

Wild leafy vegetables sold in local markets of Ukhrul District of Manipur, India

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[Received Revised & Accepted 14.12.2012]

Abstract

Ukhrul district of Manipur (India) is mainly inhabited by *Tangkhul* tribe, which is the largest tribe among the Naga tribes in Manipur, whose main occupation is agriculture and collection of forest products to meet up their daily requirements. From time immemorial, *Tangkhul* tribe depend much on indigenous vegetables, both cultivated in kitchen gardens and wild, for enriching the diversity of food. Wild leafy vegetables also play a significant role in the sustenance of rural life in Ukhrul. Many wild leafy vegetables those are abundantly found in their locality are sold in local market, and hence serve as main source of household income for the *Tangkhul* community. Frequent surveys were conducted at the selected markets at least three times a month. This article reports wild leafy vegetables documented during survey in the local markets of Ukhrul district of Manipur, along with their vernacular names and mode of uses.

Key words: Wild leafy, Local markets, *Tangkhul*, Ukhrul, Manipur.

INTRODUCTION

Ukhrul, the main homeland of *Tangkhul Naga* tribe lies between 23°13' N and 25°68' N latitudes and 94° 20' E and 94° 25' E longitudes, having an area of 4,544 km² of which forest occupied about 2,600 km² surrounded by Myanmar in the east, Nagaland state in the north, Chandel and Senapati districts of Manipur respectively in the south and west. It is a hilly region and the average altitude of the district ranges from 914 meters to 2,835 meters above mean sea level. Thus the region enjoys tropical, sub-tropical and temperate climate. The temperate climate of the district is health promoting with a minimum and maximum temperature of 3^o C to 33^o C. The soil ranges from laterite to sandy loams with general red coloured and have moderate fertility. As per 2001 census the population of Ukhrul district is 1,40,946 (Anonymous 2001).

The *Tangkhul Naga* tribe is one of the largest tribe among the Naga tribes of Manipur. The *Tangkhul* people of this region are simple, brave, reliable, generous, sincere and friendly. The majority of the people are agriculturist and Rice (*Zhat*) is their staple food. The *Tangkhul* tribe largely depends on wild leafy vegetables, which constitute the major nutrient source in their daily diet. Most of the leafy vegetables are taken in simple boiled form. Consumption of wild leafy vegetables works as dietary supplements during times of food shortage is still an integral part of the *Tangkhul* community. Women and children generally collect a good

number of raw leafy vegetables from the surrounding forest for daily consumption as well as to sell the excess harvest in local markets as good source of income. Most of the markets in every district of Manipur are run and controlled by women, even in Ukhrul district *Ava* (Mother), *Avakatu* (Aunty) and *Achon* (Sister) of the *Tangkhum* community run different markets to support their families. The study indicated the presence of a large number of wild leafy vegetables in the district; however, the present paper enumerates only those species, which are sold in the local markets of Ukhrul District of Manipur.

In fact, a good number of valuable accounts have been published during the last two decades within the country including Singh & Arora (1978), Singh *et al* (1988), Borthakur (1996), Jamir (1996), Sudhakar & Vedavathy (2000), Singh *et al* (2001), Elangbam (2002), Kumar (2003), Kar & Borthakur (2007), Devi *et al* (2009), Salam *et al* (2010).

METHODOLOGY

Intensive ethnobotanical survey was conducted during 2009 – 2010 among the people of *Tangkhum-Naga* tribe for gathering information on wild edible plants traditionally used by them. The authenticity of the uses was repeatedly verified by asking to the different informer. In case of contradictory information, efforts were made to get the correct information. Regular surveys were conducted at the selected local vegetables markets (Litan, Lambui, Ukhrul) at least twice in a month. A minimum of 10 – 12 women vendors in each market were interviewed regarding the local name of the leafy vegetables, their use, source and market price. Voucher specimens were processed into mounted herbarium sheets following Jain & Rao (1977). The plants were identified with the help of different published literatures including Deb (1961a, b) and Kanjilal *et al* (1934 – 1940). One set of herbarium specimens have been deposited in the herbarium of the Department of Botany, Nagaland University and another set in the Life Sciences Department of Manipur University.

RESULTS

As much as 55 species of wild leafy vegetables are recorded during the present survey. These are enumerated below alphabetically in Table 1 along with their scientific names, family and references to voucher specimens followed by the vernacular names, habit, season, market price and mode of use.

Table 1. Wild leafy vegetables in the local market of Ukhrul district and their mode of uses

Botanical name [Family]; Exsiccatae; Vernacular name	Habit	Collection season	Market price	Mode of use
<i>Amaranthus spinosus</i> Linnaeus [Amaranthaceae]; <i>Salam-950; Somchan</i>	Herb	Throughout the year	Rs 5/heap	Cooked with dry fish
<i>Antidesma acidum</i> Retzius [Euphorbiaceae]; <i>Salam-952; Sachian</i>	Shrub	April-July	Rs5 / bundle of 5-8 twigs	Cooked with dry fish
<i>Ardisia colorata</i> Roxburgh [Myrsinaceae]; <i>Salam-941; Uthum</i>	Tree	Throughout the year	Rs 5-10 / heap	Cooked with meat
<i>Argyreia nervosa</i> (Burman f.) Bojer [Convolvulaceae]; <i>Salam-942; Puding uri</i>	Climber	Throughout the year	Rs5/ bundle of c. 300 g	Eaten in the form of <i>Kangshu</i>
<i>Artemisia nilagarica</i> (C.B. Clarke) Pampan [Asteraceae]; <i>Salam 259; Harana</i>	Under-shrub	May-August	Rs10-15 / bunch	Cooked as vegetable
<i>Bidens pilosa</i> Linnaeus [Asteraceae]; <i>Salam-973; Phanang kahakpasi</i>	Herb	April-July	Rs5 / bundle of 5-10 twig	Eaten raw with fermented fish (<i>Ringneokashai</i>)
<i>Brassaiopsis polyacantha</i> (Wallich) Banerjee [Araliaceae]; <i>Salam- 504; Sungphenghan</i>	Tree	May-August	Rs 10-15 / bundle	Simple boiled and as chutney (<i>Ironba</i>)

Botanical name [Family]; Exsiccatae; Vernacular name	Habit	Collection season	Market price	Mode of use
<i>Capsella bursa-pastoris</i> (Linnaeus) Medikus [Brassicaceae]; Salam-984; Chamtruk	Herb	November-February	Rs 3-5/ bundle	Cooked with other vegetables
<i>Centella asiatica</i> Linnaeus [Apiaceae]; Salam-924; Kongrihan	Herb	Throughout the year	Rs 3-5 / heap	Cooked as vegetable and as chutney
<i>Chamaesyce hirta</i> (Linnaeus) Millspaugh [Euphorbiaceae]; Salam- 519; Pakhangleiton	Herb	May-August	Rs 10-15 / bunch	Eaten raw with chilly chutney
<i>Chenopodium album</i> Linnaeus [Chenopodiaceae]; Salam-993; Kazingtareihan	Herb	November-March	Rs 10 per heap	Cooked with meat
<i>Cissus adnata</i> Roxburgh [Vitaceae]; Salam-508; Rameihanghor	Climber	November-February	Rs 5/bunch	Cooked with dry fish
<i>Clerodendrum colebrookianum</i> Walpers [Verbenaceae]; Salam-548; Nareihan	Shrub	May-August	Rs 10 /bundle of 8-10 twig	Cooked as vegetable
<i>Clerodendrum farinosum</i> (Roxburgh) Wallich [Verbenaceae]; Salam-999; Ching Moirang khanum	Shrub	June-September	Rs 5-10/ bundle.	Cooked with dry fish
<i>Corchorus capsularis</i> Linnaeus [Tiliaceae]; Salam-1804; Ananba	Shrub	July-September	Rs 10-15 / bunch.	Cooked with dry meat
<i>Crassocephalum crepidioides</i> (Benth) S. Moore [Asteraceae]; Salam-203; Revival	Herb	Throughout the year	Rs 5-10 / bunch	Eaten raw or cooked as vegetable
<i>Crotalaria juncea</i> Linnaeus [Fabaceae]; Salam-1806; U-hawai maton	Shrub	Winter	Rs 5-10 / heap	Eaten raw or cooked with other vegetables
<i>Cycas pectinata</i> Griffith [Cycadaceae]; Salam-1817; Yendang	Tree	April-July	Rs 5-10/ bundle of 5-8 leaves	Cooked as vegetable
<i>Debregeasia longifolia</i> (Burman f.) Weddel [Urticaceae]; Salam- 1823; Kahoratheh	Tree	Throughout the year	Rs 5-10 / bundle of 6-10 twigs	Cooked with pork
<i>Diplazium esculentum</i> (Retzius) Swartz [Athyriaceae]; Salam-566; Machana	Herb		Rs 3 / bundle	Fried and as chutney
<i>Elatostema</i> sp [Urticaceae]; Salam-575; Hantekhan	Shrub	November-March	Rs 5-10 / bundle of 5-8 Twigs	Cooked with meat or dry fish
<i>Eryngium foetidum</i> Linnaeus [Apiaceae]; Salam-556; Lam sachikom	Herb	Throughout the year	Rs 3-5 / bundle of 5-7plants	Cooked with meat
<i>Ficus palmata</i> Linnaeus [Moraceae]; Salam-599; Heiba	Tree	April-July	Rs5/ bundle of 3-5 twigs	Eaten raw and as chutney
<i>Ficus tsjakela</i> Burman f. [Moraceae]; Salam-901; Lelkuihan	Tree	May-July	Rs 10-15 per heap	Cooked as vegetable
<i>Houttuynia cordata</i> Thunberg [Saururaceae]; Salam-555; Ngayung	Herb	Throughout the year	Rs3-5 per bundle of 5-6 plants	Eaten raw
<i>Ipomoea aquatica</i> Forsskål [Convolvulaceae]; Salam-558; Kolamni	Herb	Throughout the year	Rs 5-10 per bundle of 6-12 twigs	Fried and cooked as vegetable
<i>Justicia adhatoda</i> Linnaeus [Acanthaceae]; Salam-927; Sipchang	Shrub	Throughout the year	Rs 5 / bundle	Fried with groundnut
<i>Lysimachia pervifolia</i> Franchet [Primulaceae]; Salam-1842; Kengoi	Herb	January-March	Rs 10 per heap	Cooked with dry fish
<i>Manihot esculenta</i> Crantz [Euphorbiaceae]; Salam-542; Thingpai	Shrub	Throughout the year	Rs 5 / bundle	Eaten raw

Botanical name [Family]; Exsiccatae; Vernacular name	Habit	Collection season	Market price	Mode of use
<i>Melothria purpusilla</i> (Blume) Cogniaux [Cucurbitaceae]; Salam-1855; <i>Lam karopthei</i>	Climber	Throughout the year	Rs 10 per bundle of 8-10 twig	Cooked with dry meat
<i>Oenanthe javanica</i> (Blume) DC. [Apiaceae]; Salam-589; <i>Hanchamhan</i>	Herb	March – May	Rs 5-10 per bundle of 6-8 Twigs	Eaten raw
<i>Oxalis corniculata</i> Linnaeus [Oxalidaceae]; Salam-524; <i>Shaithur</i>	Herb	Throughout the year	Rs 3-5 per heap	Cooked with pulses
<i>Passiflora edulis</i> Sims [Passifloraceae]; Salam-550; <i>Sitapor</i>	Climber	April-July	Rs 5-10 per bundle of 6-8 Twigs	Cooked as vegetable
<i>Persicaria barbata</i> (Linnaeus) Hara [Polygonaceae]; Salam- 1899; <i>Yelang</i>	Shrub	January-July	Rs 10 per heap	Rs 2-5/ bundle
<i>Persicaria chinensis</i> (Linnaeus) Nakai [Polygonaceae]; Salam-1895; <i>Tharak mana</i>	Herb	Throughout the year	Rs 5-10per bunch	Cooked as vegetable
<i>Persicaria perfoliata</i> (Linnaeus) H. Gross [Polygonaceae]; Salam-1896; <i>Lamipang</i>	Shrub	September-December	Rs 3-5 per heap	Cooked as vegetable
<i>Phlogacanthus thrysiflorus</i> Nees [Acanthaceae]; Salam- 512; <i>Sipchang</i>	Shrub	Throughout the year	Rs 5-10 per heap	Eaten raw or fried
<i>Pimpinella hastata</i> C.B. Clarke [Apiaceae]; Salam-1889; <i>Mansang</i>	Herb	June-August	Rs 5-10 per bundle	Boiled and as chutney
<i>Plantago erosa</i> Wallich [Plantaginaceae]; Salam- 523; <i>Havathan</i>	Herb	Throughout the year	3-5 per bundle of 5-7 plants	Cooked as vegetable
<i>Rumex crispus</i> Linnaeus [Polygonaceae]; Salam-564; <i>Palak</i>	Herb	Throughout the year	Rs 3-5 per bunch	Cooked as vegetable
<i>Rhynchosycheum ellipticum</i> A.DC. [Gesneriaceae]; Salam-1872; <i>Zalep</i>	Undershrub	Throughout the year	Rs 3-5 per bundle of 5-7 twigs	Eaten as chutney
<i>Schima wallichii</i> (DC.) Korthals [Theaceae]; Salam -535; <i>Mashuithei</i>	Tree	March-June	Rs 5-10 per bunch	Cooked with meat
<i>Scutellaria discolor</i> Colebrook [Lamiaceae]; Salam-525; <i>Yenakha</i>	Herb	April-July	Rs 3-5 per bundle of 5-7 plants	Cooked as vegetable
<i>Solanum nigrum</i> Linnaeus [Solanaceae]; Salam-533; <i>Hantehan</i>	Herb	Throughout the year	Rs 5 per bunch	Cooked with pounded rice
<i>Stellaria media</i> Linnaeus [Caryophyllaceae]; Salam-1891; <i>Yerum-Keirum</i>	Herb	November-February	Rs 10-15 per heap	Cooked with fish
<i>Tetrastigma bracteolatum</i> (Wallich) Planchon [Vitaceae]; Salam-1885; <i>Theibumthei</i>	Climber	March-August	Rs 10-15 per bunch	Cooked as vegetable

DISCUSSION

During the current survey 46 species of wild leafy vegetables belonging to 42 genera under 31 families were recorded from local market of Ukhrul District. Majority of the plants are herbs (21 sp.) followed by shrubs (10 sp.), trees (7 sp.) and climbers (5 sp.) and undershrubs (2 sp.). In addition to fish and meat of their daily meals, the *Tangkhul* people are also mostly depends on wild leafy vegetables, which form an important source of food in Ukhrul district and have significant place in the dietary habits of *Tangkhul* community. Majority of the leafy vegetables are eaten boiled or raw and only few are taken fried. Leafy vegetables not only

enrich the diet but some of those also possess medicinal properties. Some plants like, *Brassaiopsis polyacantha*, *Centella asiatica*, *Clerodendrum colebrookianum*, *Debregeasia longifolia*, *Elatostema sp*, *Rhynchochum ellipticum*, *Melothria purpusilla* and *Passiflora edulis* are in great demand in the local markets for their medicinal values. The price of different leafy vegetables fluctuates from season to season depending on their availability. However, it is desirable to undertake further detailed ethnobotanical study in the district and that may lead to the recognition of many more wild leafy vegetables used by the *Tangkhul* tribe. Emphasis must also be laid on the conservation on such plant wealth. However, the modern *Tangkhul* people have very little idea of this valuable instinct. So, they do not domesticate the wild leafy vegetables and do not try even to explore new wild leafy vegetables from their locality. So, it is highly desirable to undertake cultivation of the above said plants to meet the demands of the people living in the district who knew and used the wild species. Therefore, further research needs to be carried out on the investigation of conservation status, socio-economic importance and nutritional benefit of these leafy vegetables.

Acknowledgements

The authors are greatly indebted to the *Tangkhul* people of Ukhrul district for revealing their valuable information during our field survey.

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