

## **A Survey of Medicinal Plants as Regards to their Uses by the Tribal Practitioners in the Chittagong Hill Tracts of Bangladesh to Check Various Diseases**

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More than seven hundred of medicinal plants have so far been enlisted as growing in Bangladesh (Yousuf *et. al.*, 2009). This number of indigenous medicinal plants is increasing day by day in this country. Most of these plants are used by the rural practitioner, especially tribal practitioner of Chittagong Hill Tracts (CHTs) as an efficacious remedy to treat various ailments. The present study reveals that the tribal practitioners of Chittagong Hill Tracts have applied 138 plant species belonging to 54 families for the treatment of many complicated diseases such as Jaundice, Rheumatism, Skin diseases, Diarrhoea, Dysentery, Asthma, Malaria, Stomach pain, Gonorrhoea, Diabetes, Urinary diseases, Liver diseases, Pneumonia, Menstrual diseases, Heart diseases, etc. Short diagnostic description of these plants is described.

**Keywords:** Tribal practitioners, Chittagong Hill Tracts, Medicinal plants, Indigenous, Ailments, Interview, Bangladesh.

### **Introduction**

The Chittagong Hill Tracts is situated in the south-eastern part of Bangladesh (between 21°25'N to 23°45'N latitude and 91°25'E to 92°50'E longitude), adjoining boundaries with the Indian state of Tripura on the north, Mizoram on the east, Myanmar on the south and southeast and Chittagong on the west. The physical area of Chittagong Hill Tracts is 13295 sq. km, constituting 10% of the whole land area of Bangladesh.

The region consists of three districts viz. Rangamati, Bandarban and Khagrachari. At least 13 Tribes (Chakma, Marma, Tripura, Tanchangya, Murang, Pankhua, Khumi, Lushi, Chak, Bawm, Khiyang, Riyang and Ushui) are inhabited in this region (Khaisa, 1999). Their language, culture, religion and custom are different from Bengali (Bengali speaking people of Bangladesh). These tribal communities are still dependent on plant resources for treating various diseases. The plants and plant parts are used by the tribal people in multiple forms such as infusion, decoction, pill, powder, paste, juice, poultice, extract etc.

### Methodology

The information was gathered from individual places of three districts of Chittagong Hill Tracts by taking interviews with tribal healers, elderly men and women. For the reconfirmation, the interviews were repeated with another people in same places and same people or practitioners several times. The interview was taken from more than 60 persons including tribal healers and others. All the plants were collected from CHTs and detailed information such as plant parts used, diseases, time of plant collection, dosage, plant preparation, etc. was taken with the help of tribal practitioners. The plant specimens were identified and vouchers were reserved at BCSIR Laboratories herbarium in Chittagong.

**Results:** The following description regarding medicinal plants is given based on tribal concept for the treatment of different diseases. Family names are decorated according to alphabetic order with Botanical names, Bengali [B], English [E] and other Tribal names viz. Chakma [C], Marma [M], Tanchangya [T], Murang [Mu], Mogh [Mo], Bawm [Ba] and Tripura [Tri].

#### 1) ACANTHACEAE

***Justicia gendarussa*** Burm: Jagatmadan/Bishalla [B]; shrubby plant.

**Uses:** In Khagrachari, decoction of leaves is used to treat chest pain, rheumatism. Oil of the leaves is also applied for eczema.

***Justicia simplex*** Don.: Bashoke pata [C]; herb

**Uses:** Leaf paste mixed with butter is rubbed on to the affected area for the treatment of chest pain and rheumatism.

***Thunbergia grandiflora*** Roxb.: Nillata [B]; climber

**Uses:** Watery sap of the stem is used as eye drops for treating eye diseases. An infusion of the leaf is taken to get relief from the stone in urinary bladder.

**2) ACORACEAE**

*Acorus calamus* L.: Bach [B], Sweet flag [E]; herb

**Uses:** Rhizome is taken in powder form for pneumonia in Khagrachari.

**3) AMARANTHACEAE**

*Achyranthes aspera* L.: Apang [B], Red Chaff Tree [E]; perennial herb.

**Uses:** Leaf juice is taken by Marma tribe for hysteria. It is also taken by Chakma tribe to treat stomach pain. Root extract is applied for tumor and vomiting.

*Alternanthera sessilis* (L.) R. Br.: Chanchi [B]; perennial herb.

**Uses:** Infusion of the whole plant is given in Khagrachari for intestinal ulcer.

*Celosia argentea* L.: Shet-murga [B], Quail grass [E]; annual herb.

**Uses:** In Khagrachari, juice of the whole plant is taken to get relief from menstrual disorder.

*Amaranthus spinosus* L.: Katanotey [B], Hanuhuya [M], Prickly amaranth [E]; herb.

**Uses:** A decoction of the whole plant is given by Chakma to treat malarial fever.

**4) AMARYLLIDACEAE**

*Crinum asiaticum* L.: Sukdarshan [B], Poison bulb [E]; perennial herb.

**Uses:** Root paste is applied to the affected area by the Chakma for treating boils.

*Sensevieria roxburghiana* Schult.: Murba [B], Indian bowstring hemp [E]; perennial herb.

**Uses:** Leaf juice is used by Marma to cure otitis.

**5) APIACEAE**

*Centella asiatica* (L.) Urban: Thankuni [B], Indian pennywort [E]; herb.

**Uses:** Juice of whole plant is taken by Marma to treat blood dysentery.

**6) APOCYNACEAE**

***Catharanthus roseus*** (L.) G. Don: Nayantara [B], Periwinkle [E]; sub-shrub.

**Uses:** Juice of the leaf and latex is used in Khagrachari for blood dysentery.

***Holarrhena pubescence*** (Buch-Hem) Wall: Kurchi [B & E]; shrub.

**Uses:** Decoction of bark is taken by Marma for threadworms. An infusion of the bark is used by Chakma for jaundice. Moreover, powdered root is given by Tanchangya to alleviate diarrhoea.

***Ichnocarpus frutescens*** (L.) R. Br.: Dudhi/Syamalota [B], Black creeper [E]; shrub.

**Uses:** Root is used by Marma for dental caries. To treat bone fracture, whole plant is applied to affected area by Chakma tribe. A decoction of stem and bark is also used by Marma for treating scabies.

**7) ARACEAE**

***Alocasia indica*** (Roxb.) Schott.: Mankachu [B], Giant taro [E]; herb.

**Uses:** Root stock is taken by Tanchangya for diarrhoea and stomachache. Leaves are also used by Chakma for the treatment of rheumatism.

***Amorphophallus campanulatus*** (Roxb.) Bl. ex. Decne: Ol Kachu [B], Elephant's foot [E]; perennial herb.

**Uses:** Tuber is used by Murang to cure diarrhoea.

***Lasia spinosa*** (L.) Thw.: Kantakachu/Kattosh [B]; marsh plant.

**Uses:** In Khagrachari, leaf and corm are used to treat piles.

***Pothos scandens*** L.: Hatilata [B], Hijing chinepata [C]; climber.

**Uses:** Whole plant is used for treating hysteria and snake bite.

**8) ASCLEPIADACEAE**

***Calotropis gigantea*** (L.) R. Br.: Akanda [B], Marufu [M], Swallow tree [E]; shrub.

**Uses:** Leaves are used as poultice by Chakma for treating rheumatism.

***Tylophora indica*** (Burm. f.) Merr.: Antamul [B], Indian ipecacuanha [E]; climber.

**Uses:** Juice or paste of the whole plant is used as an efficacious remedy for cough and rheumatism.

## 9) ASTERACEAE

***Ageratum conyzoides*** L.: Fulkuri [B], Monipuizza kher [C], Chunachu appa [M], Submenum [Tri], Goat weed [E]; herb

**Uses:** Fresh juice of the leaf is given to cure jaundice. Paste or poultice is made from leaves and applied by Marma to cure headache. Fermented leaf paste is also applied to affected area by the Chakma to treat skin diseases.

***Crassocephalum crepidioides*** (Benth) Moore.: Teolang [C], Tong pa ma [M]; annual herb.

**Uses:** In Rangamati district, whole plant extract is used by the Chakma to get relief from stomach pain.

***Eupatorium odoratum*** L.: Assam lata [B], Oyala [M], Musundai [Tri], Yi la [Mu], Christmas bush [E]; herb.

**Uses:** Leaf juice is taken for treating dysentery in Khagrachari.

***Eupatorium triplinerve*** Vahl.: Ayapan [B], Paihu [M], Ayapana tree [E]; perennial herb.

**Uses:** An infusion of leaf is used by the Marma to cure stomachache.

***Sonchus wightianus*** DC.: Ban palang [B], Pema [M], Sow palang [E]; perennial herb.

**Uses:** Water extract of the root is taken by both Marma and Tanchangya to treat stomach pain.

***Vernonia cinerea*** (Roxb.) Less.: Kukshim [B], Loo Hu [Mu], Hung Fui [M], Purple fleabane [E]; weed.

**Uses:** Leaf extract is taken by Chakma for tonsillitis and stomach pain.

***Wedelia chinensis*** (Osbeck) Merr.: Kesraj/Bhimraj [B], Paihoo [C]; perennial herb.

**Uses:** In Khagrachari district, whole plant is used for rheumatic fever and headache. The whole plant is also used by Tanchangya to cure dysentery.

***Xanthium indicum*** Koenig.: Ghagra [B], Lengra [C], Sonkeng [Ba], Burweed [E]; annual herb.

**Uses:** Leaf paste is applied to affected parts by the Chakma to treat infection of fingers.

#### 10) BIGNONIACEAE

***Oroxylum indicum*** (L.) Vent.: Khona [B], Khama [Mo], Taita [C], Saba [M], Long kock sim [Mu], Thakurung [Tri], Indian trumpet flower [E]; tree.

**Uses:** Root juice is taken by Marma for body pain. Stem bark is used by Chakma to treat both jaundice and diabetes.

***Stereospermum personatum*** (Hassk.) Chatt.: Atkapali [B], Sekwai [C], Chain cha [M]; tree.

**Uses:** Pill made from leaf and is taken with hot water by Chakma to alleviate tuberculosis.

#### 11) BUDDLEJACEAE

***Buddleja neemda*** Buch-Ham.: Budbhota [B], Ada thora [C], Lang gao [M], White butterfly [E]; shrub.

**Uses:** To cure fever, leaf paste is applied on the forehead and warm root extract is rubbed all over the body.

#### 12) CAESALPINIACEAE

***Caesalpinia bonduc*** (L.) Roxb.: Nata karanja [B], Kang boi [M], Fever nut [E]; climber.

**Uses:** Young leaf paste is applied to affected area for treating skin diseases.

***Cassia alata*** L.; Dadmardan [B], Pui chi [M], Khashabubaong [Tri], Ringworm shrub [E]; shrub.

**Uses:** Leaf is rubbed by Marma in the affected area to cure ring worm. For treating eczema, leaf paste is applied by Chakma in the affected parts of the body.

***Cassia fistula*** L.; Sonalu [B], Honalu [C], Indian laburnum [E]; tree.

**Uses:** Fruits are more effective to treat both jaundice and diabetes.

***Cassia obtusifolia*** L.: Chakunda [B], Dang geya [M], Rotha [Tri], Echir gaith [T], Robay [Mu], The foetid cassia [E]; herb.

**Uses:** In Khagrachari, an infusion of leaf is taken orally for diabetes.

***Cassia occidentalis*** L.: Kalkasunde [B], Ka-ja baong [M], Rotha [Tri], Dangor dattlong [C], Western senna [E]; under-shrub.

**Uses:** Decoction of leaf is used by the tribal practitioners for the treatment of jaundice.

***Cassia sophera*** L.: Choto kalkasunde [B], Moitarabek [M], Senna sophera [E]; under-shrub.

**Uses:** In Khagrachari, root paste is taken with black pepper by Marma for treating jaundice.

***Saraca asoca*** (Roxb.) De Wilde: Asok [B], Moma/Pingal [C], Prajok [M], Paying [Mo], Ashoka [E]; tree.

**Uses:** Powdered stem bark mixed with sugar and is taken by Chakma to cure diarrhoea. To treat rheumatism, leaf paste is also used by Chakma in the affected parts of the body.

### 13) CANNACEAE

***Canna indica*** L.: Sarbajaya/Kalaboti [B], Indian shot [E]; rhizomatus herb.

**Uses:** To treat ringworm, rhizome is used as an effective remedy in Khagrachari.

### 14) COMBRETACEAE

***Terminalia bellerica*** (Gaertn.) Roxb.: Bahera [B], Sacheng [Mo], Bora-gach [C], Soi sing si [M], Boya gula [T], Belaric myrobalan [E]; tree.

**Uses:** Powdered leaf is used by Chakma for dysentery. In Khagrachari, fruits are also used for treating menstrual trouble.

### 15) COMMELINACEAE

***Commelina benghalensis*** L.: Kanchira/Dholpata [B], Day flower [E]; annual herb.

**Uses:** Whole plant is used for treating snake bite in Khagrachari.

***Commelina paludosa*** Bl.: Jatakanchira [B], Bat boitta shak [C]; herb.

**Uses:** Juice of the leaves is taken by Chakma to treat dysentery.

**16) CONVULVACEAE**

*Ipomoea mauritiana* Jacq.: Bhuikumra [B]; twinner.

**Uses:** Tuber is used for sexual disabilities.

*Ipomoea vitifolia* Sw.: Kha Mongno [M]; twinner.

**Uses:** Leaf juice is taken by both Chakma and Marma for diarrhoea. To treat rheumatism, leaf paste is rubbed on to the affected parts of the body.

**17) CRASSULACEAE**

*Kalanchoe pinnata* (Lam.) Pers.: Patharkuchi [B], Gios [C], Rokkiapumbo [M], American life plant [E]; perennial herb.

**Uses:** In Khagrachari, leaf juice is taken for jaundice, indigestion, urinary problem and stomach pain. Decoction of root is drunk by Chakma for treating body inflammation.

**18) CUCURBITACEAE**

*Coccinea grandis* (L.) Voigt.: Telakucha [B], Telakuchu [C], Ivy gourd [E]; climber.

**Uses:** Juice of the whole plant is taken by Chakma for diabetes.

*Melothrica heterophylla* cogn.: Kudari [B], Si mung thoi [M]; climber.

**Uses:** Paste made from the leaf is used for mastitis.

*Trichosanthes cucumerina* L.: Koida [B], Snake gourd [E]; climber.

**Uses:** Leaf paste is used in affected area of the body to treat boils.

**19) DILLENIACEAE**

*Dillenia indica* L.: Chalta [B], Ulugach [C], Kra aning [M], Jhaipola [Tri], Dabru [Mo], Elephant apple [E]; tree.

**Uses:** Fruits are used in Khagrachari for the treatment of diarrhoea, dysentery and burns.

*Dillenia pentagyna* Roxb.: Ajugi/Argeza [B], Zambrun [Mo], Hara [C]; tree.

**Uses:** A decoction of the bark is very useful for blood dysentery.



**20) DIOSCORIACEAE**

***Dioscorea belophylla*** (Prain). Haines: Shora alu [B]; twinner.

**Uses:** Fresh juice made from leaves and is taken by Chakma for jaundice and mumps.

***Dioscorea pentaphylla*** L.: Jhumalu [B], Bhutta ludi, [C], Bow su da uo [M], Yam [E]; climber.

**Uses:** Paste of the leaf mixed with mustard oil is rubbed on the affected area by Chakma for treating rheumatic pain.

**21) DRYNARIACEAE**

***Drynaria quercifolia*** (L.) J. Sm.: Pankhiraj [B], Fo-lo-rere [M], Ghuddi [C]; fern.

**Uses:** Rhizome is useful for jaundice and dysentery. It is also used by Marma to cure spermatorrhoea.

**22) EUPHORBIACEAE**

***Antidesma roxburghii*** wall.: Sui mong [M]; shrub.

**Uses:** Root and leaf mixed with clove, black pepper and fruits of *Piper longum* are made into pills and are taken by Marma for indigestion and irregular menstruation.

***Baliospermum montanum*** (Willd) Muell-Arg.: Danti [B], Tung kra mon [M]; undershrub.

**Uses:** Leaf is boiled in water and used by Marma to treat scabies.

***Manihot esculenta*** Crantz.: Shimal alu [B], Lapai baon [M], Simai alu [C], Kapela alu [T], Cassava [E]; herbaceous plant.

**Uses:** Root extract is more efficacious remedy for jaundice.

***Phyllanthus reticulatus*** Poir: Panseuli [B], Kamboilodi pata [C], Ghung-nel [M], Bospai [Tri]; shrub.

**Uses:** Root juice is used for malaria and dysentery. Whole plant extract is applied to teeth several times for treating dental caries.

***Ricinus communis*** L.: Bherenda [B], Rangavedul [C], Krachhubaoung [M], Castor [E]; shrub.

**Uses:** In Rangamati, decoction of the leaf is taken by Chakma to cure jaundice.

***Tragia involucrata*** L.: Bichchuti [B], Bangal sot-tha [C], Chiapoung [M], Indian stinging nettle [E]; herb.

**Uses:** Leaf juice is taken by the tribal practitioner in Rangamati for treating jaundice.

### 23) FABACEAE

***Cajanus cajan*** (L.) Huth: Arhar [B], Flaying [Mu], Heankhrung [C], Piang kong [M], Santai [Tri], Pigeon pea [E]; shrub.

**Uses:** Leaf juice is used as an effective remedy by Chakma to treat both jaundice and diabetes at Kawkhali in Rangamati district.

***Crotalaria pallida*** Ait.: Jhunjhuni [B], Kudug jhunjhuni [C], Easy gaas [T], Rati aapa [M], Roa bay [Mu]; shrub.

**Uses:** Seed is taken with ripe bananas by the Chakma to treat rheumatism. Root extract is taken by Tanchangya to cure stomach pain and indigestion.

***Dalbergia sisso*** Roxb.: Sisu [B], Black wood [E]; tree.

**Uses:** Water extract of the leaf is taken by Chakma for treating dysentery.

***Dalbergia volubilis*** Roxb.: Ankilata [B], Dandauphal [C], Tha su noya [M]; climber.

**Uses:** Whole plant is used to treat gastritis in Khagrachari.

***Derris robusta*** Benth: Jumurja [B], Dumurjja [C], Gunbong [Mo], Gung ba [M]; tree.

**Uses:** Root juice mixed with the juice of *Sida acuta* and used by Marma to cure sore throat.

***Tephrosia purpurea*** (L.) Pers.: Sarpunkha [B], Dummuijja [C], Rhoya-boung [M], Wild indigo [E]; plant.

**Uses:** In Khagrachari, pills made from root and leaf are taken by Chakma for the treatment of jaundice.

***Uraria picta*** Desv.: Sankarjata [B], Belailengur [C], Kro kri [M]; under-shrub.

**Uses:** Juice or paste made from leaf and root is used to cure typhoid, tetanus, mouth sore and fever in Khagrachari.

### 24) HELMINTHOSTACHYACEAE

***Helminthostachys zeylanica*** L.: Ekbir [B], Ghamassaya [C], Simskrankhi [M]; fern.

**Uses:** In Khagrachari, whole plant is used to stop hemorrhage.

Root juice is taken by Marma for the treatment of jaundice in Bandarban district.

## 25) LAMIACEAE

*Anisomeles indica* (L.) Kuntze.: Gobra [B], Jharboaring-shing [C], Tha si [M]; weed.

**Uses:** Juice of the whole plant is very efficacious remedy for uterine infection. Leaf extract is taken by Chakma for child fever and whooping cough. However, leaf extract is also beneficial for gout and rheumatism.

*Hyptis suaveolens* (L.) Poit: Tokma [B], Chongadana [C], Chang kasey [M], Thukma [T]; herb.

**Uses:** Root extract is useful for fever. Seed extract is also taken by Chakma to treat urinary problem.

*Ocimum gratissimum* L.: Ram tulsi [B], Midaphul [C], Sang haphoi [M], Midar roshi gaith [T], Shrubby basil [E]; shrub.

**Uses:** Leaf juice is taken by Chakma for jaundice.

## 26) LAURACEAE

*Actinodaphne angustifolia* Nees.: Sigirasig [C]; tree.

**Uses:** An infusion or a decoction of leaf is taken for treating urinary disorder as well as diabetes in Khagrachari.

*Litsea chinensis* Lamb.: Kukurchita [B], Kushum gach [C], Common tallow laurel [E]; tree.

**Uses:** Leaf paste is used to cure rheumatism. An extract of both stem and root is taken for treating urinary diseases.

*Litsea lancifolia* (Roxb.) Hook. f.: Judijaylla [C]; small tree.

**Uses:** In Rangamati, warm extract of root is given by Chakma to cure diarrhoea.

## 27) LILIACEAE

*Asparagus racemosus* L.: Shatamuli [B], Shaktichara [C], Asparagus [E]; climber.

**Uses:** In Khagrachari root juice is taken by Chakma for vaginitis and urinary trouble.

*Peliosanthes teta* Andrews: Fuji ghash [C]; grass.

**Uses:** To treat earache, 2-3 drops of leaf juice is put several times by the tribal healer.

**28) LORANTHACEAE**

*Macrosolen cochinchinensis* (Lour.) Van Tiegh: Chota banda [B], Orsallu [C]; shrub.

**Uses:** Paste of the leaf is given by Chakma for treating jaundice.

**29) MALVACEAE**

*Hibiscus rosa-sinensis* L.: Jaba [B], Hindu Ma-pangi [M], China rose [E]; shrub.

**Uses:** Marma tribe used to administer decoction of flower with green betel to regulate menstrual cycle. Flower is also used in Khagrachari to cure blood dysentery.

**30) MELIACEAE**

*Aphanamixis polystachya* (Wall.) R. N. Parker.: Pitraj [B], Okhyang [Mo]; tree.

**Uses:** In Khagrachari, fruits are used as an effective remedy for liver disease.

*Azadirachta indica* A. Juss.: Neem [B], Tamakha [M], Nim gaith [T], Neem tree [E]; tree.

**Uses:** An infusion of leaf is taken by the tribal healer to cure malaria in Khagrachari.

**31) MENISPERMACEAE**

*Stephania japonica* (Thumb.) Miers.: Nimuka [B], Thaya nuya [M], Tape vine [E]; climber.

**Uses:** Water extract of the leaf is taken in Khagrachari to alleviate gastritis.

*Stephania rotunda* Hook. F. & Thoms.; Khabukka [C], Thaya nuya [M]; twinner.

**Uses:** Watery root extract is taken by Chakma for treating hysteria. In Rangamati, it is also used by Tanchangya to cure stomach pain.

*Tinospora cordifolia* (Willd) Hook. f.: Gulancha [B], Fa bro noi [M], Gurach-ludhi [C], Tinospora [E]; climber.

**Uses:** Hot decoction of stem and leaf is used by Marma to wash

scabies. Powdered stem is also used in Khagrachari to check both gastritis and jaundice.

### 32) MIMOSACEAE

*Albizia procera* (Roxb.) Benth: Sil koroi [B], Choi [Mo], Choipang [M], Sil koroi gaith [T]; White siris [E]; tree.

**Uses:** Bark is useful for toothache.

### 33) MORACEAE

*Ficus hispida* L. f.: Kakdumur [B], Fah-shai-ba [M], Fig [E]; tree.

**Uses:** In Khagrachari, fruits are used for high blood pressure.

*Ficus racemosa* L.: Jaggadumur [B], Jabuna [Mo], Zoiggadumur [C], Sanak [M], Fig [E]; tree.

**Uses:** Fruits are taken by Chakma to cure rheumatic pain in Khagrachari.

### 34) MYRSINACEAE

*Ardisia solanacea* (Poir.) Roxb.: Ban jam [B], So kra pong [M]; shrub.

**Uses:** Fresh leaf paste is an effective remedy for boils.

*Embelia ribes* Burm. f.: Biranga [B], Longdhama shak [C], Embelia [E]; shrub.

**Uses:** An infusion of leaf is taken by Chakma orally for the treatment of jaundice.

*Maesa acuminata* DC.: Muruli [C], Maricha [M]; tree.

**Uses:** Leaf juice is taken by both Chakma and Marma to cure diarrhoea. To treat rheumatism, leaf paste is rubbed by Chakma on to the affected area.

### 35) MYRTACEAE

*Syzygium cumini* (L.) Skeel: Jam [B], Chaku [Mo], Sochi tobri [M], Indian blackberry [E]; tree.

**Uses:** In Khagrachari, bark is used for treating both toothache and blood dysentery.

**36) OLEACEAE**

*Jasminum sambac* (L.) Ait: Beli [B], Mulipai [C], Arabian jasmine [E]; shrub.

**Uses:** Fresh leaf juice is taken in Khagrachari for menstrual disorder.

*Nyctanthes arbor-tristis* L.: Sheuli [B], Shinguri phul [C], Night jasmine [E]; tree.

**Uses:** An extract made from the stem is taken for treating dysentery.

**37) OXALIDACEAE**

*Oxalis corniculata* L.: Amrul [B], Mring blu [M], Amilani [C], Wood-sorrel [E], herb.

**Uses:** A decoction of whole plant is taken by both Chakma and Marma to treat dysentery.

**38) PIPERACEAE**

*Piper longum* L.: Pipul [B], Bhuth-shan [C], Long pepper [E]; creeper.

**Uses:** The Chakma give stem extract with hot water to children for treating mumps.

*Piper nigrum* L.: Golmarich [B], Gul-morish [C], Black pepper [E]; climber.

**Uses:** An extract of root and leaf is taken by Chakma for fever and cough.

**39) PLUMBAGINACEAE**

*Plumbago indica* L.: Raktachita [B], Agunitita [C], Kaing-kheo [M], Rose coloured lead-wort [E]; herb.

**Uses:** The Chakma of Rangamati use roots along with black pepper for jaundice in the form of pills. Leaves are given in dysentery. Root is also used by Chakma for stomach pain.

*Plumbago zeylanica* L.: Chita [B], Tidi [C], Kain kaw [M], Ceylon leadwort [E]; herb.

**Uses:** Root paste is taken by Chakma orally to cure both jaundice and stomach pain.

**40) POACEAE**

***Cymbopogon citratus*** (DC.) Stapf.: Lebugandhi ghas [B], Dhan sabrang [C], Lemongrass [E]; grass.

**Uses:** For treating cold and headache, an infusion of leaf is given by Chakma tribe.

**41) RUBIACEAE**

***Hedyotis corymbosa*** (L.) Link.: Khetpapra [B], Bhuti tida [C]; herb.

**Uses:** The Chakma tribe use leaf extract for abdominal pain.

***Hymenodictyon orixensis*** (Roxb.) Mabberly: Bhui kadam [B], Khujeva [M], Puron cha [T]; tree.

**Uses:** Root juice mixed with the juice of *Callicarpa tomentosa* bark is given for fever by the Marma tribe in CHTs. Marma of Bandarban use the leaf-boil water to take bath for treating jaundice.

***Morinda angustifolia*** Roxb.: Daruharidra [B], Thachi [M], Rang gach [C]; tree.

**Uses:** Paste or juice of the root is taken to cure insect bite and fever. An extract of both stem and root is given by Chakma to treat urinary problem.

***Nauclea sessilifolia*** Roxb.: Kom [B], Kumkoi [Mo], Kam gach [C], Maraha chai [M]; tree.

**Uses:** Leaf paste is applied between toes by the Chakma for treating bacterial and fungal infection.

***Paederia foetida*** L.: Gandhabhaduli [B], Patabansludi [C], Noya bock [M], Kings tonic [E]; climber.

**Uses:** An infusion of the whole plant is given by Chakma to cure both joint pain and rheumatism.

**42) RUTACEAE**

***Aegle marmelos*** (L.) Corr.: Bel [B], War-e-si apang [M], Bel fruit [E]; tree.

**Uses:** Fruit is a more effective remedy for dysentery.

***Clausena heptaphylla*** (Roxb.) Wight & Arn.: Saderruchi [C], Raing gang [M]; shrub.

**Uses:** To treat dysentery and impotence, leaf is used as an

efficacious remedy in Khagrachari. For headache, extract made from powdered fruits is applied on the forehead by the Chakma tribe.

**43) SAPINDACEAE**

*Cardiospermum halicacabum* L.: Lataphatkari [B], Kalaboitta [C], Nala maiachi [M], Baloon vine [E]; climber.

**Uses:** Hot water extract of the whole plant is taken by Chakma to treat chicken-pox. Pills made from the plant are also given by Marma for treating asthma. The plant is also used for dropsy and measles in Khagrachari.

**44) SCROPHULARIACEAE**

*Scoparia dulcis* L.: Chinigura [B], Du-jhanga [M], Midarreissa [C], Sweet broom weed [E]; herb.

**Uses:** In Kawkhali of Rangamati, pill made from whole plant in combination with cardamom, black pepper and borax is prescribed in jaundice.

**45) SMILACACEAE**

*Smilax zeylanica* L.: Kumarilata [B], Kumuzzaludi [C], Krak khrow [M], Indian sarsaparilla [E]; climber.

**Uses:** In Khagrachari, an infusion of leaf is taken for ulcer and gonorrhoea.

**46) SOLANACEAE**

*Datura metel* L.: Dhutura [B], Thorn-apple [E]; herb.

**Uses:** Powdered seed is used in Khagrachari to treat asthma. Marma used to insert thumb into the fruit and keep for a few time to cure finger felon.

**47) STERCULIACEAE**

*Abroma augusta* L.: Ulatkambal [B], Polumaoeba [C], Devil's cotton [E]; shrub.

**Uses:** The Chakma tribe use seeds to check neck pain in Khagrachari.

*Firmiana colorata* R. Br.: Udal [B], Kra-sam-baing [M], Pithok [C], Krasangban [Mo]; tree.

**Uses:** Juice of bark and root mixed with goat milk is given in jaundice by the Marma tribe.



***Pterospermum acerifolium*** Willd.: Kanakchapa [B], Chasyabaong [M]; tree.

**Uses:** A decoction of bark is very useful for impotence.

**48) THEACEAE**

***Eurya acuminata*** DC.: Sagoler bori [B], Monraicchia [C]; shrub.

**Uses:** Water extract of root is taken by Chakma for diarrhoea in Khagrachari.

**49) THYMELAEACEAE**

***Aquillaria malaccensis*** Lam.: Agar [B], Aloe wood [E]; tree.

**Uses:** A decoction of bark is used for treating heart disease in Khagrachari.

**50) TILIACEAE**

***Grewia microcos*** L.: Patka [B], Eba [M], Yoria sock [Mu]; tree.

**Uses:** The Tripura in CHTs use leaves of this plant along with turmeric and shell of snail for the treatment of jaundice.

***Triumfetta rhomboidea*** (N.) Jacq.: Banokra [B], Burweed [E]; under-shrub.

**Uses:** Fresh juice or paste of the whole plant is given in urinary trouble as well as dysentery.

**51) ULMACEAE**

***Trema orientalis*** (L.) Bl.: Gunali [B], Shimutta [C], Sai saw apang [M], Indian nettle tree [E]; tree.

**Uses:** A decoction of stem bark is taken as a good remedy to cure fever in Khagrachari.

**52) VERBENACEAE**

***Callicarpa tomentosa*** (L.) Merr.: Bormala [B], Jang gach [C], Turmong [Mo], Tara-mah [M]; tree.

**Uses:** Root juice combined with root juice of *Streblus asper* is taken for irregular menstruation and menorrhagia by the Marma tribe. The Chakma take the water extract of stem as a drink to get relief from diarrhoea.

***Clerodendrum indicum*** (L.) Kuntze: Bamunhatti [B], Nalibaong [M], Noligach [C]; shrub.

**Uses:** In Khagrachari, root extract is used for treating asthma.

***Clerodendrum viscosum*** vent.: Bhant [B], Veg [C], Kho pa che [M]; shrub.

**Uses:** In Rangamati, boiled leaf water is used as a bath in jaundice by the tribes. The Marma take bath for scabies. For treating abdominal pain, root extract is given by Chakma to drink frequently. Leaf juice is also given to cure diabetes.

***Gmelina arborea*** L.: Gamari [B], Ramani [Mo], Remeniba [M], Gamber [C], Gamari gaith [T], Chandahar tree [E]; tree.

**Uses:** Powder of inner portion of the bark is used in scabies by Marma. Tanchangya use the bark extract with sugar for treating jaundice.

***Premna corymbosa*** Rottl.: Ganiari [B], Kritma [C]; tree.

**Uses:** Leaf is more beneficial for dyspepsia and intestinal worms.

***Premna esculenta*** Roxb.: Kamrah [M], Kasobu [Mu]; shrub.

**Uses:** Leaf juice is used in Khagrachari to cure jaundice. To treat bacterial or fungal infection, leaf paste is applied to affected areas by Chakma.

***Vitex negundo*** L.: Nishinda [B], Niramisludi [C], Soyin ma pata [T], Chaste tree [E]; shrub.

**Uses:** Paste or juice made from leaf is taken for treatment of both asthma and hair growth.

***Vitex pubescens*** Vahl.: Arsol [B], Ga urbo [C]; tree.

**Uses:** Water extract of bark is given by Chakma for treating jaundice.

***Vitex peduncularis*** Wall.: Boruna [B], Krawru [Mo], Ashmul gas [C], Salong [M]; tree.

**Uses:** An infusion of leaf or a decoction of bark is more efficacious to treat diabetes and malaria. Root juice is useful for both urinary and menstrual problems.

***Vitex trifolia*** L. f.: Chhoto nishinda [B], Khupaninda [C]; shrub.

**Uses:** Fresh leaf juice is taken for stomachache in Khagrachari.

***Lantana camara*** L.: Chotra [B], Lantana [E]; shrub.

**Uses:** Leaf extract is given to cure measles, malaria and tetanus.

**53) VITACEAE**

***Ampelocissus barbata*** (Wall.) Planch.: Jarila-lahari [B], Khoissang [C], Daug gyai [M]; climber.

**Uses:** A decoction of leaves mixed with water is used as a bath in jaundice.

***Cissus adnata*** (Roxb.): Bhatia-lot [B], Romo way [M], Murmujja amila [C]; climber.

**Uses:** A decoction of stem is very useful for treating jaundice.

***Vitis pentagona*** (Roxb.) Lawson.: Sona-tola [B], Hajjang ludi [C]; climber.

**Uses:** Juice or paste of root is taken as a good remedy to treat filaria. Leaf extract is used by Chakma to cure eczema and other skin diseases.

**54) ZINGIBERACEAE**

***Alpinia conchigera*** Griff.: Khetranga [C], Kettyranga [T], Padagrah [M]; herb.

**Uses:** In Rajsthali of Rangamati, juice of the rhizome is given to alleviate diarrhoea and dysentery.

***Boesenbergia longiflora*** Kuntze.: Nunukkhai [M]; herb.

**Uses:** The Marma of Khagrachari used to rub rhizome of the plant on forehead to cure cataract.

***Curcuma caesia*** Roxb.: Kalahaldi [B], Kalahailla [C], Black zedoary [E]; herb.

**Uses:** Juice of the rhizome is more effective to treat fever.

***Curcuma longa*** L.: Halud [B], Ranjan [M], Sudai [Tri], Turmeric [E]; herb.

**Uses:** Paste of the flower is used for treatment of stomachache in CHTs.

***Kaempferia galanga*** L.: Chandumula [B], Ada kamala [C], Pa sui [M]; herb.

**Uses:** Juice of the rhizome is taken by Chakma of Rangamati to cure toothache.

***Zingiber montanum*** (Koenig) Dietrich.: Bon ada [B], Playu [M & T], Gassang [Tri]; herb.

**Uses:** Tribal healers of CHTs prescribe juice or paste of rhizome in flatulence. In Rajsthali of Rangamati, fresh juice is also given to the female for amenorrhoea.

***Zingiber officinale*** Rosc.: Ada [B], Paimui [C], Sapsa [Mu], Ginger [E]; herb.

**Uses:** Juice or powder of the rhizome is very effective remedy for stomach disease, especially indigestion.

***Zingiber zerumbet*** Sm.: Ekangi [B], Murada [C], Pala [T]; herb.

**Uses:** Juice of the rhizome is used for treating both cough and asthma. In Rangamati, the rhizome is used along with *Kaemferia parviflora* to treat gastric pain. In Bandarban, rhizome is also used for skin diseases.

## Discussion

The result has shown that, a large number of medicinal plant species are used by the tribal communities to alleviate more difficult diseases. The highest number of used medicinal plants are herb (28.26%) followed by tree (24.64%), shrub (18.84%), Climber (13.77%), under-shrub (3.62%), twinner (2.90%), plant (2.17%), grass, weed & fern (1.45% in each) and sub-shrub & creeper (0.72% in each) [Fig. 1]. The largest number of medicinal plants included to Verbenaceae family (11 plant species) followed by Asteraceae and Zingiberaceae (8 plant species in each), Caesalpiniaceae & Fabaceae (7 plant species in each), Euphorbiaceae (6 plant species), Rubiaceae (5 plant species), Amaranthaceae and Araceae (4 plant species in each), Acanthaceae, Apocynaceae, Cucurbitaceae, Lamiaceae, Lauraceae, Menispermaceae, Myrsinaceae, Sterculiaceae and Vitaceae (3 plant species in each), Amaryllidaceae, Asclepiadaceae, Bignoniaceae, Commelinaceae, Convolvulaceae, Dilleniaceae, Dioscoriaceae, Liliaceae, Meliaceae, Moraceae Oleaceae, Piperaceae, Plumbaginaceae, Rutaceae and Tiliaceae (2 plant species in each), Acoraceae, Apiaceae, Buddlejaceae, Cannaceae, Combretaceae, Crassulaceae, Drynariaceae, Helminthostachyaceae, Loranthaceae, Mimosaceae, Malvaceae, Myrtaceae, Oxalidaceae, Poaceae, Sapindaceae, Scrophulariaceae, Smilacaceae, Solanaceae, Theaceae, Thymelacaceae and Ulmaceae (1 plant species in each). The different plant parts such as leaf, root, stem, bark, flower, seed, etc. are used in various forms. It was observed that among the plant parts Leaf is most frequently utilized (45 plant species used) followed by Whole plant (20 plant species used), Leaf – root (14 plant species used), Root (11 plant species used), Rhizome (10 plant species used), Bark (7 plant species used), Fruit (6 plant species used), Stem (3 plant species used), Stem – leaf, Bark – root, Tuber, Leaf – fruit, Seed – root, Flower, Stem – root (2 plant species used in each), Leaf – latex, Leaf – corm, Root – stem bark, Leaf-root-stem, Seed-fruit, Seed, Stem bark and Leaf-stem bark (1 plant species used in each) [Table 1].

**TABLE 1**  
**Percentage and Number of**  
**Medicinal Plants Based on their Parts Used**

S.No.	Name of the used plant parts	Number of the used plants	Percentage of the plants
1.	Leaf	45	32.61%
2.	Whole plant	20	14.49%
3.	Leaf and root	14	10.14%
4.	Root	11	7.97%
5.	Rhizome	10	7.25%
6.	Bark	7	5.07%
7.	Fruit	6	4.35%
8.	Stem	3	2.17%
9.	Stem and leaf	2	1.45%
10.	Bark and root	2	1.45%
11.	Tuber	2	1.45%
12.	Leaf and fruit	2	1.45%
13.	Seed and root	2	1.45%
14.	Flower	2	1.45%
15.	Stem and root	2	1.45%
16.	Leaf and latex	1	0.72%
17.	Leaf and corm	1	0.72%
18.	Root and stem bark	1	0.72%
19.	Leaf, root and stem	1	0.72%
20.	Seed and fruit	1	0.72%
21.	Seed	1	0.72%
22.	Stem bark	1	0.72%
23.	Leaf and stem bark	1	0.72%

### Conclusion

The tribal communities have been preserving traditional knowledge in their scripts from time immemorial. But at present, the young tribal generation are not interested to use traditional medicine due to the invention of modern synthetic medicine. So, it is essential to document the indigenous traditional knowledge of the rare medicinal plants and their proper applications for modern research activities which will help to develop different types of modern herbal industries.

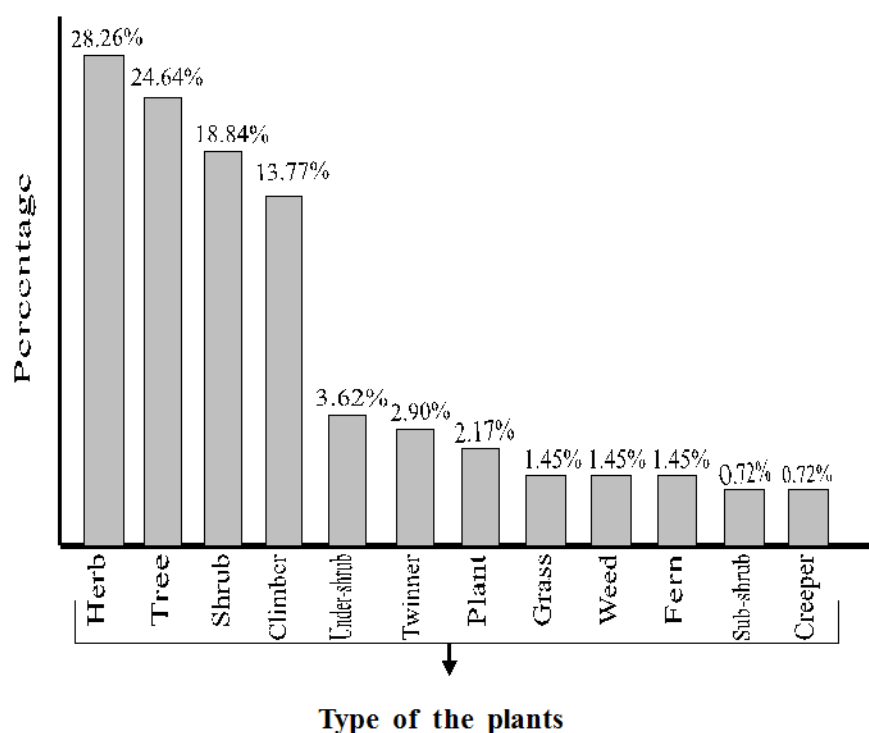


Fig. 1

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