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Medicinal plants prescribed by different tribal and non-tribal medicine men of Tripura state

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The paper deals with 33 medicinal plants along with their local names, parts and ethnomedicinal uses prescribed by tribal and non-tribal medicine men of Tripura state. The ethnobotanical field survey was conducted around the tribal areas of the state during 2002-2003 to highlight the ethnomedicinal uses and the herbal formulation/ preparations of various traditional medicines. The survey comprised of the medicinal use of 33 species of 31 genera belonging to 25 families of flowering plants used for the treatment of various ailments either single or in combinations. The study provides immense scope for the active principles analysis and clinical studies of these plants for future drug development.

Keywords: Ethnobotany, Ethnomedicine, Medicinal plants, *Santal* tribe, Tripura

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Tripura is a small hilly state of North-Eastern India, surrounded by Bangladesh on three sides with rich biodiversity of hot spot with huge variety of flora and fauna (Fig. 1). The total area of the state is 10,497.69 sq km located between 22°-56´ to 24°-32´ North latitude and between 90°–09´ to 92°-20´ East longitudes. Forest covers an area of about 6292.681 sq km, with the annual rainfall of about 247.9 cm and temperature ranging between 10°C-35°C. The suitable tropical climate support luxuriant growth of various types of medicinal plants and other forest resources scattered all over the state from hilly tract to plain. There are about 19 ethnic groups predominantly living in and around the dense forest having their own language, culture, food habit and socio-religious traditions. Till today, most of the tribal population is living in dense forest and still depend upon their traditional herbal treatment. By considering these values, some important medicinal plants are chosen to evaluate their ethnomedicinal uses prescribed by different tribal and non-tribal medicine men of Tripura state[1].

Methodology

Plants were collected though field survey during 2003-2004 during their different flowering periods. The information was gathered from the tribal medicine men or people of the tribal and non tribal community, who knew well about the surrounding plants, their local names, parts used, preparation of herbal medicine, mode of administration, doses and uses in different ailments and disease[2]. The ethnomedicinal survey was conducted particularly with some Tripuri, Bengali and *Santhal* medicine men, locally known as *Auchai* (Tripuri), *Kabiraj* (Bengali) and *Ozai* (*Santhal*). They collect most of the medicinal plants from surrounding natural forest ansd some are cultivated around *Jhum* their huts. Plants were identified with the help of standard treaties[3-5]. The voucher specimens were deposited in the Herbarium, Department of Life Sciences, Tripura University.

Enumeration

Medicinal plant species are arranged with their botanical name, family, local names and ethnomedicinal use as prescribed by *Auchai* and *Kabiraj*. The local names are given as available in *Bengali* (B), *Kokbarak* (K) and *Santhal* (S) languages, respectively.

Abrus precatorius L. (Papilionaceae), *Sona kaich, Sonamukhi, Kuch, Kaich gota* (B); *Takharichum* (K),

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Fig. 1. Location Map of Tripura

About 25 gm dried root powder boiled with one glass of cow milk is given before going to bed for 3 days to patients suffering from rheumatism, joints or muscular pain. Fresh root is also chewed with betel leaf in case of abdominal pain. Dried seed powder is used as an antidote for poisonous bite. Local tribal women also use seeds for ornamental purpose.

Achyranthes aspera L. (Amaranthaceae), *Apang, Ulta lengra* (B), *Youthlenga* (K), Root paste mixed with one glass boiled water is given twice daily for 2 weeks in empty stomach for curing kidney and urinary disorders.

Albizia lebbeck Benth. (Mimosaceae), *Sirish, Kadai* (B), *Kalma* (S), *Khurai bufang* (K), Paste of leaf after boiled in mustard oil for 10 min is applied regularly on skin before one hour of bath in case of white patches on skin or leucoderma.

Cassia alata L. (Caesalpiniaceae), *Dadmari* (B), *Dangduraja* (K), Leaves paste mixed with spider net and common salt (4:1:1) is applied on eczema and scabies.

Catharanthus roseous G.Don (Apocynaceae), *Nayantara* (B), Fresh leaf extract mixed with leaf extract of *Momordica charantia* (*Uthcha*) is given one cup twice daily to the diabetic patients.

Citrus lemon (L.) Burm. f. (Rutaceae), *Kagaji lebu* (B), *Lemu* (K), Root decoction is reported to be very effective in curing hepatitis if taken one cup for one month in empty stomach.

Clerodendrum indicum (Linn.) Kuntze (Verbenaceae.), *Bamunhati, Brahma jasthi* (B), *Asubahang* (K), Root decoction applied orally as dentifrices is useful to prevent tooth decay and wearing.

Clerodendrum viscosum Vent. (Verbenaceae), *Ghetu, Vite gach* (B), *Aamcha* (K), Old roots crushed with black pepper (6:1), made into small pills are given with cold water thrice a day for 2 weeks to cure blood dysentery.

Crotalaria albida Heyne ex Roth (Papilionaceae), *Ban atasi*, *Zhunzhuni* (B), *Bishut* (S), One cup root decoction mixed with 2-3 spoonful ginger extract is taken regularly in empty stomach in case of swelling of body.

Cuscuta reflexa Roxb. (Cuscutaceae), *Sannalata* (B), Plant juice mixed with coconut water is taken early morning for 2 weeks in case of severe jaundice. It is also used in cough and diabetes.

Dillenia indica L. (Dilleniaceae), *Chailta* (B), *Theplak* (K), Filtrate of bark paste mixed with sugar in a glass of water and kept overnight is taken in the morning regularly in empty stomach for blood cancer advised by local *Kabiraj*.

Euphorbia hirta L. (Euphorbiaceae), *Bada dudhi* (B); *Shyamkhai* (K), Leaf paste of the plant and *Achyranthus aspera* (*Apang*) along with sulfur (*gandhi*), copper sulphate (*Tutta*) and mustard oil (6:2:1:1:2) is applied on the skin one hour before bath for any types of skin disease.

Hedyotis auricularia L. (Rubiaceae), *Multia lata* (B), *Shyamkajal* K), Sun dried pills made from leaves and black pepper powder (4:1) is given for three days to cure dysentery and other abdominal disorder.

Hibiscus rosa- sinensis L. (Malvaceae), *Jaba* (B), *Jaba bubar* or *Jaba ghum* (K), Flower bud paste applied regularly one hour before going to bath is useful in excessive hair loss and dandruff problems. Flower bud juice along with clove is given for curing sexual diseases.

Ichnocarpus frutescens R.Br. (Apocynaceae), *Dugdha lata, Perialata* (B), *Soya lata* (S), Root bark extract mixed with the root bark of *Zizyphus rogosa* (*Banbadai*) with 1-2 spoonful sugar is given twice a day in case of urinary disorders.

Jasminum sambac (Linn.) Ait. (Oleaceae), *Beli* (B), *Komali* (K), Fresh young leaf is applied on cuts and old wounds for about 3-4 days to prevent infections and for wounds healing.

Litsea glutinosa (Lour.) C.B.Robinson (Lauraceae), *Kalimanda* (B); *Benal* (S); *Ballsrap* (K), Paste of leaves mixed with crushed *Curcuma longa* (*Hallud*)

rhizome (4:1) tighten with a piece of banana leaf is applied for 3-4 days in case of bone fracture or muscle pain.

Mangifera indica L. (Anacardiaceae), *Aam* (B), *Thaichuk* (K), Bark paste boiled in water is used during bath for the patients suffering from *Pallang* (jaundice). Young stem is also used as toothbrush to prevent dental disease.

Melocanna bambusoides Trin. (Poaceae), *Muli bash* (B), *Owathai* (K), Young tribal women use green powder of the fresh bamboo, collected through scratching for blood coagulation when bitten by leech, mosquito, spider and other insects.

Microcos paniculata L. (Tiliaceae), *Pitchla* (B), *Ashar bufang* (K), Paste of young tender leaves and dry root powder of *Markamia stipulate* (Choang) is applied for 2-3 weeks to cure bone fracture.

Murrya paniculata (Linn.) Jack. (Rutaceae), *Kamini* (B), *Kamini ghum* (K), Leaves are chewed before going to bed in case of tooth decay, swollen gums and pyorrhoea. Root decoction along with 1-2 spoonful sugar and garlic juice is used as sexual stimulant (*Kamini =Kam* means sex).

Musa acuminata Colla (Musaceae), *Ram kala* (B), *Thailik* (K), Root boiled with the bark of *Tinospora cordifolia* (*Gullancha*) is taken regularly early morning to cure diabetes. Stem juice of mature plant is applied on the skin in case of allergy infection. Sometimes, 3-4 bark fibres are tied on wrist and neck for curing allergic complains.

Nyctanthes arbor-tristis L. (Oleaceae), *Siuli* (B), *Hengra* (K), Young leaf juice along with honey mixed with hot cow milk is given to children twice daily for 2 weeks in case of bronchitis, asthma and whooping cough.

Pandanus odoratissimus Linn. (Pandanaceae), *Keya*, *Ketaki* (B), *Ketkaiya* (S), Mixture of dried root powder along with 1 spoonful turmeric juice and upper clean lime water is taken early morning for one week to cure red urine disorder.

Phyllanthus acidus Skeels (Euphorbiaceae), *Harbarai*, *Leur* (B), *Harbadali* (S), *Iheri* (K), Leaf paste is applied on skin in case of smallpox. Leaves are also scattered on patients' bed suffering from smallpox.

Phyllanthus fraternus Webster (Euphorbiaceae), *Bhuiamla* (B), *Samuk gach* (S), About 5-10 gm root with one betel leaf is prescribed in case of irregular menstrual cycle and white discharge. Sometimes, it is prescribed in the form of small pills to restore fertility. Fruits and roots mixed with 2-3 cloves are chewed for enhancing virility.

Plumbago zeylanica L. (Plumbaginaceae), *Chita* (B), *Jaundicea* (S), Leaf juice is used by *Santhal* medicine men in case of jaundice and root paste is applied during snakebite.

Psidium guajava L. (Myrtaceae), *Peyara*, *Gayam* (B), *Gyam* (K), Young leaves with salt is applied during serious tooth pain and decay. Leaf juice with *Mangifera indica* leaf decoction (2:1) is given in case of abdominal pain and blood dysentery.

Ricinus communis L. (Euphorbiaceae), *Bheron* (B), *Lethak* (K), Petiole burnt for 5 min is put into the external auditory canal and the smoke is pumped through mouth into the canal in case of aerotitis and barotitis.

Smilax zeylanica L. (Smilacaceae), *Komarialata*, *Koyargalata*, *Komarica* (B), *Ramlata* (S), *Koyarma* (K), Dried root powder along with bark powder of *Zizyphus rogusa* (*Banbadai*) and *Streblus asper* (Harka) mixed in a ratio of 3:2:1 in warm water is taken regularly early morning for 2 weeks for hepatitis, nephritic disease and blood dysentery. Root paste boiled in goat milk is given as sexual stimulant. Fresh leaves are fed to cow for high milk production.

Stephania japonica Miers (Menispermaceae), *Aknadi* (B), *Muchalilata*, *Muskandilata* (S), *Shyamhakkra* (K), Fresh root extract with black pepper and *Curculigo orchioides* (*Talmuli*) root extract is applied locally after meal for abdominal pain and flatulence. Root decoction of the plant along with root juice of *Zizyphus rugosa* (*Banbadai*) is also useful in urinary disorders.

Streblus asper Lour. (Moraceae), *Seora*, *Harka* (B), *Chabra* (K), Old bark paste is applied by tribal women in case of hair loss and to maintain black colour of hair. Sometimes, large scales of stem are soaked in the pond to prevent bacterial & fungal disease and to feed the fishes during winter season.

Vernonia cinerea Less. (Asteraceae), *Siyalmutra* (B), *Debpari* (S), About 2-3 spoonful root decoction of the plant is administered twice daily for abdominal pain, gas problems and acute diarrhoea.

Discussion

Tripura is predominantly forest area and its 19 ethnic communities. Their maximum lifestyle depends upon their surrounding forest not only for extraction of food and fuel wood but also for necessary medicine. Tripura bears a great resource of

ethnobotanic importance with a wide scope of research for ethnobotanists[1,6]. But unfortunately, till today no functional large-scale ethnobotanical survey was conducted in the state. This detailed study has been undertaken as an initiative approach for document the valuable information gathered from some tribal and non-tribal medicine men and also from few old villagers about their unique knowledge on surrounding plants.

There is a great similarity of medicinal use of those plants, prescribed by different medicine men but their methods of treatment are different. Some of the plants are used individually or in combination with other plants or plant parts by local medicine men for the treatment of simple to chronic diseases. In such case, it is difficult to assess which plant composition is actually effective in curing a particular disease. Only clinical studies of active constituents of these plants can give some indications[7]. Their herbal treatment methods are very popular and effective in curing several diseases in rural and dense forest areas. During survey, it was also observed that young tribal generation does not show any interest to learn their traditional therapy from their elders because of gradual urbanization and modernizations. So it is a great challenge and threat to the researchers for immediate documentation and preservation of the traditional knowledge or else it will diminish due to the generation gap[8]. Since overexploitation of some medicinal plants and indiscriminate deforestation may also lead some plants to be rare or endangered, there is urgent need for conservation and cultivation of these medicinal plants in their own environment. Some medicine men of Tripura are cultivating several medicinal plants around their *Jhum* and huts to sell for use during emergency[7]. Thus, this is a good practice of conservation of the medicinal plants & forest and ultimately protecting the ecology and environment.

Tripura bearing huge diversity of medicinal plant species and other resources of ethnobotany may lead to a world of new source of herbal medicine. However, if the ethnobotanical information is to be valued in modern drug discovery programme, it has to be collected in more detail with respect to the information like symptoms, method of indigenous preparation, doses, source of information, route of administration and the final outcome of the treatment[9]. Further research is required in large scale to find ethnomedicinal uses of medicinal plants, their active constituents and revalidation of uses through clinical analysis.

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