

Kitchen garden plants of *Tangkhul* tribe in Ukhrul District, Manipur, India

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[Received revised: 05.12.2011; Accepted: 10.12.2011]

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. To supplement this, they maintain kitchen gardens adjacent to their own houses for their emergency needs and to get fresh vegetables, spices, fruits, medicinal plants and other domestic articles. This article reports 55 kitchen garden plants documented during field survey in the Ukhrul district of Manipur, along with their vernacular names and mode of uses.

Key words: Kitchen gardens, *Tangkhul*, Manipur.

INTRODUCTION

Kitchen gardens or household gardens are concerned with the small plot of land adjacent to one's home that is used to grow some plants for partially supplementing the daily requirements. The *Tangkhul* people are habituated to grow diverse type of crops in the courtyard of their home as kitchen garden, locally known as *yamkui*. They collect a good number of crops from wild habitats and grow a few of them in the kitchen gardens for daily consumption as well as for selling in local markets. They regularly maintain kitchen garden for growing both winter and summer crops. Winter groups include mustard, cabbage, radish, beans, spinach, etc. Summer groups include pumpkin, cucumber, brinjal, gourd, carrot, etc. This method of maintaining kitchen garden in a home plot is an age-old practice for the *Tangkhul* tribe, thereby preserving the useful biodiversity of the region. These studies have shown us to know that plants from kitchen gardens not only provide emergency needs but also providing supplement for nutrition by cultivating in organic manure. Some ethnobotanical studies have been done in Manipur in recent years emphasizing on wild edible plants, medicinal, but they hardly cover kitchen garden plants [Singh *et al* 1988; Sinha 1987]. Systematic documentation of kitchen garden plants has not been done in Ukhrul district. Hence, a preliminary survey on this aspect was done at two villages *Phalang* and *Phungyar* of Phungyar phaisat sub-division of Ukhrul district. In fact, a good number of valuable accounts have been published in the last one or two decades within and outside the country including Arora & Mehra (1977), Anderson (1979, 1986), Brierly (1976), Brownring (1985), Kimber (1978), Samati (2004), and Siroli (1991).

AREA AND PEOPLE

Ukhrul district of Manipur is the main homeland of *Tangkhul* tribe, which shares about 200 km of international boundary with Myanmar. It covers an area of 4,544 sq km flanked by Myanmar in the east, Nagaland state in the north, Chandel and Senapati districts of Manipur in the south and west, respectively. Ukhrul district is located between 23°13' N and 25°68'

N latitudes and 94°20' E and 95°25' E longitudes and covering an altitudinal range of 388 m to 2834 m above MSL. Thus the region enjoys tropical, sub-tropical and temperate climatic conditions in its different parts. The temperate climate of the district is health promoting with a minimum and maximum degree of 3° C to 33° C. The soil ranges from laterite to sandy loams, generally red and have moderate fertility. As per 2001 census (Anonymous 2001), the population of Ukhrul district is 1,40,946. Agriculture is the mainstay of these people and *Tangkhul* people had been practicing terrace and Jhuming cultivation since their ancient times. They cultivate mainly rice and maize. Daily food items are obtained from their kitchen gardens. Most of the *Tangkhul* families have a small plot surrounding their houses ranging approximately from 6 x 6 m to 20 x 20 m where they grow different types of kitchen-garden plants. Traditionally, the seeds of all major and minor crops are sown in well prepared field or kitchen garden during the month of *Marun* (February) or early *Mayo* (March) depending upon the varieties of crops like beans, gourd, cucurbits etc. In addition, different vegetables like cabbage, potato, mustard, yam, etc, are also grown in the small plots, generally in line sowing. Fruits like papaya, guava, banana, mango, peach, etc, are planted around the bunds as living fence. Some local plants like *Clerodendrum sp.*, *Justicia sp.*, *Oroxylum sp.* which have high medicinal values are also domesticated in their kitchen gardens. These gardens form integral part of their habitat and are essential for maintaining their families. Therefore, it is important to preserve the traditional method of maintaining kitchen garden plants. The present study was aimed to obtain ethnobotanical information with special reference to kitchen garden plants.

METHODOLOGY

The present study was based on frequent household surveys at two villages *Phalang* and *Phungyar* of Phungyar phaisat sub-division of Ukhrul district during January 2008 to December 2009. Semi structure questionnaires regarding the information of garden crops found at the informant's house was conducted. A total of 58 household of *Tangkhul* tribes were surveyed for gathering information on kitchen garden plants traditionally used by them as foodstuffs, fruits, medicinal plants and spices. Information regarding vernacular name, mode of use and part used are also collected. 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), Kanjilal *et al.* (1934 – 1940), Singh & Arora, (1978). 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 useful plants recorded during the present survey. These are enumerated below alphabetically in Table 1 with their scientific names along with family and references to voucher specimens followed by the vernacular names, habit, useful plant part and uses by *Tangkhul* Nagas.

Table 1: Kitchen garden plants of *Tangkhul* tribe of Ukhrul district and their uses

Plant name [Family]; Voucher specimen	Vernacular name	Habit	Useful parts	Usefulness
<i>Allium cepa</i> Linnaeus [Alliaceae]; <i>Sumi- 510</i>	<i>Tarui</i>	Herb	Leaves, bulb.	As spice
<i>Allium hookeri</i> Thwaites [Alliaceae]; <i>Sumi- 515</i>	<i>Namrei</i>	Herb	Whole plant	Eaten as vegetable and spice
<i>Allium tuberosum</i> Rottler <i>ex</i> Sprengel [Alliaceae]; <i>Sumi-507</i>	<i>Namra</i>	Herb	Whole plant	Eaten as vegetable

Plant name [Family]; Voucher specimen	Vernacular name	Habit	Useful parts	Usefulness
<i>Allium sativum</i> Linnaeus [Alliaceae]; <i>Sumi-502</i>	<i>Hanam</i>	Herb	Leaves, bulb.	As spice. Bulb used in ear problem
<i>Allium chinense</i> G. Don. [Alliaceae]; <i>Sumi-541</i>	<i>Somri</i>	Herb	Leaves, bulb.	Eaten as vegetable
<i>Apium graveolens</i> Linnaeus [Apiaceae]; <i>Sumi-903</i>	<i>Sirai kahui</i>	Herb	Whole plant	Eaten as vegetables
<i>Alocasia</i> sp [Araceae]; <i>Sumi-922</i>	<i>Hanghorpai</i>	Shrub	Corn	Eaten as vegetables
<i>Alpinia galanga</i> (Linnaeus) Willdenow [Zingiberaceae]; <i>Sumi-543</i>	<i>Nonishon</i>	Shrub	Shoots, tender leaves, rhizome	Eaten as vegetables. Rhizome used in liver complaints
<i>Benincasa hispida</i> (Thunberg) Cogniaux [Cucurbitaceae]; <i>Sumi-916</i>	<i>Katsenghei</i>	Climber	Fruit	Eaten as vegetables, used in stomach problem
<i>Brassica napus</i> Linnaeus [Brassicaceae]; <i>Sumi-920</i>	<i>Kayanghan</i>	Herb	Leave, seeds	Eaten as vegetables
<i>Brassica oleracea</i> Linnaeus [Brassicaceae]; <i>Sumi-921</i>	<i>Gobi</i>	Herb	Whole plant	Eaten as vegetables
<i>Cajanus cajan</i> (Linnaeus) Millspaugh [Fabaceae]; <i>Sumi-580</i>	<i>Khaithei</i>	Shrub	Fruit	Eaten as vegetables
<i>Carica papaya</i> Linnaeus [Caricaceae]; <i>Sumi-546</i>	<i>Awathabi</i>	shrub	Fruit	Eaten raw
<i>Capsicum annuum</i> Linnaeus [Solanaceae]; <i>Sumi-586</i>	<i>Kasathei</i>	Under shrub	Fruit.	As spice
<i>Capsicum chinense</i> Jacquin [Solanaceae]; <i>Sumi-588</i>	<i>Sivathei</i>	Shrub	Fruit	As spice
<i>Centella asiatica</i> (Linnaeus) Urban [Apiaceae]; <i>Sumi-924</i>	<i>Kongrihan</i>	Herb	Whole plant	Eaten as vegetables, used in stomach ulcers, dysentery
<i>Cinnamomum tamala</i> Nees [Lauraceae]; <i>Sumi-907</i>	<i>Sakomna</i>	Tree	Leaves	As spice
<i>Cinnamomum zeylanicum</i> Blume [Lauraceae]; <i>Sumi-520</i>	<i>Sakomthing</i>	Tree	Fruit, flower, bark	As spice
<i>Citrus aurantium</i> Linnaeus [Rutaceae]; <i>Sumi-909</i>	<i>Komla</i>	Tree	Fruit	Eaten raw
<i>Citrus maxima</i> (Burman) Merrill [Rutaceae]; <i>Sumi-912</i>	<i>Nobab</i>	Tree	Fruit	Eaten raw
<i>Clerodendrum colebrookianum</i> Walpers [Verbenaceae]; <i>Sumi-548</i>	<i>Narihan</i>	Shrub	Leaves	Eaten as vegetable, used in B.P. problems
<i>Colocasia gigantea</i> (Blume) Hooker f. [Araceae]; <i>Sumi-573</i>	<i>Kharinghor</i>	Herb	Whole plant	Eaten as vegetables
<i>Coriandrum sativum</i> Linnaeus [Apiaceae]; <i>Sumi-568</i>	<i>Sachi kom</i>	Herb	Whole plant	As spice
<i>Cucurbita maxima</i> Duchesne [Cucurbitaceae]; <i>Sumi-911</i>	<i>Khaimaithei</i>	Climber	Fruit	Eaten as vegetables
<i>Cucurma longa</i> Linnaeus [Zingiberaceae]; <i>Sumi-902</i>	<i>Yaingang</i>	Herb	Rhizome	-As spice
<i>Cyphomandra betacea</i> (Cavan) Sendt. [Solanaceae]; <i>Sumi-917</i>	<i>Mao Khamathei</i>	Tree	Fruit	Eaten as vegetables

Plant name [Family]; Voucher specimen	Vernacular name	Habit	Useful parts	Usefulness
<i>Dioscorea glabra</i> Roxburgh [Dioscoreaceae]; Sumi-576	Hapai	Climber	Tuberous root	Eaten as vegetables
<i>Elaeocarpus floribundus</i> Blume [Oleaceae]; Sumi-906	Fashongthei	Tree	Fruit	Eaten raw
<i>Elsholtzia blanda</i> Bentham [Lamiaceae];	Ngarikna	Shrub	Leaves, Inflorescence	As spice
<i>Embllica officinalis</i> Gaertner [Euphorbiaceae]; Sumi-514	Shakshathei	Tree	Fruit	Eaten raw, used in Diabetes
<i>Houttuynia cordata</i> Thunberg [Saururaceae]; Sumi-555	Ngayung	Herb	Whole plant	As spice
<i>Ipomoea batatas</i> Linnaeus [Convolvulaceae]; Sumi-560	Meiteipai	Climber	Underground root stock	Eaten as vegetable
<i>Justicia adhatoda</i> Linnaeus [Acanthaceae]; Sumi-918	Sipchang	Shrub	Leaves, inflorescence	Eaten as vegetables, leaves used in cough, bronchitis
<i>Lagenaria siceraria</i> (Molina) Standley [Cucurbitaceae]; Sumi-905	Karopthei	Climber	Fruit	Eaten as vegetables, mature fruit used as container
<i>Mangifera indica</i> Linnaeus [Anacardiaceae]; Sumi-928	Theinouthai	Tree	Fruit	Eaten raw
<i>Manihot esculenta</i> Crantz [Euphorbiaceae]; Sumi-542	Thingpai	Shrub	Underground rootstock	Eaten as vegetables
<i>Mentha arvensis</i> Linnaeus [Lamiaceae]; Sumi-547	Suiruihan	Herb	Whole plant	As spice, used in dysentery
<i>Musa paradisiaca</i> Linnaeus [Musaceae]; Sumi- 516	Nana	Herb	Stem, inflorescence	Eaten as vegetables
<i>Ocimum americanum</i> Linnaeus [Lamiaceae]; Sumi-554	Sari	Under shrub	Leaves, inflorescence	As spice, used in cough, dysentery
<i>Oenanthe javanica</i> Blume [Apiaceae]; Sumi-589	Hanchamhan	Herb	Leaves	Used in salad
<i>Oroxylum indicum</i> Ventenat [Bignoniaceae]; Sumi-913	Phong	Tree	Fruit, young leaves, winged seed	Eaten as vegetables, used for medicinal, decorative items
<i>Parkia javanica</i> Merrill [Mimosaceae]; Sumi- 527	Yongchak	Tree	Fruit, flower	Eaten as vegetables
<i>Passiflora edulis</i> Sims [Passifloraceae]; Sumi-550	Sitapor	Climber	Fruit	Eaten raw
<i>Phlogocanthus thyriflorus</i> Nees [Acanthaceae]; Sumi - 512	Sipchang	Shrub	Leaves, inflorescence	Eaten as vegetables, leaves used against cough, fever

Plant name [Family]; Voucher specimen	Vernacular name	Habit	Useful parts	Usefulness
<i>Pisum sativum</i> Linnaeus [Fabaceae]; <i>Sumi- 531</i>	<i>Hawai tharak</i>	Climber	Hawai tharak	Eaten as vegetables
<i>Prunus persica</i> (Linnaeus) Batsch [Rosaceae]; <i>Sumi-929</i>	<i>Mayangthei</i>	Tree	Fruit	Eaten raw
<i>Prunus domestica</i> Linnaeus [Rosaceae]; <i>Sumi-900</i>	<i>Heikhathei</i>	Tree	Fruit	Eaten raw
<i>Psidium guajava</i> Linnaeus [Myrtaceae]; <i>Sumi- 531</i>	<i>Pungdonrong</i>	Tree	Fruit	Eaten raw
<i>Pyrus communis</i> Linnaeus [Rosaceae]; <i>Sumi-904</i>	<i>Kapaithei</i>	Tree	Fruit	Eaten raw
<i>Sechium edule</i> Swartz [Cucurbitaceae]; <i>Sumi-950</i>	<i>Squash</i>	Climber	Fruit	Eaten as vegetables
<i>Solanum tuberosum</i> Linnaeus [Solanaceae]; <i>Sumi-544</i>	<i>Mayangthei</i>	Herb	Tuber	Eaten as vegetable
<i>Solanum torvum</i> Swartz [Solanaceae]; <i>Sumi-545</i>	<i>Kapkhathei</i>	Under- shrub	Fruit	Eaten as vegetables, used against cough
<i>Spondias mangifera</i> Willdenow [Anacardiaceae]; <i>Sumi-549</i>	<i>Heining</i>	Tree	Fruit	Eaten raw
<i>Zanthoxylum acanthopodium</i> DC. [Rutaceae]; <i>Sumi-600</i>	<i>Mangnan- gthei</i>	Shrub	Fruit, youngtwig, leaf, inflorescence	As spice, leaves used against throat complaints
<i>Zingiber officinale</i> Roscoe [Zingiberaceae]; <i>Sumi- 540</i>	<i>Hui</i>	Herb	Rhizome	As spice, used against cough, asthma.

DISCUSSION

During the current survey among the *Tangkhal* people for the plants grown in their kitchen gardens recorded 55 species belonging to 41 genera under 28 families. Out of these 32.7 % (18 species) were herbs, 27.27 % (15 species) trees, 20 % (11 species) shrubs, 14.5 % (8 climbers) climbers and 5.45 % (3 species) were undershrubs.

Among the vegetables *Brassica oleraceae*, *Sechium edule* and *Solanum tuberosum* are planted in large amount as it is used in multifarious food stuffs items and are in great demand in Imphal valley market for their delicious taste. Hence, it serves as one of the main source of income for the *Tangkhal* tribe usually sold at the rate of Rs. 15 – 25 /kg. Maximum of the vegetables are eaten boiled or raw and only few are taken as fried. Some very commonly used medicinal plants like *Phlogocanthus thyrsiflorus*, *Justicia adhatoda*, and *Clerodendrum colebrookianum*, are in great demand by all the communities of Manipur are also domesticated in the kitchen garden of *Tangkhal* tribe. Among the spices *Zanthoxylum acanthopodium*, *Houttuynia cordata*, *Alpinia galanga* etc, which are purely wild are now domesticated in kitchen gardens, because of their utility and demand in the market. Fruit plants like *Phyllanthus emblica*, *Prunus domestica* and *Prunus cerasoides*, are planted for daily consumption as well as raw material for the preparation of traditional fruit beer. It was observed that most of the *Tangkhal* people have a well developed tradition of maintaining kitchen gardens which provides them with their daily necessities and also play a significant role in the economy of this community.

This whole study records only 55 plants commonly grown in their kitchen garden as it is preliminary survey. The main significance of the kitchen garden lies in the fact that all the *Tangkhul* tribe have a common food habit depending much on the fresh vegetables, fruits and tubers.

Acknowledgements

The authors are greatly indebted to the *Tangkhul* people of *Phalang* and *Phungyar* of Phungyar phaisat sub division of Ukhrul district for revealing their valuable information during our field survey.

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