ETHNO MEDICINAL USES OF PLANTS BY SANTAL TRIBAL PEOPLES AT NAWABGANJ UPAZILA OF DINAJPUR DISTRICT, BANGLADESH

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Keywords: Medicinal plants; Traditional knowledge; Nawabganj; Dinajpur; Bangladesh.

Abstract

Ethnobotanical investigation on traditional medicinal plants used by Santal tribal people of Nawabganj upazila of Dinajpur district, Bangladesh was documented. Frequent field trips were made during January to December 2018 to record ethnobotanical data by interviewing Santals of various age group, mostly ranging between 20-76 years, including the traditional healers. A total of 105 plant species under 97 genera belonging to 57 families were recorded which are used by the Santals for the treatment of 67 ailments. Out of these plant species 44% belonged to herbs, 28% trees, 18% shrubs, 10% climbers. In herbal formulations, leaves were found to be mostly used (29%) followed by roots (12%), fruits (12%), whole plant (10%), seeds (9%), stems (5%), flowers (4%), latex (2%), rhizomes (2%), petioles (2%), gums (2%), bulbs (1%), tubers (1%), pods (1%) and buds (1%). The Santal medicinal wealth have been presented with scientific name, family, Bangla name, Santal name, part(s) used, ailments to be treated and formulations. This study also provides data on diversity, distribution and habitats for conservation and prioritization of the medicinal plants.

Introduction

The use of plants and animals as source of medicine and food is as old as humanity. Health and diseases are coeval with life. By necessity man has undoubtedly always been concerned with the question of health and survival and has sought within the framework of his knowledge, solution to problem of illness (Rubin, 1960). The herbal occupied a distinct place in the life right from the primitive period to today and the primitive or ethnic populations have their own medical lore, and some of their therapeutic practices have found place in today’s medical knowledge (Jain, 1995). This traditional knowledge is useful to develop new food sources. Exploration of natural resources and documentation of traditional knowledge is necessary.

Even today, traditional medicine is still the predominant means of health care in developing countries where about 80% of their total population depends on it for their well being. Plants are the basis for the development of modern drugs and medicinal plants have been used for many years in daily life to treat disease all over the world. However, the knowledge of medicinal plant is rapidly dwindling due to the influence of Western lifestyle, reducing in number of generations to carry on the use of plant species in traditional medicine which has increased the interest throughout the world. World Health Organization estimates that 80% of populations from many countries are using traditional of folk medicine to cure various ailments (WHO, 1991).

Over the past two decades several medicinal and ethno-botanical studies in Bangladesh have been carried out by Alam (1992); Alam et al. (1996); Anisuzzaman et al. (2007); Choudhury and Rahmatullah (2012); Faruque and Uddin (2014); Khan (1998); Khisha (1996) and Yusuf et al. (2006, 2009). However, the studies on traditional knowledge of medicinal plants of this country is

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very incomplete. The tribal people of Nawabganj, Dinajpur mostly rely on traditional medicines directly based on plant materials (Ali, 1980). The present work is an attempt to explore the traditional knowledge of medicinal plants in Nawabganj upazila of Dinajpur district, Bangladesh. In this study the local uses of plants recorded from the traditional practitioners to cure different diseases in Nawabganj upazila of Dinajpur district, Bangladesh are described.

Materials and Methods

Study area:
Nawabganj is an upazila of Dinajpur district which is one of the northern districts of Bangladesh. Total area of this upazila is 314.68 sq km, located in between 25°14' and 25°34' north latitudes and in between 88°58' and 89°13' east longitudes. It is bounded by Parbatipur upazila on the north, Ghoraghat and Hakimpur upazilas on the south, Pirganj (Rangpur), Mithapukur and Badarganj upazilas on the east, Birampur and Phulbari upazilas on the west. Here annual average highest temperature 33.5°C and lowest 10.5°C and annual rain fall 2,536 mm. (BPC, 2001).

Data collection:
A total of twenty nine field trips were completed for the documentation of medico-botanical knowledge during January to December 2018. During the field interview, the information was noted in the documentation data sheet. All the information regarding plant species, biological forms, habitat, local names and uses were documented. Medicinal information was obtained through semi-structured interviews with knowledgeable Santals, such as Kabiraj and elderly persons. A total of 134 informants having age range of 20–76 years were interviewed using semi-structured interview method. Professionally they were peasant, day labor, farmer, betel leaf cultivators, house wives, medicine men, small shop keepers etc. Among them 58 were female and rest 76 were male. Plant specimens were collected with flowers and fruits and processed using standard herbarium techniques (Alexiades, 1996).

Identification:
The collected specimens were identified and described up to species with the help of Hooker (1872-1897); Prain (1903); Kirtikar and Basu (1987); and Ahmed et al. (2008-2009). For plant nomenclature including the Bangla names, Huq (1986) and Pasha and Uddin (2013) were consulted.

Results and Discussion
A total of 105 plant species under 97 genera belonging to 57 families were recorded which are used for the treatment of 67 disease/ailments. Out of these plant species, 44% belonged to herbs, 28% trees, 18% shrubs and 10% climbers (Fig. 1). Leaves were (29%) the mostly used plant parts in herbal formularies followed by roots (12%), fruits (12%), whole plant (10%), seeds (9%), barks (9%), stems (5%), flowers (4%), latex (2%), rhizomes (2%), petioles (2%), gums (2%), bulbs (1%), tubers (1%), pods (1%) and buds (1%) (Fig. 2). The use of these medicinal plants by the Santals for the treatment of various disease are shown in Table 1.
Fig. 1. Recorded plant habit in the study area.

Fig. 2. Recorded plant parts used as medicine.

Fig. 3. Recorded dominant diseases in the study area.
| Scientific name & family | Bangla name | Santal name | Part used | Ailments | Formulations |
|-------------------------|-------------|-------------|-----------|----------|--------------|
| Abelmoschus esculentus (L.) Moench (Malvaceae) | Dherosh | Dheross | Fruit | Constipation, Hair fall | Raw fruit is taken internally, Paste is taken externally |
| Abronia augusta L. (Sterculiaceae) | Ulotkambel | Maskundor | Seed | Stomach pain | Seed paste is taken internally |
| Anomum subulatum Roxb. (Zingiberaceae) | Alach | Alach | Seed | Nausea and Cough | Seed powder is taken internally |
| Achyranthes aspera L. (Amaranthaceae) | Apang | Chorchori | Leaf | Tonsillitis | Juice of leaf is taken internally |
| Acalypha indica L. (Euphorbiaceae) | Muktajhuri | Muktajhuri | Leaf | Snake bite | Leaf paste is applied externally |
| Acacia nilotica (L.) Willd ex Del. (Mimosaceae) | Babla | Jeponi | Leaf Bark | Bronchitis, Leucoderma | Bark juice is taken internally, Decoction of leaf is taken internally |
| Alstonia scholaris (L.) R. Br. (Apocynaceae) | Chatim | Chatar | Root Gum | Ulcer, Cancer | Juice of gum is taken internally, Root juice is taken internally |
| Aloe vera L. (Liliaceae) | Ghrito kumari | Ghrito kumari | Leaf | Paralysis, Skin cure | Decoction leaf is taken internally, Leaf paste is taken externally |
| Allium cepa L. (Liliaceae) | Piaj | Piajdar | Bulb | Cold and Cough, Headache | Warm bulb juice is taken externally |
| Allium sativum L. (Liliaceae) | Rasun | Rasundari | Bulb | Blood pressure | Bulb is taken internally |
| Alocasia macrorrhizos (L.) G. Don. (Araceae) | Mancachu | Mancachu | Ptride, Rhizome | Fever, Snake bite | Eaten raw after cooked, Paste of petiole is taken externally |
| Amaranthus spinosus L. (Amaranthaceae) | Katanotey | Katanotey | Leaf | Acidity and Dysentery | Juice of leaf is taken internally |
| Amaranthus viridis L. (Amaranthaceae) | Lota Shkada | Lota Shkada | Leaf | Acidity and Leprosy | Leaf juice is taken internally |
| Annona squamosa L. (Annonaceae) | Shirifa | Leoadari | Leaf | Wound | Leaves paste is applied externally |
| Ananas comosus (L.) Merr. (Bromeliaceae) | Anaros | Anaros | Fruit | Fever, Abortion | Raw fruit is taken internally |
| Andrographis paniculata (Burm. f.) Nees. (Acanthaceae) | Kalomegh | Mohatita | Leaf | Headache, Diarrhea, Cholera, Fever | Leaf juice is taken internally |
| Artocarpus heterophyllus Lamk. (Moraceae) | Katal | Kanta | Root, Leaf | Diarrhea, Skin disease | Decoction of root is taken internally, Young leaf paste is taken externally |
| Argemone mexicana L. (Papaveraceae) | Sheylkata | Kantajhun | Latex | Tumor and cancer | Latex is taken internally |
| Areca catechu L.(Areaceae) | Supari | Guya | Seed fruit | Dyspepsia | Fruit juice is taken internally |
| Azadirachta indica A. Juss. (Meliaceae) | Neem | Sinje | Leaf | Skin disease, Chicken pox | Leaf paste is taken externally |
| Basella alba L. (Basellaceae) | Puishak | Pure ara | Leaf | Burning sensation | Leaf paste is taken externally |
| Scientific name & family | Bangla name | Santal name | Parts used | Ailments | Formulations |
|--------------------------|-------------|-------------|------------|----------|--------------|
| *Bambusa bambos* (L.) Voss. (Poaceae) | Bash | Maa-t | Green part | Stop bleeding | Upper green part is taken externally |
| *Boerhaavia diffusa* L. (Nyctaginaceae) | Panornova | Ohoy | Root | Diuretic | Root paste is taken internally |
| *Bomax ceiba* L. (Bombacaceae) | Shimal | Aledari | Root | Male weakness | Root juice is taken internally |
| *Brassica napus* L. (Brassicaceae) | Sorisha | Turi | Seed | Hair treatment, Skin crack | Seed oil is taken externally |
| *Butea monosperma* (Lam.) Taub. (Fabaceae) | Palash | Palash | Flower | Body toxin, Urinary tract | Flower is taken externally, Flower juice mixed with milk is taken internally |
| *Cajanus cajan* (L.) Millsp. (Fabaceae) | Arhohor | Rahir | Leaf/Seed | Milk secretion | Decoction of leaf and seeds are taken internally |
| *Carica papaya* L. (Caricaceae) | Pepe | Popedari | Fruit | Constipation, Digestive | Ripe fruit juice is taken internally |
| *Cathaenuths roseus* (L.) G. Don. (Apocynaceae) | Nayontara | Nayontara | Whole plant | Child’s leukemia | Whole plant juice is taken internally |
| *Celosia cristata* L. (Amaranthaceae) | Morogful | Kukruchu | Seec | Eye infection | Seed juice is taken internally |
| *Calotropis procera* (Aiton) W. T. Aitn. (Asclepiadaceae) | Akondo | Akondo | Leaf/Gum | Arthritis, Rheumatism | Warm leaves are taken externally, Gum mixed with mustard oil is taken internally |
| *Capsicum frutescens* L. (Solanaceae) | Morich | Akali/Jhal | Leaf | Night blindness | Leaf juice is taken internally |
| *Cassia fistula* L. (Fabaceae) | Badarlati | Nurdari | Leaf | Ringworm | Leaf juice is taken internally |
| *Chenopodium album* L. (Chenopodiaceae) | Bautha | Bothe shak | Leaf | Hepatic disorders | Crushed leaves is taken internally |
| *Cissus quadrangularis* L. (Vitaceae) | Harjora | Harjora | Sten | Heals fractured bone | Stem paste is applied externally |
| *Cinnamomum tamala* (Buch.-Ham.) T. Nees & C.H. Eberm. (Laureaceae) | Tejpata | Tejpata | Leaf/Bark | Diabetes and Cold cough, Bronchitis | Raw leaf and leaf juice are taken internally |
| *Clerodendrum viscosum* Vent (Verbenaceae) | Vat | Vati | Leaf | Anti-helminthic, Cough | Juice is taken internally |
| *Clitoria ternatea* L. (Fabaceae) | Oporajita | Oporajita | Leaf/Root | Headache, Swelling, | Leaf paste is taken externally |
| *Calocasia esculenta* (L.) Schott. (Araceae) | Kachu | Seru | Leaf/Petiole | Cancer, Tumors, Stop bleeding | Leaf juice is applied externally |
| *Coriandrum sativum* L.(Apiaceae) | Dhonepata | Dhonia | Whole plant | Fever, Asthma, Cold | Petiole juice is taken externally |
| *Citrus aurantifolia* (Christm.) Swingle (Rutaceae) | Lebu | Kagi | Fruit | Digestive, appetite, Balanced diet | Juice of whole plant is taken internally |
| *Coccinia grandis* (L.) Voigt (Cucurbitaceae) | Telakucha | Telakucha | Leaf | Hypertension, Fever and vomiting | Fruit juice is taken internally, Fruit juice is taken externally |
| **Table 1 (contd.)** | **Bangla name** | **Santal name** | **Parts used** | **Ailments** | **Formulations** |
| Scientific name & family | Bangla name | Santal name | Parts used       | Ailments                                      | Formulations                                      |
|--------------------------|-------------|-------------|------------------|-----------------------------------------------|---------------------------------------------------|
| *Cuscuta reflexa* Roxb. (Convolvulaceae) | Sarnalata | Alokata | Stem, Leaf, Whole plant | Constipation, Liver disorder, Stop bleeding | Decoction of stem is taken internally Paste of whole plant is applied externally |
| *Cynodon dactylon* (L.) Pers. (Poaceae) | Durba | Dubi ghash | Whole plant | | |
| *Cyperus rotundus* L. (Cyperaceae) | Mutha | Mutha | Root | Fever, Diarrhea | Decoction of root is taken internally |
| *Dalbergia sissoo* Roxb. (Fabaceae) | Sisso | Gidra | Leaf | Gonorrhea, Dysentery | Decoction is taken internally |
| *Datura metel* L. (Solanaceae) | Dhutra | Dhutra | Leaf | Earache, Asthma | Raw leaf is smelled |
| *Diospyros malabarica* (Desr.) Kostel. (Ebenaceae) | Gaab | Gaabdar | Leaf, Fruit | Dyspepsia, Cough | Fruit paste is taken internally Leaf juice is taken internally |
| *Eclipta alba* (L.) Hassk (Asteraceae) | Kalokeshi | Kalokeshi | Leaf | Hair treatment | Leaf paste is taken externally |
| *Enhydra fluctuans* Lour. (Asteraceae) | Helencha | Helenchada | Whole plant | Fever | Eaten raw after cooked |
| *Erythrina variegata* L. (Fabaceae) | Madar | Gogo | Leaf | Joints pain | Paste of leaf is applied externally |
| *Euphorbia hirta* L. (Euphorbiaceae) | Dudhia | Dudbhaga | Whole plant | Bronchitis, Edemas | Decoction of whole plant is taken |
| *Feronia limonia* L. (Rutaceae) | Kotbel | Kotbel | Fruit | Heart disease, Digestion | Fruit juice is taken internally |
| *Ficus benghalensis* L. (Moraceae) | Bot | Bot | Bud | Malaria | Decoction of young bud is taken |
| *Ficus hispida* L.f. (Moraceae) | Khoksha | Sar-ha | Fruit | Diabetes, Jaundice | Decoction of fruit is applied internally |
| *Ficus religiosa* L. (Moraceae) | Pakur | Hesha | Fruit | Asthma, Malaria | Raw fruit is taken. Eaten raw after cooked |
| *Ficus racemosa* L. (Moraceae) | Jagdumur | Loya | Fruit | Diabetes, Asthma | Raw fruit is applied internally |
| *Glinus oppositifolius* (L.) Aug. DC. (Mulluginaceae) | Ghima shak | Ghimma shak | Leaf | Pain, Fever, Earache | Juice of leaf is taken internally Raw leaf is eaten Leaf paste applied externally |
| *Hibiscus rosa –sinensis* L. (Malvaceae) | Joba | Jobabah | Flower | Burn, Hair treatment | Flower paste applied externally |
| *Heliotropium indicum* L. (Boraginaceae) | Hatsur | Hatsur | Leaf | Insects bite, Dog bite | Leaf juice applied externally Eaten raw after cooked |
| *Ipomoea aquatica* Forssk. (Convolvulaceae) | Kolmilota | Kolumshak | Whole plant | Fever, Leprosy, Jaundice | Leaf paste is taken internally |
| *Ipomoea batatas* (L.) Lam. (Convolvulaceae) | Mistialu | Shekalu | Leaf, Tuber | Dyentery, Skin disease, Edema | Tubefr juice is applied internally Leaf paste is taken externally |
| *Justicia gendarussa* Burm.f. (Acanthaceae) | Bijtarop | Bijjarop | Leaf | Headache | Leaf paste is applied externally |
| Scientific name & family | Bangla name | Santal name | Parts used | Ailments | Formulations |
|--------------------------|-------------|-------------|------------|----------|--------------|
| *Justicia adhatoda* L. (Acanthaceae) | Basak | Harbaskosh | Whole plant | Bleeding piles | Whole plant juice is taken internally |
| *Kalanchee pinnata* (Lam.) Pers. (Crassulaceae) | Pathar kuchi | Paththorr kuchi | Whole plant | Bites of insect | Whole plant paste is taken externally |
| *Lagenaria sicararia* (Molina) Standl. (Cucurbitaceae) | Lau | Hot-t | Fruiti | Dry cough, Piles | Raw fruit is applied internally |
| *Lablab purpureus* (L.) Sweet. (Fabaceae) | Shim | Malhan | Leaft | Skin disease, Burn | Leaf paste is taken externally |
| *Leucas aspera* L. (Lamiaceae) | Shetodron | Dhurup | Leaft, Root | Stomach pain, Rheumatism | Leaf juice is applied internally |
| *Leonurus sibiricus* L. (Lamiaceae) | Roktodron | Roktodron | Whole plant | Menstrual disease | Raw whole plant is taken internally |
| *Lawsonia inermis* L. (Lythraceae) | Mehedi | Mendi | Leaft | Hair treatment, Skin disease | Leaf paste is applied externally |
| *Mangifera indica* L. (Anacardiaceae) | Aam | Uldare | Leaft | Fever, diarrhea, Toothache | Decoction of leaf is taken internally |
| *Mimusops elengi* L. (Sapotaceae) | Bokul | Bokul Baha | Flower | Asthma | Raw flower is smelled |
| *Mimoso pudica* L. (Mimosaceae) | Lojjabati | Lojjabati | Leaft | Muscular pain | Decoction of leaf is taken externally |
| *Moringa oleifera* Lam. (Moringaceae) | Sajna | Munga | Leaft | Diabetes | Leaf juice is taken internally |
| *Momordica charantia* L. (Cucurbitaceae) | Korolla | Karla | Fruti | Diabetes | Fruit juice is taken |
| *Musa sapientum* L. (Musaceae) | Kola | Kayra | Stem | Stop bleeding | Stem juice is applied externally |
| *Nerium indicum* Mill. (Apocynaceae) | Korobi | Korobari | Leaft | Insect bite, Swelling | Decoction of leaf is taken externally |
| *Nigella sativa* L. (Ranunculaceae) | Kaliejeera | Kalijriera | Seed | Blood pressure, Asthma | Juice of seed is taken internally |
| *Nymphaea nouchali* Burm. f. (Nymphaeaceae) | Shapla | Upalbaha | Leaft | Dysentry, Burning spot | Rhizome juice is applied internally |
| *Nyctanthes arbor-tristis* L. (Oleaceae) | Sheuli | Sheuli baha | Root | Round and thread-worms | Root juice is applied internally |
| *Ocimum sanctum* L. (Lamiaceae) | Tului | Tului | Leaft | Cough, Fever, Bronchitis | Leaf juice is taken internally |
| *Opuntia stricta* (Haw.) Haw. (Cactaceae) | Fanimans | Fanimansha | Fruiti | Gonorrhoea | Ripe fruit is applied internally |
| *Piper betle* L. (Piperaceae) | Pan | Pandari | Leaft | Louse killing | Leaf juice is taken externally |
| *Piper longum* L. (Piperaceae) | Pipul | Pepol | Leaft | Fever, Dyspepsia, Asthma | Leaf juice is taken internally |
| Scientific name & family | Bangla name | Santal name | Pars used | Ailments | Formulations |
|--------------------------|-------------|-------------|-----------|----------|--------------|
| *Psidium guajava* L. (Myrtaceae) | Pera | Sapri | Leaf, Root | Diarrhea | Decoction of leaf is taken internally |
| *Persicaria hydropiper* (L.) Del. (Polygonaceae) | Bishkatal | Jiyoti | Whole plant | Heals fractured bone, Liver disease, Wound, Epilepsy | Paste of whole plant is applied externally. Juice of whole plant is taken internally |
| *Punica granatum* L. (Punicaceae) | Dalim | Dulindari | Fruit | Dysentery | Decoction of dried fruit is applied internally |
| *Phyllanthus emblica* L. (Euphorbiaceae) | Amloki | Amlokki | Root | Scurvy, Diabetes | Raw fruit is taken internally |
| *Phyllanthus reticulatus* Poir. (Euphorbiaceae) | Chitki | Chikidiari | Leaf | Diarrhea, Epilepsy | Leaf juice is taken internally |
| *Saccharum officinarum* L. (Poaceae) | Kushar Ashoke | Aakh | Stem Juice | Jaundice | Decoction of root is applied internally |
| *Saccharum saponarum* L. (Poaceae) | Kesh Ashoke | Keshia | Root | Anorexia | Stem juice is taken internally |
| *Saraca indica* L. (Caesalpiniaeae) | Ashoke Ashoke | Barc | Anemia, Abortion | Bark juice is taken internally |
| *Spondias pinnata* L. (Anacardiaceae) | Amrha Mokhri | Amrhadari | Root | Irregular menstruation | Bark juice is taken internally |
| *Solanum nigrum* L. (Solanaceae) | Tutbegun Tutbegun | Tutbegun | Fruit | Ringworm | Paste of fruit is applied internally |
| *Syzygium cumini* (L.) Skeels. (Myrtaceae) | Jam Koot | Koot | Seed | Diabetes | Paste of seed is taken internally |
| *Swietenia mahagoni* (L.) Jacq. (Meliaceae) | Mehgooni Mehgooni | Mehgooni | Seed | Headache | Seed paste is taken externally |
| *Swerdia perennis* L. (Gentianaceae) | Chirata Chirata | Chirata | Root | Hiccups and Vomiting | Root juice is taken internally |
| *Tamarindus indica* L. (Fabaceae) | Tetul Gadaful | Jojo | Fruit | Diabetes, Fever, Gastritis | Ripe tamarind is applied internally |
| *Tagetes erecta* L. (Asteraceae) | Arjun Arjun | Genda | Leaf | Bleeding | Leaf paste is applied externally |
| *Terminalia arjuna* (Roxb) W. & A. (Combretaceae) | Arjun | Arjun | Barc | Blood pressure, Heart disease | Bark juice is taken internally |
| *Tinospora cordifolia* (Thumb.) Miers. (Menispermaceae) | Guloncho Gullai | Gullai | Leaf, Stem | Passing of semen, Jaundice, Diabetes | Juices of stem and leaf are taken internally. Leaf paste is taken internally |
| *Tridax procumbens* L. (Asteraceae) | Tridhara Tridhara | Tridhara | Leaf | Bronchitis | Leaf juice is taken internally |
| *Trichosanthes bracteata* (Lam.) Voigt (Cucurbitaceae) | Makal Kaveranda | Kaweranda | Root, Seed | Abortion, Dryness | Seed pills are taken internally |
| *Wedelia chinensis* (Osbeck) Merr. (Asteraceae) | Mahavringaraj Mahavringaraj | Mahavringaraj | Leaf | Vomiting, Alopecia, Hair tonic | Root paste is taken externally |
| *Zingiber officinale* L. (Zingiberaceae) | Ada Adhe | Rhizome | Indigestion, Cold-cough | Rhizome powder is taken internally |
The survey has recorded 67 categories of uses of 105 medicinal plants (Table 1). This is the indication of rich knowledge of medicinal uses of plants by the Santals in Nawabganj upazila of Dinajpur district. Out of 67 categories of ailments, fever, dysentery, cough, asthma, skin disease and diabetes was dominant diseases in the study area (Fig. 3).

The most frequently used species for the treatment of different disease are shown in Table 1. This finding of common medicinal plant families in this study is in agreement with Anisuzzaman et al. (2007); Ghani (2003); Khan (1998); Choudhury and Rahmatullah (2012); Faruque and Uddin (2014); Uddin and Hassan (2014); Uddin et al., (2015), and Yusuf et al. (2006, 2009).

During the survey, the discussion, interviews and field visits with traditional healers, kabiraj, herbalists, medicine men, indicated that they have enough knowledge of medicinal uses of plant species. Traditional knowledge of tribal and local people on human disease is very important to find out new drugs for human health, also the doses and their administration needs to standardization with scientific way. Deforestation, civilization, development projects, modernizations and industrialization etc. are largely depleting the biodiversity and natural habitat of these species as well as the traditional knowledge. Conservation initiatives with in situ or ex situ conservation activities before these medicinal plant resources lost forever and training of the young generation on use and conservation of these medicinal plants are very necessary. The results of this study will play a role in primary health care of human and be helpful in further ethnobotanical studies.

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