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Certain Ethnomedicinal plants used by Local communities in Sivasagar District of Assam, India

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Abstract

The present study deals with the certain medicinal plants used by local communities as Ahom, Brahmin, Chutiya, Kaibartta,Koch, Kalita, Deuris, Mishing, Tea tribes etc in Sivasagar district of Assam for the treatment of various diseases & ailments. The information were collected through questionnaire with the village head(Gaon Burah), local healers including bez and bezine. A total number of 30 plant species belonging to 24 families have been documented and used as traditional medicine by local communities of the study area. The herbal medicine were prepared from various plant parts of single plant or multiple plants. The different parts of the plants included are leaf, root, branch, leaf branch,rhizome,bark, bud,fruit, gum ,whole plant etc. Leaf is found more frequently used than other parts of the plant. Altogether, 25 types of diseases including Asthmatic problem, blood dysentery, diabetes & urinary problem, high fever, jaundice, menstrual problem, piles etc have been reported to be cured by using these 30 plant species. These plant species are commonly available in the natural reserve of the study area but some of the plant species are going to be threatened. The study thus underlines the potentials of the ethno-botanical study and the need for the documentation of traditional ecological knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind.

Key-Words: Ethno-botany, Medicinal plant, Ailments, Communitie

Introduction

The traditional system of medicine from plant source is an important aspect for ethnobotanical research. Ancient literature on ethnobotany suggest that the primitive people of earlier centuries were using several kinds of food and medicinal plants for health care needs and general used. According to World Health Organization (WHO) as many as 80 % of world population depends today on traditional medicine for primary health care needs. In India, the main traditional system of medicine include Ayurveda, Unani and Sidha use over 7,500 plant species have been reported. India is one of diverse countries in the world, rich in medicinal herbs and plants. In India with more than 75 % of the population residing in rural areas close to the biological resources, rich traditional uses of medicinal plants have existed among the indigenous peoples for ages [1]. Herbal medicines are assumed to be of great importance in the primary healthcare of individuals[2] and communities in many developing countries as the herbal medicines are comparatively safer than synthetic drugs.

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Assam is a state of North Eastern Region of India having rich biodiversity of herbal medicinal plants [3] Ethnomedicinal plants plays a significant role for primary health care of tribal and non tribal people and discovery of new drugs. Primitive people have used medicinal plants to cure a variety of ailments but they kept no records and information is mainly passed on verbally from generation to generation[4]. Therefore, it is necessary to prime duty for study of wild plants scientifically. From last three decades, considerable progress has been occurred in the field of ethnobotany due to increased interest. In these aspect, different ethnomedicinal studies have been carried out by several workers from time to time apart from India [5-9] and several others [10-17] from North Eastern Region. The aim of the present investigation is to study the certain medicinal plants used by local communities in Sivasagar district of Assam as very little studies have been made so far.

Material and Methods

Study area

Sivasagar district is situated at Upper Brahmaputra Valley of Assam which is located on 25.45° and 27.15 North latitude and 94.25°

and 95.25° East longitude. It lies at an altitude of 86.6 meters and located at an elevation of 95 meters or 311 feet. It is bounded on East side by Dibrugarh district, on West side by Jorhat district, on North side by rivers Brahmaputra and on South side by Nagaland and Arunachal Pradesh. The climate of the area is warm humid type and temperature varies between 15°C to 35°C average annual rainfall is 108.44 cm The soil is acidic in nature.The local communities of the study area such as Ahom, Brahmin, Chutiya, Deuris, Kaibartta, Koch, Kalita, Mishing, Tea-tribes etc. Important natural resources which are abundantly available in the study area and the people of these communities have been used medicinal plants as folklore medicine for treatment of primary health care needs.

Methods

An ethnobotanical survey of the medicinal plants were carried out during 2009-2011 from the different localities of Sivasagar district of Assam. During the field study, medicinal plants were screened with the help of local healer including bez and bezine, rural and old age people belonging to different communities.

The information were collected through extensive personal interviews and in depth discussion among the local healers, old age and rural people engaged in ethno medicinal practices. The medicinal plant species were collected from the nearest forest area and were documented. The collected plants were identified with the help of regional and local flora [18-19] .The standard method was followed for collection of plant materials, pressing and drying, mounting and preservation of the same [20].The herbarium specimens were preserved in the Department of Botany, University of Science and Technology, Meghalaya. The collected data are tabulated with their botanical name, local name, family, part used, mode of preparation and administration and diseases/ailments.

Results and Discussion

In the present study, it has been found that 30 plant species belonging to 24 families were enumerated (Table no 1).Among them, 46.66 % herbaceous, 33.33 % shruby, 13.33 % arboreous and 6.6 % are climbers. Out of 30 species, 20 species are cultivated and 10 species are wild. Euphorbiaceae is the most dominant family (containing 5 plant species) followed by Verbenaceae and Rubiaceae (2 species) whereas 15 families were found monospecific. Leaf from 12 species is predominantly used as a remedy for treatment of various diseases /ailments among traditional practitioner followed by root (5 species),whole plant(4 species),gum(3 species),rhizome, branch, bud(2 species) and bark, leaf branch, fruit, flower, shoot(1 species) each. The reported medicinal plants are used to 25 kind of disease and ailments .The Growth form of the documented medicinal plant species and percentage of different plant part used for the preparation of herbal medicine were presented in Fig 1 and Fig 2.

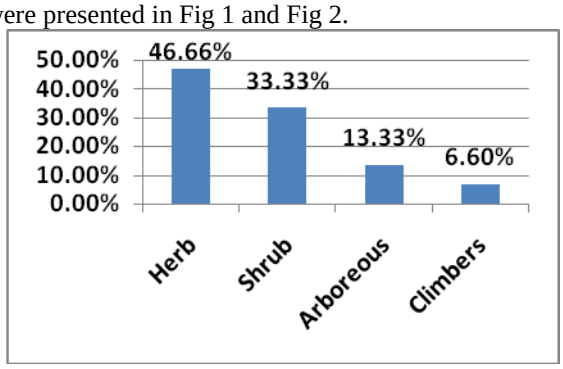

Fig. 1: Growth form of the documented medicinal plant species

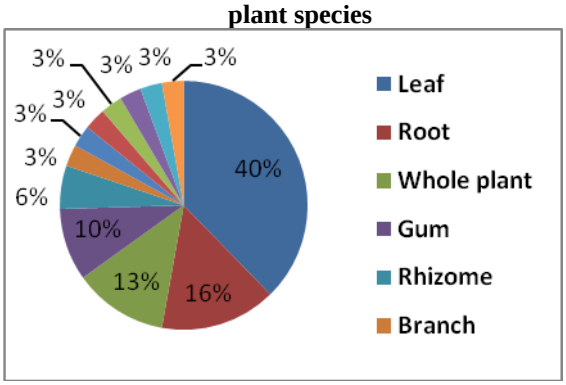

Fig. 2: Percentage of different plant part used for the preparation of herbal medicine

From the present investigation, it is observed that the herbal medicine consisted of single plant part, more than one method of preprtion. The majority of herbal medicine were prepared using water as medium. In some cases for the prepartion of herbal medicine, water, milk ,honey and little amount of salt were used as medium.According to the traditional prctitioner, herbal medicine are made orally and prescribed to the patient depend upon age groups and average or maximum 3-4 dosages are used for tretment of various diseses/ailments. During the application of dosages of herbal medicine, the local traditional healers advised the patients to avoided the use of allopathic medicine.

Present study includes information 30 plant species used as remedies for skin diseases, tooth pain, gastric problem, menstrual problem etc. The present study reveals that some of the single plants were used for the treatment of various diseases/ailments such as *Aloe barbadensis* (skin diseases, high fever) as followed by *Anthocephalous cadamda(*digestion, gastric problem)

*Clerodendron infortunatum(*killing tape worm, tooth pain),*Cynodon dactylon* (Piles, tooth pain), *Leucus aspera(*snake bite, pneumonia),*Scoparia dulcis*(killing nail worm, jaundice) etc.

On the other hand, some of the plant such as *Aloe barbadensis, Casia alata,Cyperus rotundus,Ricinus communis,Tinospora cordifolia* for particular disease(skin diseases)as followed by *Clerodendron infortunatum, Cynodon dactylon, Jatropha carcus,Leucus aspera* (tooth pain), *Cronton tiglium,Lawsonia innermis, Scoparia dulcis* (killing nail worm),*Anthocephalus cadamba, Eclobium linneatum*(Gastric prolem),*Acorus calamus,Litsea salicifolia*(Menstrural problem) and *Cynodon dactylon,Mimosa pudica*(Piles) etc.

Some of the plant species ,such as *Croton tiglium,Eugenia bracteta,Menia spinosa* are rare species in the present study area and therefore, it is an urgent need to conserve these medicinal plants in sustainable way.

Conclusion

The knowledge of medicinal plant plays a significant role in various ethnic communities of the society. In the present study, 30 plant species were used by local communities in Sivasagar district of Assam for treatment of various disease/ailments. The traditional practitioners are the main source of knowledge of medicinal plants. Some of the medicinal plants and their traditional uses of herbal medicine are gradually decrease due to poor storage of data, different developmental activities and other anthropogenic factors. Therefore, there is an urgent need to formulate a good amount of data and appropriate conservation strategies for conservation of these medicinal plants on sustainable basis. Finally, phytochemical and pharmacological investigation of these medicinal plants are needs to be evaluated which can help to discover their potentially as drugs and modern medicine.

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Table1: (Description of the herbal medicinal plants used by the local communities in Sivsasagar District of Assam)

Sl No (1)	Scientific Name (2)	Local Name (3)	Family (4)	Parts used (5)	Mode of preparation & administration (6)	Diseases/ailments (7)
1	*Aloa barbadensis*(L)Mill	Salkunwari	Liliaceae	Gum of shoot	Gum of shoot is extracted and used on effected portion of the skin. It used for few days only.	skin diseases
				Shoot	Approximate 3-4 shoots are grinded and paste is used on forhead.	High fever.
2	*Acorus calamus* L	Boch gos	Araceae	Root	Approximate 3 cm size root of *Acorus calamus*, 1 piece of camphor grinded and mixed with 5 teaspoonful of water. One dose once daily before breakfast for 3 days only.	Menstrual problem
3	*Anthocephalus cadamba(*Roxb) Miq	Kodam goch	Rubiaceae	Bark	1-2 inch size bark is grinded and half tea spoonful juice is used early in stomach for 2-3 days only.	For digestion
				Bark	2 cm size of bark of *Anthocephalus cadamba* Mig, 5 cm size bark of *Psidium Guava*, bark of *Punica grantum* and 3 tea spoonful ash of *Musa balbisiana* are grinded and mixed with one glass of water. One dose once daily before breakfast for 3 days only.	Gastric problem

4	*Cassia alata* L	Khorpat	Caesalpiniaceae	Leaf	Leaves are grinded and paste is used on the effected portion of the skin.	Skin diseases
5	*Clerodendron infortunatum* L	Dhopat tita	Verbenaceae	Root	Approximate 3-4 inch size of root is grinded and juice is extracted. One dose once daily early in stomach for few days only.	Killing tape worm
				Root	Root of a single plant is grinded and root paste is used directly on the effected portion of teeth. It is used for 4-5 days.	For relieving tooth pain
6	*Croton triglium* L	konibih	Euphorbiaceae	Gum	2-3 drops gum is used on the effected portion.	Killing nail worm
7	*Curcuma amada Roxb*	Amada	Zingiberaceae	Rhizome	Approximate 2-3 cm size of rhizome is grinded and juice is extracted. One dose once daily early in stomach for few days only.	High Pressure
8	*Cymbopogon nardus Linn*	Citronola	Poaceae	Leaf	One drop of leaf juice is used once daily for 3 days only.	Sinusitis
9	*Cynodon dactylon L*	Dubori bon	Gramineae	Bud	Approximate 101 nos of Cynodon dactylon,25 gm of rice and few amount of sugarcandy are grinded and mixed with half glass of water. One dose once daily before breakfast for 3 days only.	Piles
				Whole plant	101 nos of Cynodon dactylon, one piece of Allium sativum L , one bud of Curcuma longa are grinded and covered with leaf of Musa balbisina and warm it. Release warm air to enter the mouth and keep for few minutes .The practice is to be done twice daily for 3-4 days.	For relieving tooth pain.

10	*Cyperus rotundus L*	Kenya bon	Cyperaceae	Rhizome	Approximate 8-9 nos rhizome of Cyperus rotundus L and leaves of Eclipta alba are grinded and mixed with few amount of salt. It is applied directly on the effected portion.It is used for 5-6 days only.	Skin disease
11	*Eclobium linneanum Kurz*	Nilkontha	Acanthaceae	Root	Approximate 1 inch size root of Eclobium linneanum Kurz is grinded and juice is extracted. One dose once daily early in stomach for 3-4 days only.	Gastric problem
12	*Eugenia bracteata Roxb*	Bonpitha	Myrtaceae	Fruit	One fruit of Eugenia bracteata, one fruit of Abrus precatorius L, one fourth part of Caesalpinia crista L are grinded with few amount of salt and mixed with 3 teaspoonful warm water. One dose once daily before breakfast for 3 days only..	Tonsillitis
13	*Euphorbia nerifolia L*	Hiju	Euphorbiaceae	Leaf	Approximate 5-6 nos leaves are heated and juice is extracted and mixed with equal amount of honey bee. One dose once daily in empty stomach for 3 days only.	Asthmatic problem
14	*Houttuynia cordata Thunb*	Mosundoi	Saururaceae	Leaf	3-4 nos of leaves of Houttuynia cordata Thunb, 5-6 inch size root of Musa balbisiana are grinded and juice is extracted. One dose once daily before breakfast for 3 days only.	Blood dysentery
15	*Hoya parasitica wall*	Lahem	Asclepidaceae	Flower & root	Approximate 1 no of flower and root are grinded and juice is extracted. One dose once daily before breakfast for 4 to 5 days only.	Pain of Stomach of Female

16	*Jetropha curcas L*	Bongali ara	Euphorbiaceae	Branch	5-6 cm branch are warm up for few minutes .Applied on the affected portion on the teeth thrice daily for 3-4 days only.	For relieving tooth pain
17	*Lasia spinosa Thw*	Sangmora	Araceae	Whole plant	Approximate 20-21 nos of whole plants are fried with mixed vegetable. It is used alongwith food items for one month only.	For decreasing the water stored in blood
18	*Leucus aspera L*	Drun bon	Lamiaceae	Leaf	Approximate 2-3 drops juice of Leucus aspera L is used on the affected portion.	Snake bite
				Root	Root is grinded and kept inside the mouth for few minutes, until saliva comes out due to action. Practice is made twice daily for 2-3 days.	For relieving tooth pain
				Root	Root is grinded with 4-5 tespoonful warm water and mixed with few amount of salt. One dose once daily before breakfast for 3-4 days only.	Pneumonia
19	*Litsea salicifolia(Roxb.ex.Nees)*	Dighloti	Lauraceae	Leaf	Approximate 18- 21 nos leaves of Litsea salicifolia alongwith 21 nos seeds of piper nigrum are grinded and mixed with few amount of salt. 3 tablets are prepared and used once daily early in stomach for 3 days only.	Menstrual problem
20	*Lawsonia inermis L*	Jetuka	Lythraceae	Leaf	Few amount of leaves are grinded. Grinded juice is used on the effected portion.	Killing nail worm
21	*Meanya spinosa Roxb.ex*	Kotkora goch	Rubiaceae	Leaf	Approximate 9-10 nos leaves are grinded and warm it. Warmed raw materials are used on the affected portion of the skin.	Skin cancer

22	*Mimosa pudica L*	Nilaji bon	Melastomaceae	Bud	Approximate 6-7 nos buds are grinded and juice is extracted. One dose once daily early in stomach for 7 days only.	Piles
23	*Phyllanthus niruri L*	Bomamlokhi	Euphorbiaceae	Whole plant	9-11 nos of whole plants are grinded and juice is extracted and mixed with minimum amount of sugar. One dose once daily in empty stomach before breakfast for 3 days.	Diabetes & urinary problem
24	*Ricinus communis L*	Ara goch	Euphorbiaceae	Leaf or small plant	Approximate 5-7 nos of plants are grinded and juice is extracted. Extracted juice is mixed juice of matured bark of tomato. It is used on the affected portion for 7-8 days only.	Skin disease
25	*Scoparia dulcis L*	Madhutulshi	Scrophulariaceae	Leaf	Leaves are grinded and juice is extracted. 4-5 drops juice are used daily for 7 days only.	For killing the nail worm.
				Whole plant.	11-13 plants are grinded and juice is mixed with half glass of water.1 dose once daily in empty stomach for 3 days in the morning. (2 doses for child & 3 doses for adults.)	Jaundice
26	*Sturculia villosa Roxb*	Udal goch	Sterculiaceae.	Leaf branch	Approximate 1 cm size of 6-7 nos leaves branch are grinded and mixed with 1 glass of water and 50 gm of sugarcandy and keep for one night. One dose once daily early in stomach for 3 days only.	For loss of metal
27	*Swertia chirata Wall*	Sirota tita	Gentianaceae.	Branch	Branch is grinded and juice is extracted. 2-3 drops juice is used in the nose for 2 days	Bleeding from nose.

					only.	
28	*Tinospora cordifolia (Willd) Hook.f &Th*	Hoguni lota	Menispermaceae	Gum	Gum is used on the effected portion of the skin for 7-8 days only.	Skin diseases
29	*Vanda roxburghii R.Br.*	kopuphul	Orchidceae	Leaf	One leaf to be warm up and grinded. Only 3 drops of juice are applied for 2-3 days only.	Pain of Ear
30	*Vitex negundo L*	Posotia	Verbenaceae	Leaf	Leaves are grinded and paste is used orally on the join portion for 4-5 days.	Pain of join.

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