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Ethnomedicinal plants used by the Sonowal Kacharis of Dibrugarh District, Assam, India

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Abstract

From the time immemorial, a large number of plant species are being used by the ethnic groups of North-East India for treatment of various ailments. Present study aims to explore the indigenous knowledge pertaining to utilization of medicinal plants by the Sonowal Kacharis of Dibrugarh District of Assam. Field exploration and study is done in this respect in villages inhabited by the Sonowal Kacharis. A total of 60 plant species belonging to 37 families were documented along with the parts used. The conservation of these plants is necessary for discovery of crude drugs.

Keywords: Ethnobotany, Sonowal Kacharis, Dibrugarh, Conservation

1. Introduction

The traditional practice of plants against the various ailments in India can be traced from the earliest known civilizations. From time immemorial, people have been gathering knowledge about the nature and the environment. This knowledge has now become an inseparable part of human society and life. Primitive tribes who still gather food by dwelling in remote forest areas have wide knowledge about utilization of plants as medicines (Barukial and Sarmah, 2011) [1]. These knowledge forms a base for modern pharmacologist (Brahmam 2000) [4]. Ethno-medicine refers to "those beliefs and practices relating to disease which are the products of indigenous cultural development and are not explicitly derived from the conceptual frame work of modern medicine" (Hughes, 1968) [3]. In recent years, research on medicinal plants has been extensive in order to develop new products and medicines to treat diseases. Medicines derived from plants possess a potentially safer and more reliable medicine than synthetically produced drugs.

A large number of ethnic tribes inhabit the North-Eastern part of India. These tribes possess a vast traditional knowledge on effective herbal medicines which they had acquired through experience. A wide range of plants with effective medicinal properties against some very important diseases have been reported from North-East India (Sonowal and Barua, 2012; Sajem and Gosai, 2011; Sharma and Sharma, 2010) [16, 14, 15]. Over the past few years a good number of significant ethnomedicinal studies have been conducted among different tribes of NE India (Bhuyan, 2015; Das and Pathak, 2013; Raut *et al.*, 2012; Saikia *et al.*, 2010; Kalita and Bora, 2008; Buragohain and Konwar, 2007; Das and Tag, 2006; Bhardwaj and Gakhar, 2005; Medhi and Paul, 2004) [3, 7, 12, 13, 9, 5, 6, 2, 10]. But very few were among the the study population. Ethnomedicine and its practices differ from tribe to tribe, community to community, even village to village (Talukdar, 2014) [17].

Sonowal kacharis is one of the most popular scheduled tribe of NE India. They are mainly distributed in Dibrugarh, Lakhimpur, Dhemaji, Tinsukia, Sibsagar, Jorhat and Golaghat Districts of Assam. They have been practicing their own unique indigenous medicine system. They have immense faith on the effectiveness of their herbal medicines (Talukdar, 2014) [17]. Due to the lack of traditional knowledge among the young generations these indigenous knowledge are in verge of extinction. In this context, the present paper is an attempt to document the ethnomedicinal plants used by the Sonowal Kachari people in Dibrugarh District.

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2. Materials and Methods

2.1 Study area: Dibrugarh district (27°5'38" N-27°42'30" N latitude & 94°33'46"E-95°29'8"E longitude) covers an area of 3381.00 sq. km and is bounded by Dhemaji district in the north, Tinsukia district in the east, Tirap district of Arunachal Pradesh in the south-east and Sibsagar district in the south. The area stretches from the north bank of Brahmaputra, which flows for a length of 95 km through the northern margin of the district to the Patkai foothills on the south. The Sonowal Kacharis are one of the ethnic tribes of Dibrugarh district. They have their own social organisations, religious beliefs and herbal medicine treatments. The present study was conducted in Moncotta Kacharibari, Boiragimoth Kachari gaon, Chiringkhat Kachari pathar, Duliaban and Bhekulajan villages.

2.2 Field survey: Extensive field surveys were conducted in the study villages over a period of 12 months (July 2014-June 2015). Information about ethnomedicinal plants were collected by observation and in-depth discussion with traditional medicinal practitioners. Besides this, secondary data were collected through library work. Standard literatures on local flora (Dutta, 1985; Kanjilal *et al.*, 2005) were used

to identify and verify the documented plant species. The data collected were systematically organized.

3. Results and Discussion

The traditional knowledge of medicinal plants helps in conservation of cultural practices and biodiversity and also in finding new alternative drugs (Pei, 2001) [11]. The present study documented a total of 60 species of medicinal plants belonging to 37 families. In terms of medicinal plants Leguminosae and Euphorbiaceae is represented by the highest number of species. This is followed by Rutaceae, Asteraceae, Apocynaceae and Malvaceae with 3 species each. This in-turn is followed by 9 families with 2 species while the rest families are represented by 1 species each. The study revealed that most of the medicinal plants were crushed to paste during remedy preparation. The various types of ailments are found to be cured by making decoction, juice extract and paste from leaves, roots, tree/stem bark, seeds, flowers and fruits of specific plant. According to the traditional practitioner's these remedies doesn't have any adverse effects. The detailed ethnobotanical utilization of recorded plants are given in Table 1

Table 1: Ethnobotanical plants used by the Sonowal Kacharis of Dibrugarh District

Sl no	Botanical names	Family	Local name	Ethnobotanical uses
1	<i>Aegle marmelos</i> Correa	Rutaceae	<i>Bel</i>	3-4 fresh leaves are ground to extract the juice which is taken with sugar once daily for 3 days to cure nasal bleeding.
2	<i>Ageratum conyzoides</i> Linn.	Asteraceae	<i>Gundgua bon</i>	Leaves and tender shoot are made into paste which is applied on cuts and wounds.
3	<i>Alstonia scholaris</i> (L.) R.Br	Apocynaceae	<i>Choatiana</i>	Bark paste is diluted with water and taken orally to cure gastric problems.
4	<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	<i>Hati Khutura</i>	Fresh roots are crushed and the extract is mixed with water and taken twice daily for curing jaundice.
5	<i>Andrographis paniculata</i> Wall. ex Ness.	Acanthaceae	<i>Kalmegh</i>	Leaf juice extract is administered to cure irregular bowels and intestinal worm trouble in children.
6	<i>Asparagus racemosus</i> Willd.	Liliaceae	<i>Sotmul</i>	Decoction of root is administered orally to cure gallstone.
7	<i>Averrhoa carambola</i> Linn.	Oxalidaceae	<i>Kordoi</i>	For curing jaundice, fruit juice mixed with juice of sugarcane is administered thrice daily.
8	<i>Bombax malabaricum</i> DC.	Malvaceae	<i>Simolu</i>	Tree bark is grounded and mix with milk and given during vaginal discharge.
9	<i>Bonnaya brachiata</i> Link. and Otto.	Scrophulariaceae	<i>Horu Kasidoria</i>	Paste of fresh leaves is used to cure wounds.
10	<i>Caesalpinia bonducella</i> Flem.	Leguminosae	<i>Letaguti</i>	Seed paste is applied for quick healing of wounds.
11	<i>Cassia alata</i> Linn.	Leguminosae	<i>Khor pat</i>	Leaf paste is used to cure ring worms.
12	<i>Cassia occidentalis</i> Linn.	Apocynaceae	<i>Medelwa</i>	Leaves are roasted and taken to cure dyspepsia
13	<i>Cassia tora</i> Linn.	Leguminosae	<i>Bilokhoni</i>	Leaf paste is used to cure scabies and eczema. It is also used in snakebite and Rheumatism.
14	<i>Cinnamomum tamala</i> (Buch-Ham.) Nees and Abern.	Lauraceae	<i>Tezpat</i>	Leaves are crushed and kept in a glass of water. The filter extract is taken orally to cure diabetes
15	<i>Citrus aurantifolia</i>	Rutaceae	<i>Nemu</i>	Juice mixed with sugar is taken to cure fever. Juice with hot water and little salt is used in dysentery. Juice mixed with coconut oil is massaged for curing scabies.
16	<i>Colocasia esculenta</i> (L) Schott.	Araceae	<i>Pani kochu</i>	Tuber juice is applied on cuts.
17	<i>Commelina benghalensis</i> Linn.	Commelinaceae	<i>Kona simolu</i>	Juice extract of the plant is used during pain of the eyelids. Leaf juice is also used to cure pain during menstruation.
18	<i>Croton tiglium</i> Linn.	Euphorbiaceae	<i>Koni bih</i>	Seeds are ground to a paste and applied on raw carbuncles for quick healing.
19	<i>Curcuma domestica</i> Loin.	Zingiberaceae	<i>Halodhi</i>	Rhizome is used to cure jaundice
20	<i>Dillenia indica</i> Linn.	Dilleniaceae	<i>Ou tenga</i>	Fruits are eaten to relieve constipation and Stomach ache.
21	<i>Dracaena angustifolia</i> Roxb.	Liliaceae	<i>Jomlakhuti</i>	Leaf extract is used to cure jaundice.

22	<i>Eupatorium cannabinum</i> Linn.	Asteraceae	<i>Tongloti</i>	To cure scurvy root paste is used.
23	<i>Euphorbia nerifolia</i> Linn.	Euphorbiaceae	<i>Siju</i>	Juice mixed with honey is taken to cure asthma
24	<i>Eryngium faetidum</i> Linn.	Umbeliferae	<i>Man dhonia</i>	Leaf paste is taken on empty stomach to cure acidity
25	<i>Ficus religiosa</i> Linn	Moraceae	<i>Ahot goss</i>	Bark and tortoise shell are burned together and the ash obtained is applied in cuts and wounds
26	<i>Hibiscus rosa-sinensis</i> Linn.	Malvaceae	<i>Joba</i>	Flowers are crushed and the juice obtained is use to cure sinus.
27	<i>Hiptage benghalensis</i> (L.) Kurz	Malpighiaceae	<i>Madhoi maloti</i>	Root juice is taken as remedy for asthma
28	<i>Houttuynia cordata</i> Thunb.	Saururaceae	<i>Mosonduri</i>	Leaves are eaten raw as remedy for constipation
29	<i>Hydrocotyle rotundifolia</i> Roxb.	Umbeliferae	<i>Hour manimuni</i>	Laef juice is taken to cure fever.
30	<i>Jatropha curcas</i> Linn.	Euphorbiaceae	<i>Bangali era</i>	Leaf extract is used to cure toothache.
31	<i>Leea indica</i> (Burm.) Merr.	Vitaceae	<i>Kukurathengia</i>	Paste of stem bark is used to cure hydrocele
32	<i>Leucas apsera</i>	Lamiaceae	<i>Durum bon</i>	Leaf paste smell is inhaled to cure sinus
33	<i>Mimusops elengi</i> Linn.	Sapotaceae	<i>Bokul</i>	Decoction of fresh barks and roots is administered as mouth wash to stop bad breath.
34	<i>Momordica dioica</i> Roxb	Cucurbitaceae	<i>Bhat kerela</i>	Fresh roots of the plant are used as remedy for urinary trouble.
35	<i>Paederia foetida</i> Linn.	Rubiaceae	<i>Bhedai lota</i>	Tender leaves and leaf buds are cooked and taken with daily food to cure piles; leaf paste is also used against rheumatism.
36	<i>Perilla ocimoides</i> Linn.	Lamiaceae	<i>Sookloti</i>	Root paste is used orally to cure mouth ulcers.
37	<i>Physalis peruviana</i> Linn.	Solanaceae	<i>Kopalphoota</i>	Shoots of <i>Physalis peruviana</i> and <i>Stephania hernandifolia</i> are grounded together and eaten in empty stomach to cure jaundice.
38	<i>Phyllanthus niruri</i> Linn.	Euphorbiaceae	<i>Bon amlokhi</i>	Leaf and root extracts are taken orally to cure jaundice.
39	<i>Piper longum</i> Linn.	Piperaceae	<i>Pipoli</i>	Fruits grind with fresh leaves of <i>Punica granatum</i> are taken as a remedy for influenza
40	<i>Plumbago zeylenica</i> Linn.	Plumbaginaceae	<i>Boga Agechita</i>	To cure piles, roots with 2-3 pieces of turmeric are ground with water to prepare a paste which is applied on the diseased area.
41	<i>Polygonum chinense</i> Linn.	Polygonaceae	<i>Modhusuleng</i>	Young leaves used as a remedy for stomach trouble and dysentery.
42	<i>Pongamia pinnata</i> (L) Merr.	Leguminosae	<i>Koroch goss</i>	Fresh tree barks decoction is taken orally thrice daily to cure blood dysentery.
43	<i>Psidium guajava</i>	Myrtaceae	<i>Modhuri</i>	Leaf juice is taken to cure dysentery.
44	<i>Punica granatum</i> Linn.	Lythraceae	<i>Dalim</i>	Leaves, barks, flowers and seeds are crushed and the resultant paste is applied on mouth sores. Leaf juice is taken to cure diarrhea.
45	<i>Rosa centifolia</i> Linn.	Rosaceae	<i>Tezi gulap</i>	Flower juice is applied on the eye to cure eye infections.
46	<i>Ruta graveolens</i> Linn.	Rutaceae	<i>Sasanlota</i>	Roots are used to cure body ache.
47	<i>Scoparia dulcis</i> Linn.	Scrophulariaceae	<i>Chenibon</i>	Leaves are taken orally to cure cough and kidney troubles.
48	<i>Spondias pinnata</i> (Koem.) Kurz.	Anacardiaceae	<i>Omora</i>	Fruits are eaten for curing dyspepsia and dysentery
49	<i>Solanum spirale</i> Roxb.	Solanaceae	<i>Titakuchi</i>	Tender leaves paste is taken orally to cure pneumonia.
50	<i>Stereospermum chelonoides</i> DC.	Bignoniaceae	<i>Paroli</i>	Leaf extract is used as a remedy for scabies.
51	<i>Stephania hernandifolia</i> Walp.	Menispermaceae	<i>Tubuki lota</i>	Leaf paste is used to cure septic inflammation and also used applied on boils for opening.
52	<i>Syzygium jambolanum</i>	Myrtaceae	<i>Kola jamu</i>	Dried seeds are taken with water in empty stomach to maintain blood sugar level and to cure dysentery.
53	<i>Terminalia chebula</i> Retz.	Combretaceae	<i>Hilikha</i>	Dried fruits are grind properly to powder, mixed with lemon juice and taken once daily in empty stomach for 3 days to cure dysentery.
54	<i>Terminalia arjuna</i> Wight and Arn.	Combretaceae	<i>Arjun</i>	Bark is crushed and boiled. The decoction is taken to cure asthma
55	<i>Thevetia peruviana</i> (Pers.) Schum.	Apocynaceae	<i>Korobi</i>	Root extract is used to cure dog bite.
56	<i>Tinospora cordifolia</i> (Willd) Miers.	Menispermaceae	<i>Soguni lota</i>	Decoction of leaves is used against gout.
57	<i>Trichosanthes palmata</i> Roxb.	Cucurbitaceae	<i>Kuwabhaturi</i>	Fresh roots and seed paste is externally applied on carbuncle.
58	<i>Urena lobata</i> Linn.	Malvaceae	<i>Bor-hunborial</i>	Root paste is used in the treatment of body oedema.
59	<i>Vitex negundo</i> Linn.	Verbenaceae	<i>Pochotia</i>	Leaves are used to cure chronic cough and pneumonia.
60	<i>Xanthium strumarium</i> Linn.	Asteraceae	<i>Agora</i>	Root paste is wrapped with a muslin cloth over the place of pain in the throat.

Figure 1 depicts the different plant parts used for preparation of medicines. Leaves are mostly used (41%). The leaves are mostly grind to paste or sometimes eaten raw. Leaves are

followed by roots (21%), bark(13%), fruits(9%), seeds(6%), flowers(5%), shoot(3%) and rhizome (2%).

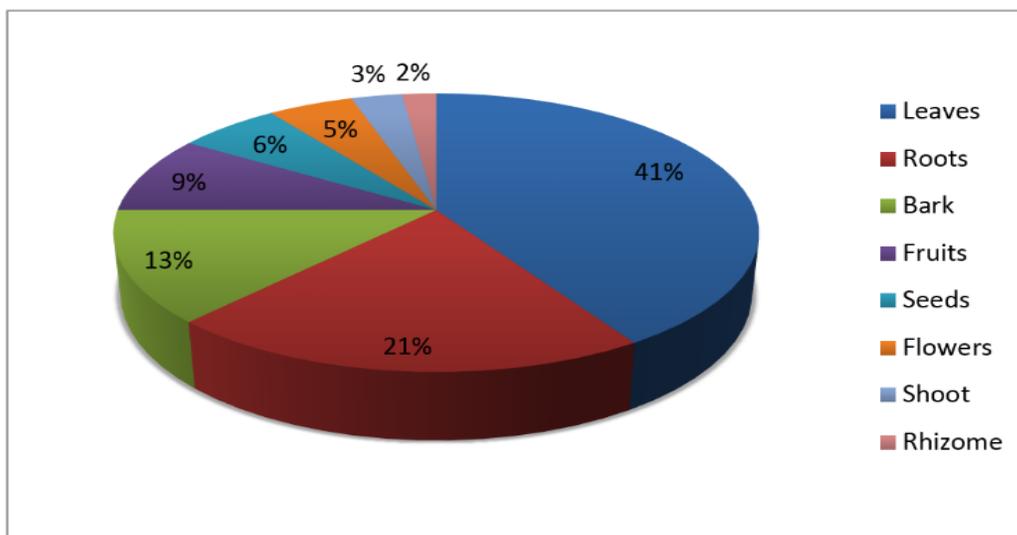


Fig 1: Percentage composition of different plant parts used in ethno- medicine preparation

Plant based medicinal knowledge are mostly accumulated among the elderly practitioners. They pass on these information's to their next generation. But due to progressive exposure to modernization, their knowledge of traditional uses of plants may be lost in due course. So it is important to study and record the uses of plants by different tribes for future study. Thus, the potentialities of ethnomedicinal studies in North East should be given the importance as it can provide us a lead to discover of more and potential useful chemical compounds.

5. Conclusion

The findings of the present study prove that Sonowal Kacharis of the Dibrugarh district have a wide knowledge of traditional medicinal plants. Ethnobotanical studies provide useful information which the pharmacologists may use to formulate drugs. Due to the lack of awareness and over exploitation these medicinal plants are under threat. Therefore the conservation of these plants requires serious consideration.

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