elliptic with protuberance, red	April to June	Ripe fruit juice taken as cool drink	Sour
<i>Prunus nepaulensis</i> L. (Rosaceae), <i>Sompho</i>	Shrub; ripe fruit hairy, yellow	May to July	Ripe fruit taken fresh	Sweet
<i>Rubus ellipticus</i> Sm. (Rosaceae), <i>Amreng chobai</i>	Shrub; ripe fruit yellow	September to November	Fruit juice taken as refreshing drink, also brewed	Sweet
<i>Semecarpus anacardium</i> L.f. (Anacardiaceae), <i>Bhaula</i>	Tree; ripe fruit black	October to December	Ripe fruit roasted	Sweet
<i>Solanum spirale</i> Roxb. (Solanaceae), <i>Jok-ho</i>	Shrub; ripe fruit yellow	August to September	Fresh fruit eaten cooked	Slightly bitter
<i>Spondias pinnata</i> (L.f.) Kurz (Anacardiaceae), <i>Siming</i>	Big tree; fruit yellow when ripe	September to November	Ripe fruits eaten cooked	Sweet aromatic
<i>Sterculia alata</i> Roxb. (Sterculiaceae), <i>Kok terak</i>	Big tree; fruit star shaped, red when ripe	May to July	Seed roasted and taken	Sweet
<i>Streblus asper</i> Lour. (Moraceae), <i>Chiri theso</i>	Tree; fruit juicy become yellow when ripe	September to November	Ripe fruits eaten fresh	Sweet
<i>Syzygium cumini</i> (L.) Skeels (Myrtaceae), <i>Jangmi thepo</i>	Tree; berry bluish black when ripe	June to August	Ripe fruits eaten fresh	Sweet
<i>Syzygium cerasoideum</i> (Roxb.) Raizada (Myrtaceae), <i>Jangme kelok</i>	Tree; berry whitish brown when ripe	June to August	Ripe fruits eaten fresh	Sweet
<i>Terminalia bellirica</i> (Gaertn.) Roxb. (Combretaceae), <i>Kuru</i>	Tree; fruit become yellow when ripe	August to September	Kernel used as such	Sweet
<i>Terminalia chebula</i> Retz. (Combretaceae), <i>Siluka</i>	Tree; fruit ribbed, turn yellow when ripe	October to December	Fruit taken fresh or dried	Bitter
<i>Zanthoxylum limonella</i> (Dennst.) Alston (Rutaceae), <i>Thennang arong</i>	Tree; fruit with aromatic gland become red when ripe	September to December	Fresh fruits used as condiment	Pungent

Table 2: Local market prices of some wild edible fruits in Karbi Anglong

Name of plant	Form of fruit sold	Market locality	Market price
<i>Artocarpus lakoocha</i>	Ripe, fresh	Diphu, Bukajan Dokmoka, Lahorijan, Silanijan, Manja	Rs.10/- to 20/- per kg
<i>Baccaurea sapida</i>	Ripe, fresh	Diphu, Bukajan Dokmoka, Silanijan	Rs.20/- to 30/- per 100 fruits
<i>Bischofia javanica</i>	Ripe & dry	Diphu, Silanijan	Rs.40/- per kg

Name of plant	Form of fruit sold	Market locality	Market price
<i>Cicca acida</i>	Raw & ripe	Diphu, Bukajan Dokmoka, Lahorijan, Silanijan, Manja	Rs.40/-per kg
<i>Dillenia pentagyna</i>	Ripe, fresh	Diphu, Bukajan Lahorijan, Silanijan	Rs.10/- per 4-5 fruits
<i>Diospyros peregrenata</i>	Ripe, fresh	Diphu, Bukajan Dokmoka, Lahorijan	Rs.10/- per 4-5 fruits
<i>Elaeagnus latifolia</i>	Ripe, fresh	Diphu, Dokmoka, Lahorijan, Silanijan, Manja	Rs 30/- to 40/- per kg
<i>Elaeocarpus serratus</i>	Unripe & ripe	Diphu, Bukajan Dokmoka, Silanijan, Manja	Rs.20/- to 30/- per kg
<i>Flacourtia indica</i>	Ripe, fresh	Diphu, Silanijan,	Rs.20/- per kg
<i>Garcinia morella</i>	Unripe, fresh	Diphu, Bukajan Dokmoka, Manja	Rs.40/-per kg
<i>Garcinia lancaefolia</i>	Ripe, fresh	Bukajan Dokmoka, Lahorijan	Rs.60/-per kg
<i>Garcinia xanthochymos</i>	Unripe, fresh	Diphu, Bukajan Dokmoka, Lahorijan, Silanijan, Manja	Rs.40/- to 60/-per kg
<i>Garcinia pedunculata</i>	Unripe & ripe; also dry	Diphu, Bukajan Dokmoka, Lahorijan, Silanijan, Manja	Rs.2/- to 5/- per fruit.
<i>Gnetum gnemon</i>	Ripe cone	Diphu, Bukajan Lahorijan, Silanijan, Manja	Rs.10/- per part (100-150gms)
<i>Gymnopetalum cochinchinensis</i>	Unripe, fresh	Diphu, Dokmoka, Silanijan	Rs.10/- per part (150-200gms)
<i>Hibiscus sabdarifa</i>	Unripe, fresh	Diphu, Bukajan Dokmoka, Lahorijan	Rs.40/- to 60/- per kg
<i>Hibiscus cannabinus</i>	Unripe, fresh	Diphu, Bukajan Dokmoka, Silanijan, Manja	Rs.40/- per kg
<i>Hodgsonia macrocarpa</i>	Unripe, fresh	Diphu, Bukajan Dokmoka, Silanijan, Manja	Rs.5/- per fruit
<i>Litsea salicifolia</i>	Unripe, fresh	Diphu, Bukajan Dokmoka, Silanijan, Manja	Rs.5/- per part (100gms)
<i>Myrica esculenta</i>	Ripe, fresh	Diphu	Rs.40/- to 60/- per kg
<i>Nephelium longana</i>	Ripe, fresh	Diphu, Dokmoka	Rs.2/- per fruit
<i>Prunus nepalensis</i>	Ripe, fresh	Diphu, Dokmoka, Lahorijan	Rs.10/- per 5 fruit
<i>Rubus ellipticus</i>	Ripe, fresh	Diphu	Rs.10/- per part (100gms)
<i>Solanum spirale</i>	Unripe, fresh	Diphu, Dokmoka	Rs.5/-per part (100gms)
<i>Spondias pinnata</i>	Ripe, fresh	Diphu, Bukajan Dokmoka, Lahorijan, Silanijan, Manja	Rs.10/- per part(100-200gms)
<i>Syzygium cumini</i>	Ripe, fresh	Diphu, Bukajan Silanijan, Manja	Rs.20/- to 40/- per kg
<i>Terminalia chebula</i>	Dry, fresh	Diphu, Bukajan Silanijan	Rs.10/- per part (100gms)
<i>Meyna laxiflora</i>	Ripe, fresh	Diphu, Silanijan, Manja	Rs.1/- per fruit
<i>Zanthoxylum limonella</i>	Ripe, dry	Diphu, Bukajan Dokmoka, Lahorijan	Rs.5/- per packet (50 gms)

DISCUSSION AND CONCLUSION

The prices of the fruits vary much from market to market and fluctuate from season to season depending on their preference of use. Majority of the fruits are eaten when they are ripe. It is the

sweetish pulp or fleshy palatable pericarp of the ripe berries or drupes that is consumed eg., in *Elaeagnus latifolia*, *Myrica esculenta*, *Rubus ellipticus*, *Syzygium cumini*. Occasionally, the edible part is the fleshy aril as in *Nephelium longana* and *Baccaurea sapida*. Apart from being eaten raw, fruits are often cooked with some wild leafy vegetables e.g. *Solanum spirale*, *Cicca acida*, *Gymnopetalum cochinchinensis*, *Litsea salcifolia* and *Oroxylum indicum*. Sometimes *Zanthoxylum limonella* is used as condiment. Frequently, the fruits are preserved in various ways for delayed consumption. Fruits of *Elaeagnus latifolia*, *Elaeocarpus serratus*, *Garcinia morella*, *Garcinia pedunculata*, *Garcinia xanthochymos* are often used to make pickle. Cooling drinks/beverages are prepared by mixing the pulp of the ripe fruits of *Myrica esculenta*, *Baccaurea sapida*, *Bischofia javanica*, *Nephelium longana*. Fruits of some plants like *Rubus ellipticus*, *Prunus nepaulensis*, *Elaeagnus latifolia* are even utilized for brewing country liquor. Some species like *Hibiscus cannabinus*, *Hibiscus sabdariffa* and *Prunus nepaulensis* are used for making jelly.

Although many wild fruits are eaten widely by the Karbi people but this resource has not been properly utilized for making marketable products. It was observed that some wild fruits have good demand in the local market. There is also ample scope for establishing small scale fruit processing unit for value added products like jam, jelly, squash, pickle, etc. However, some of the species are getting depleted in wild condition due to habitat destruction. Therefore, development of agroforestry and improvement of existing traditional agroforestry systems need to be addressed for proper utilization and development of this resource. Evaluation of nutritive value like protein, mineral, vitamin, fat, carbohydrate, etc. contents in the wild fruits will help to open new scope for further works in this field. So far, attention has not been paid from any quarters to this aspect of utilization of the bioresources of Karbi Anglong which have great potential for employment generation and economic upliftment of the rural people.

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