

Traditional Conservation Practices in Hailakandi District, Barak Valley of Assam, India

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Abstract

In the present paper a total of 70 home gardens plants belonging to 38 families have been presented along with their locality, habitat, mode of propagation and uses have been reported. Majority of these plants are traditionally conserved to use as medicine, edible fruits, timber and ornamental garden plants.

Key words: Traditional conservation, Home garden, Hailakandi, uses

INTRODUCTION

The district Hailakandi is situated in the Barak Valley of Assam and covers an area of 1327 sq km. It falls between 24°8" and 25°8" N latitude and 92°15" & 93°15" E longitude and an altitude of about 39 - 40 meter above MSL. The district is a heterogeneous land, composed of hills, low lands and plains. The district is humid and sub-tropical in nature and cold climate in winter. Rainy season generally starts from April and continues till September. More than 70% of total rainfall is received during May to August and December was the coolest month and July is the warmest month. Maximum temperature ranged from 19.60°C to 33.52°C and 19.04°C to 35.5°C during 2005 – 2006 and 2006 – 2007, minimum temperature ranged from 12.18°C to 27.59°C and 10.78°C to 27.21°C during 2005 – 2006 and 2006 – 2007 respectively. The average annual rainfall of the district is below 500 mm, mean annual relative humidity is 78 – 85%. The sunshine hour was relatively low during the months of July to September. The physicochemical characteristics of soil are sandy-loam, acidic, rich in organic carbon, low in nitrogen and medium in phosphorus content. The soil pH is ranging between 5.0 and 5.6.

Kanjilal *et al* (1934 – 1940) had reported the predominant flora of Barak Valley. Reports on the status of medicinal plants of Barak valley, Assam have been studied by Saha & Dutta (2001). Some ethnobotanical studies on north east tribes in relation to the medicinal plants have already been emphasized by several workers (Borthakur 1976, 1981, 1992; Bhattacharjee 1980; Dutta & Dutta 2001). However, very little work has been done on the home gardens of Barak valley, although its importance has been highlighted by different workers (Gliessmen 1989; Saha & Dutta 2001). Therefore, in the present work an attempt has been made to explore traditional conservation of medicinal plants in home gardens of Hailakandi district, Barak valley of Assam and their uses.

MATERIALS AND METHODS

Different areas in the Hailakandi district, Barak valley of Assam were surveyed during 2005 – 2009. The places include viz. Algapur, Chandipur, Pedalapunji, Sirispore, Bhatirkupa, Ujankupha, Nitainagar, Katakhal, Chiporsangan, Mohanpur, Ghulalia, Narainpur, Lala, Tantu, Nischintapur, Ainakhal, Rajyeshwarpur, Sudarshanpur, Bandukmara, Kalacherra, Samarikuna, Sonapur, Borokhai, Rupacherra, Rongpur, Dholai-molai, Matijuri, Sahabad, Krishnapur, Lalacherra, Katlicherra,

Manipur, Balaipur, Jamira, Gharmura, etc. Plants were collected covering almost all the seasons of the year. In the present investigation botanical name, vernacular name, propagation methods and diseases, ailment cured and related uses of different plant species were recorded from the surveyed home gardens. All the species have been put under the corresponding families which have been arranged alphabetically in a tabular form. Collected specimens were made into mounted Herbarium sheets following Jain & Rao (1977). For authentic identification, a number of floras have been consulted, specially *Flora of British India*, (Hooker 1872 – 1897), *Flora of Assam* vols. I – IV (Kanjilal *et al* 1934 – 1940) and *Flora of Assam* vol. V (Bor 1940), *Flora of Jowai* (Balakrishnan 1981 & 1983), *Flora of Tripura State* (Deb 1981, 1983). Voucher specimens have been cited for all the species enumerated in the table and kept under first author's possession for future studies and will be deposited in the Herbarium of Botany Department, Gauhati University in due course of time.

RESULTS

All the recorded plants are presented below in tabular form:

Scientific Name [Family]; Exsiccatae	Local name	Locality	Habit & propagation	Diseases/ ailments cured and related uses
<i>Adhatoda vasica</i> Nees [Acanthaceae] BC 681	<i>Vasaka</i>	Chandipur	Shrub; seed, cuttingd	Leaf extract used in jaundice; with honey for cough & asthma
<i>Aegle marmelos</i> (Linnaeus) Correa [Rutaceae] TUK723	<i>Bel</i>	Chandipur	Tree; seed	Leaf juice with <i>Piper longum</i> fruits taken orally against cold cough; fruits edible
<i>Aloe barbadensis</i> W. Miller [Liliaceae] TUK 578	<i>Ghritakum- ari</i>	Chandipur	Herb; suckers	Leaf juice useful in leucorrhoea, hair growth, tuberculosis
<i>Ananas comosus</i> (Linnaeus) Merrill [Bromeliaceae] BC188	<i>Anaras</i>	Jamira	Herb; bulbil/ budding	Fruits edible; young leaf juice taken orally against worm
<i>Annona squamosa</i> Linnaeus [Annonaceae] TUK 308	<i>Saripa/ Sitaphal</i>	Ujankupa	Shrub; seeds	Fruits edible; leaves used as insecticide
<i>Areca catechu</i> Linnaeus [Arecaceae] BC 106	<i>Supari</i>	Ujankupa	Tall palm; fruits	Fruits edible
<i>Artocarpus heterophyllus</i> Lamarck [Moraceae] TUK599	<i>Katal</i>	Gharmura	Tree; seeds	Fruits edible; timber for making furniture
<i>Anthocephalus indicus</i> A. Richard [Rubiaceae] TUK 568	<i>Kadamba</i>	Manipur	Large tree; seeds	Bark extract used as tonic
<i>Averrhoa carambola</i> Linnaeus [Averrhoaceae] BC 210	<i>Kamranga</i>	Rongpur	Small tree; seeds	Fruits used in jaundice
<i>Azadiracta indica</i> A. Jussieu [Meliaceae] BC 248	<i>Nim</i>	Algapur	Large tree; seeds	Leaves edible, used in skin diseases; seed oil for abortion; leaf extract as bio-pesticide
<i>Bambusa tulda</i> Roxburgh [Poaceae] TUK 378	<i>Jai</i>	Rongpur	Medium bamboo; seed, rhizome	Culms used in numerous household activities
<i>Borassus flabellifer</i> Linnaeus [Arecaceae] TUK 675	<i>Tal</i>	Manipur	Large palm; seed	Fruits edible
<i>Calotropis gigantea</i> (Linnaeus) R. Brown ex Aiton [Asclepiadaceae]; TUK 453	<i>Akand</i>	Chandipur	Shrub; seeds	Leaves used in rheumatic pain
<i>Capsicum frutescens</i> Linnaeus [Solanaceae] TUK 710	<i>Morich</i>	Matijuri	Shrub; seeds	Used raw or cooked as spice; important ingredient in salads

Scientific Name [Family]; Exsiccatae	Local name	Locality	Habit & propagation	Diseases/ ailments cured and related uses
<i>Catharanthus roseus</i> (Linnaeus) G. Don [Apocynaceae]; BC 211	<i>Nayantara</i>	Chandipur	Shrub; seeds	Leaves used in diabetes & fever
<i>Cinnamomum tomala</i> Nees & Ebermaier [Lauraceae]; BC 230	<i>Tejpata</i>	Gharmura	Evergreen tree; seeds	Leaves as condiments; leaf juice useful in cough
<i>Citrus reticulata</i> Balanco [Rutaceae]; TUK 715	<i>Komola</i>	Gharmura	Small tree; seeds	Used as raw fruit
<i>Clitoria ternatea</i> Linnaeus [Fabaceae]; TUK 497	<i>Aparajita</i>	Hailaka- ndi	Climber; seeds	Leaves used in jaundice; also against impotency
<i>Cocos nucifera</i> Linnaeus [Arecaceae]; TUK 678	<i>Narikal</i>	Matijuri	Tall palm; fruits	Fruits edible
<i>Dracaena terniflora</i> Jack [Liliaceae]; BC 275	<i>Pathabahar/ Dracaena</i>	Matijuri	1-2 m high; stem cutting	Ornamental and for fencing
<i>Costus speciosus</i> (Koenig) Smith [Zingiberaceae]; TUK 890	<i>Keu</i>	Banduk- mara	Herb; rhizome	Whole plant is medicinal
<i>Curcuma amada</i> Roxburgh [Zingiberaceae]; TUK 876	<i>Amada</i>	Lalacherra	Herb; rhizome	Rhizome edible and a spice
<i>Curcuma aromatica</i> Salisbury [Zingiberaceae]; TUK 877	<i>Banhalud</i>	Rupache- rra garden	Herb; rhizome	Rhizome medicinal
<i>Curcuma longa</i> Linnaeus [Zingiberaceae]; TUK 878	<i>Halud</i>	Rupache- rra	Herb; rhizome	Rhizome as spice; used against liver trouble and for healing of wound
<i>Datura metel</i> Linnaeus [Solanaceae]; TUK 718	<i>Dhutra</i>	Borokhai	Under-shrub; seeds	Dried leaves used against skin diseases
<i>Datura stramonium</i> Linnaeus [Solanaceae]; TUK 715	<i>Dhutra</i>	Banduk- mara	Under-shrub; seed	Leaves used against asthma & skin diseases
<i>Dendrocalamus strictus</i> Nees [Poaceae]; TUK 380	<i>Barua</i>	Matijuri	Medium bamboo; rhizome	Culms used in fencing and as posts in huts/ houses
<i>Duranta repens</i> Linnaeus [Verbenaceae]; BC 386	<i>Duranta</i>	Sonapur	Shrub; stem cuttings	Used as hedge plant, ornamental
<i>Emblica officinalis</i> Linnaeus [Euphorbiaceae]; BC 891	<i>Amlaki</i>	Krishna- pur	Deciduous tree; seeds	Fruits edible; leaves & fruits used in diabetes
<i>Euphorbia nerifolia</i> Linnaeus [Euphorbiaceae]; BC 899	<i>Hiju</i>	Lalacherra tea estate	Shrub; stem cuttings	A hedge plant; leaves used against cough
<i>Gardenia jasminoides</i> Ellis [Rubiaceae]; BC 544	<i>Gandharaj/ Tagar</i>	Nitainagar	Bushy shrub; stem cuttings	Flowering ornamental
<i>Glycosmis pentaphylla</i> (Retzius) Correa [Rutaceae]; TUK 725	<i>Bonjamir</i>	Jamira	Shrub; seeds	Berries edible
<i>Hibiscus mutabilis</i> Linnaeus [Malvaceae]; BC 560	<i>Sthalpadma</i>	Chandipur	Shrub; stem cuttings	Garden plant; flowers edible
<i>Hibiscus rosa-sinensis</i> Linnaeus [Malvaceae] BC 562	<i>Rakta jaba</i>	Lakshirb- ond	Shrub; stem cuttings	Paste of flower applied externally to fresh cuts & wounds; an ornamental
<i>Hibiscus schizopetalum</i> Hooker f. [Malvaceae]; BC 564	<i>Chichrajaba</i>	Rupache- rra	Shrub; stem cuttings	Flowering ornamental
<i>Homalomena aromatica</i> (Roxburgh) Schott [Araceae]; TUK 018	<i>Gandikochu/ Gandkochu</i>	Sudarsha- npur	Herb; rhizome	Commercially viable aromatic; petioles taken as vegetable for purification of blood & healing of wound caused during child birth
<i>Hyptis suaveolens</i> Poiret [Lamiaceae]; TUK 600	<i>Nagatulsi/ Thukma</i>	Jamira	Herb; seeds	Used against stomach trouble & constipation
<i>Ixora coccinea</i> Linnaeus [Rubiaceae]; BC 548	<i>Ranjan</i>	Hailaka- ndi	Shrub; stem cuttings	Hedge & ornamental garden plant
<i>Justicia gendarussa</i> Burman f [Acanthaceae]; BC690	<i>Jagat madan</i>	Narainpur	Shrub; stem cuttings	Hedge plant

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<i>Lawsonia innermis</i> Linnaeus [Lythraceae]; TUK 762	<i>Henna/Mehe ndi</i>	Lala	Shrub; stem cuttings	Leaf paste used as for coloring of hair and decorating palm top; used against hypertension
<i>Litchi chinensis</i> Sonnerat [Sapindaceae]; TUK 1001	<i>Litchu</i>	Kuchila	Tree; seed, stem cuttings	Fruits edible
<i>Mangifera indica</i> Linnaeus [Anacardiaceae]; TUK 899	<i>Am</i>	Matijuri	Tree; seeds	Fruits edible
<i>Mentha arvensis</i> Linnaeus [Lamiaceae]; TUK 601	<i>Pudina</i>	Sonapur	Herb; seeds	Leaf juice useful in stomach trouble
<i>Mentha piperita</i> Linnaeus [Lamiaceae]; TUK 602	<i>Pudina</i>	Kuchila	Herb; seeds	Leaves used in chicken or fish preparations
<i>Michelia champaca</i> Linnaeus [Magnoliaceae]; TUK 717	<i>Champa</i>	Shabad	Tall tree; seeds	Timber yielding with fragrant flowers
<i>Moringa oleifera</i> Lamarck [Moringaceae]; BC 333	<i>Sajna</i>	Kuchila	Small tree; seeds	Fruits used as vegetable; bark used against rheumatic pain
<i>Murraya koenigii</i> (Linnaeus) Sprengel [Rutaceae]; TUK 720	<i>Narasing</i>	Chandipur	Large shrub; seeds	Leaves added in curry as aromatic condiment
<i>Murraya paniculata</i> (Linnaeus) W. Jack [Rutaceae]; TUK 714	<i>Kamini</i>	Sirispur	Shrub or small tree; seed, cuttings	Ornamental garden plant.
<i>Musa paradisiaca</i> Linnaeus [Musaceae]; BC 132	<i>Kola</i>	Jamira	Tall herb; suckers	Fruits edible; unripe fruits used in dysentery & diarrhea
<i>Nerium indicum</i> W. Miller [Apocynaceae]; BC 216	<i>Karobi</i>	Nayapara	Large shrub; seeds	Flowering ornamental; stem juice used in skin diseases
<i>Nyctanthes arbortristis</i> Linnaeus [Oleaceae]; TUK 818	<i>Sefali</i>	Kuchilla	Small tree; seeds	Leaves edible; leaf extract taken orally against chronic fever & liver trouble
<i>Ocimum sanctum</i> Linnaeus [Lamiaceae]; TUK 604	<i>Tulshi</i>	Lakshirb- ond	Herb; seeds	Leaf juice with honey taken orally against cough & cold
<i>Opuntia dillenii</i> Haworth [Cactaceae]; BC 319	<i>Fanimansha</i>	Borokhai	Spiny shrub; stem cuttings	Paste of phylloclade useful in burns
<i>Piper nigrum</i> Linnaeus [Piperaceae]; TUK 444	<i>Gulmarich</i>	Gharmura	Climber; stem cuttings	Powdered seed with palm- candy taken orally against cough
<i>Plumeria acuminata</i> Aiton [Apocyanaceae] BC 218	<i>Gulich</i>	Nayapara	Small tree; stem cuttings	Flowering ornamental
<i>Psidium guajava</i> Linnaeus [Myrtaceae]; BC 266	<i>Piyara</i>	Kuchila	Small tree; seeds	Fruits edible; juice of young leaf taken orally against worms
<i>Punica granatum</i> Linnaeus [Punicaceae]; BC 287	<i>Dalim</i>	Shahbad	Shrub; seeds	Fruits edible; leaf juice taken orally against jaundice
<i>Rhynchostylis retusa</i> Blume [Orchidaceae]; TUK 099	<i>Khanyaphul</i>	Sirispur	Epiphyte herb; seeds	Flowering ornamental
<i>Ricinus communis</i> Linnaeus [Euphorbiaceae]; BC 893	<i>Barela</i>	Aynakhal	Shrub; seeds	Leaves used against bleeding piles
<i>Shorea robusta</i> Gaertner f [Dipterocarpaceae]; TUK 908	<i>Sal</i>	Gharmura	Tree; seeds	Durable wood of multipurpose use
<i>Syzygium cumini</i> (Linnaeus) Skeels [Myrtaceae]; BC 268	<i>Kaloram</i>	Jamira	Tree; seeds	Leaf & seed juice taken orally against diabetes; fruits edible
<i>Syzygium jambos</i> (Linnaeus) Alston [Myrtaceae]; BC 270	<i>Gulabjam</i>	Shahbad	Tree; seeds	Fruits edible
<i>Tabernaemontana divaricata</i> R. Brown [Apocyanaceae]; BC 222	<i>Jongli togor</i>	Barbond	Shrub; seeds, cuttings	Bark paste useful in burns
<i>Tectona grandis</i> Linnaeus f. [Verbenaceae]; BC 394	<i>Segun</i>	Matijuri	Large tree; seeds	High quality wood for multipurpose use

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<i>Terminalia arjuna</i> (Roxburgh) Weight & Arnott [Combretaceae]; TUK 1292	<i>Arjun</i>	Lala	Large tree; seeds	Bark extract with milk taken orally to get relief from heart troubles
<i>Terminalia bellirica</i> Roxburgh [Combretaceae]; TUK 1297	<i>Bohera</i>	Chandipur	Tree; seeds	Fruits used against piles and diarrhea
<i>Terminalia chebulla</i> Retzius [Combretaceae]; TUK 1294	<i>Haritaki</i>	Rongpur	Tree; seeds	Paste of fruit made in iron pan applied externally promote hair growth
<i>Zea mays</i> Linnaeus [Poaceae] TUK 382	<i>Makoi/ Bhutta</i>	Bilaipur	Annual; cypsela	Grains edible
<i>Zizyphus mauritiana</i> Lamarck [Rhamnaceae]; TUK 1154	<i>Boroi/ Kul</i>	Chandipur	Tree; seeds	Fruits edible; bark medicinally useful

DISCUSSION

The study revealed that the homestead gardens in Hailakandi district of Assam are rich in various types of useful plants. Several interesting observations were made during the course of the survey. Several plants used by the tribe have already been reported to have medicinal value. Again some plants are used for the same purpose as used by certain other tribes of North east India, which have already been reported by several workers (Gogoi & Baishya 1984; Borthakur 1992; Mazumder *et al* 1978; Khan *et al* 2010). The various communities of the district are dependent on local plants for food, medicine, house construction etc. In ancient time, human beings were not permanently settled in one place; they used to move from one place to another in search of food and shelter. The discovery of agriculture had changed their life style. And accordingly men started to settle down in one particular place. Even today in North east India some of the tribes don't have their permanent settlement. In south Assam, *Riang* tribes are not properly settled in one place, they move from one place to another for shifting cultivation, as it is their only source of livelihood. When men permanently settled down they started maintaining useful plants in their house complexes. This is what is known as home garden, which has been highlighted in this paper.

In the present work it is revealed that almost each and every family maintain some of the plants *viz.* *Areca catechu*, *Mangifera indica*, *Aegle marmelos*, *Musa paradisiaca*, *Cocos nucifera*, *Azadirachta indica*, *Psidium guajava*, *Ocimum sanctum*, *Hyptis suaveolens*, *Lawsonia innermis*, *Capsicum frutescens*, *Hibiscus rosa-sinensis*, *Clitorea ternatea*, etc. which are important for their day to day life for fruits, medicine, spices, ornamental garden plants etc. However, the plant diversity is assumed to be maximum in rural home gardens compared to the urban areas. Plants like *Emblica officinalis*, *Syzygium cuminii*, *Aegle marmelos* etc are commonly used for diabetes and their fruits are also edible. In rural areas at least few species of Bamboo i.e. *Bambusa tulda*, *Dendrocalamus strictus* etc and many species of medicinal plants used by them are conserved traditionally.

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