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Dr. Lalzikpuii Sailo
Dept. of Pharmacy RIPANS,
Mizoram, India

Susankar Kushari
Dept. of Pharmacy RIPANS,
Mizoram, India

Suman Kumar
Dept. of Pharmacy RIPANS,
Mizoram, India

Traditionally used medicinally plants of Bhergaon sub-division, Udalguri district, Assam

Dr. Lalzikpuii Sailo, Susankar Kushari and Suman Kumar

Abstract

The present study was conducted in Bhergaon sub-division of Udalguri district, Assam to accumulate the information related to traditional plants used by different communities of the area. This particular sub-division was selected for the study because of the diverse communities having sufficient knowledge for the utilization of different parts of the plant. The survey documents about 60 different kinds of traditional medicinal plants used in the subject area. Out of the 60 phyto species the prime parts of the plants used were 42.85% leaf, 9.09% flower, 18.18% root, 5.16% whole plant, 12.96% fruit, 3.89% rhizome, 1.29% shoot, 3.89% seed, 1.29% stem, 1.29% bark. The maximum plant species are used against different affliction such as cough, liver disorder, asthma, skin diseases, diarrhea, headache, dysentery, infertility problems etc. The most important plant families were Solanaceae, Rutaceae, Compositae, Apocynaceae, Liliaceae, Euphorbiaceae, Zingiberaceae.

Keywords: Medicinal Plant, Ethnomedicine, Bhergaon, Diseases

Introduction

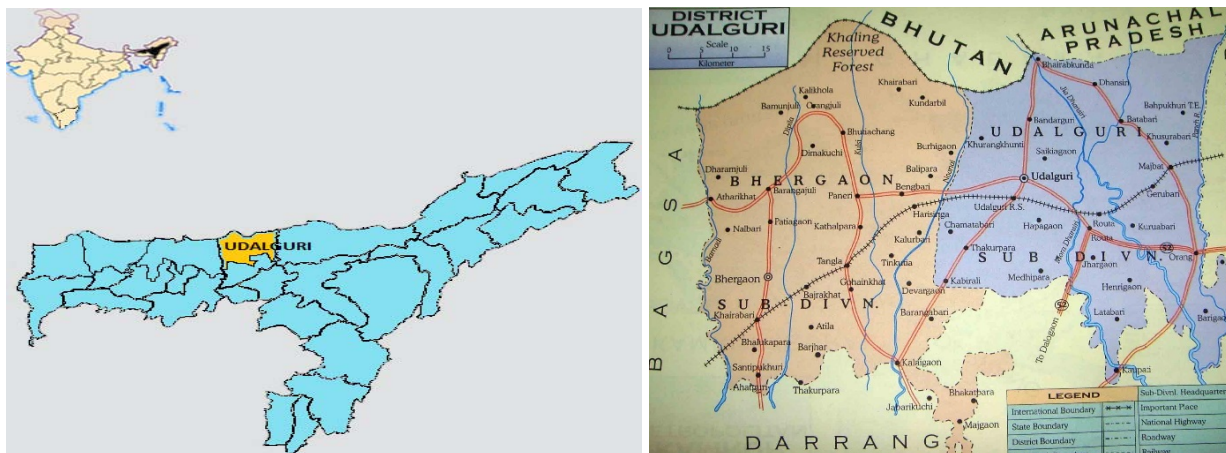
Medicinal plants have been widely used globally for its medicinal use in the world today. At present 85% of the world's population employs herbs as their primary medicines^[7]. According to WHO, different kinds of locally available medicinal plants parts have been used by 80% of the rural population in the third world countries^[1]. The north east region specially Assam is a land of different types of herbs. Different communities of Assam use various identified and unidentified plant species for treatment of various disorders. The ethnic groups of Assam who have been living in remote forest areas are commonly dependent on traditional system of medicine. Many wild plants are known to be consumed as food and also have been used as medicine in advancement of time^[4]. In Assam there are more than 200 medicinal plants that have got very good promising value despite their wide uses in the country itself. Different types of plants have been used for the ailment of different types of diseases^[5]. Assam is one of the region which is situated between 24° and 28°18'N latitudes and 89°4' and 96°E longitudes. Natural vegetation of the region has a great variety of herbs, shrubs, leaves, bark, stems in addition to various medicinal attributes^[8]. It has been revealed that most of the modern clinical drugs are of natural product origin and thus these products are useful tool in drug development in the pharmaceutical field^[7]. The main objective of the study was to find out different plant variety of traditionally used medicinal plants in Bhergaon sub-division of Udalguri district. With concerns regarding the loss of native knowledge and the possible extinction of medicinal plant resources of Assam, there is an urgent need to document and review the studies carried on the medicinal plants of Assam. Finally we suggest suitable conservation of management strategies for medicinal plants of Assam.

Materials and methods

The study area Bhergaon sub-division, Assam is located between 26°46' to 27°77' N latitudes and 92° 08' to 95°15' E longitudes. Topography of the Bhergaon sub-division was undergone mainly in low-lying plains. The climate of Bhergaon sub-division is humid and congenial with relative humidity around 82%. The average annual rainfall is 2000mm (normal).

Correspondence

Dr. Lalzikpuii Sailo
Dept. of Pharmacy RIPANS,
Mizoram, India



The soil of Bhergaon sub-division is classified as sandy loam and forest soil. Most of the plants were collected from Khatalguri, Bahinigaon, Gormara, Hapagaon, Baligaon, Kathalbari, Pakidia, Batabari. These villages are comprised of different communities viz, Bodo, Kosari, Basumatary, Rabha, Koch, Kalita, Keot, Deori, Kachari, Brahmin, Rajbonshi etc. The interviews were conducted with the knowledgeable persons, viz, village men, Gaonburha, Ojhas, Kabiraj, tribal

folks. All information regarding traditional medicinal practices were documented on survey data sheet. The information was documented under following heads namely a. Local name of the plant, b. Plant part used, c. Preparation and application of plant against various diseases.

Result

Table 1: List of Traditional medicinal plants used by local people of Bhergaon Sub-division of Udalguri district, Assam against various diseases, parts used and medicinal uses:

Sl. No	Botanical Name	Family	Local Name	Part used	Ethnomedicinal Use
01	<i>Saraca asoca</i> (Roxb.)	Caesalpinaceae	Ashok	Flowers	Flower juice is used in skin diseases.
02	<i>Alternanthera sessile</i> R. Br.	Amaranthaceae	Matikanduri	Leaves	Leaf juice promotes lactation and as effective hair tonic.
03	<i>Asparagus recemosus</i> Willd	Liliaceae	Satmul	Root	Decoction of root powder is mixed with honey and is used in treatment of infertility.
04	<i>Amaranthus viridis</i> Linn.	Amaranthaceae	Khutora	Whole plant	Stem juice is used as antidote against snakebite. Root juice is useful to overcome impotency.
05	<i>Centella asiatica</i> (Linn.) Urban	Apiaceae	Bor manimuni	Whole plant	Used in treatment of dysentery, stomach problem and nerve problem. It also posses hepato-protective, memory booster and blood purifier
06	<i>Clerodendrum colebrookianum</i> Walp	Verbenaceae	Nefafu	Leaves	Effective against hypertension
07	<i>Bryophyllum pinnatum</i> Oken	Crassulaceae	Pategaja	Leaves	Used in urinary problem and blood dysentery.
08	<i>Basella alba</i> (Linn.)	Basellaceae	Puisaak	Leaves	Leaf juice is used in treatment of piles and also reduces labor pain.
09	<i>Clerodendrum infortunatum</i> Gaertn.	Verbenaceae	Dhopattita	Roots and leaves	Leaves juice is used to reduce malarial fever. Roots are used externally against tumors and skin disease.
10	<i>Colocasia esculenta</i> Linn.	Araceae	Kola Kachu	Leaves and roots	Leaves possess blood coagulation property useful in management of minor injury. Roots are effective in treatment of Pharyngitis.
11	<i>Erechithes valerianaefolia</i> DC	Compositae	Bon Kopah	Leaves	Leaves juice is used in cut wounds for quick healing.
12	<i>Justicia japonica</i> Linn.	Acanthaceae	Jooron	Leaves	Leaves are used in ophthalmia
13.	<i>Oldenlandia corymbosa</i> Linn	Rubiaceae	Bon jaluk	Whole plant	Posses hepatoprotective activity. And also used in the treatment of jaundice fever and bilous infection.
14	<i>Physalis minima</i> Linn.	Solanaceae	KopalPhuta	Fruit	Ripe fruits posses diuretic and purgative property.
15.	<i>Solanum indicum</i> Linn.	Solanaceae	Tit Bhekuri	Roots	Roots are used in toothache, asthma, colic pain, and skin diseases.
16.	<i>Artemisia vulgaris</i> Linn.	Compositae	Chirota	Leaves	Leaf juice is used as antihelmintics, blood purifier and asthma
17.	<i>Cannabis sativa</i> Linn.	Cannabinaceae	Bhang	Leaves and flower	Dried flower is used as sedative and analgesic. Leaves juice is used to reduce blood glucose level.
18.	<i>Ipomea aquatica</i>	Convolvulaceae	Kulmou	Leaves	Decoction of leaves is used to treat menstrual problem.
19.	<i>Zingiber officinale</i>	Zingiberaceae	Ada	Rhizome	Used in treatment of cough.

20.	<i>Gynopetalum cochinchinense</i>	Cucurbiaceae	Kauri kerala	Roots	Root paste is used as analgesic and in the treatment of pneumonia.
21.	<i>Hibiscus subdariffa</i> Linn.	Malvaceae	Mesta tenga	Fruit	It is used in treatment of dysentery, fever, dyspepsia.
22.	<i>Ipomoea quamoclit</i> Linn.	Covolvulaceae	Kunjalata	Leaves	Pounded leaves are used in treatment of piles.
23.	<i>Zanthoxylum oxyphyllum</i>	Rutaceae	Mejenga	Shoots	Shoot juice is used as antihelmentic
24.	<i>Solanum xanthocarpum</i> Schrad. &Wendl.	Solanaceae	Kantakori	Roots and leaves	Used in treatment of asthma, rheumatic pain and in chest pain.
25.	<i>Urena lobata</i> Linn.	Malvaceae	Borsoboraila	Roots and leaves	Root juice is used as diuretic and is good in rheumatic pain.
26.	<i>Xanthium strumarium</i> Linn.	Compositae	Ogaro	Roots and leaves	Used against chronic malarial fever, urinary trouble.
27.	<i>Garcinia lanceifolia</i>	Clusiaceae	Rupohi-thekera	Fruit	Used in treatment of dysentery.
28.	<i>Leucas aspera</i> Spreng.	Labiatae	Duron bon	Whole plant	Used in sinusitis.
29.	<i>Mirabilis jalapa</i> Linn.	Nyctaginaceae	Godhuligopal	Roots	Roots are used in dropsy.
30.	<i>Nasturtium indicum</i> Linn.	Brassicaceae	Bonhariah	Seed	Seed juice is used in kidney trouble.
31.	<i>Asparagus officinalis</i> Linn.	Liliaceae	Sotomool	Stem, Root	Stem is used as diuretic. Fresh root juice is used in urinary disorders, epilepsy, hysteria
32.	<i>Boerhavia repens</i> Linn.	Nyctaginaceae	Ponownowa	Leaves, Roots	Leaves are used in anemia, asthma, internal inflammation of intestine. Roots are used as antidotes to snake bite.
33.	<i>Eclipta prostrata</i> Roxb.	Compositae	Keheraj	Leaves	Leaf paste is used in preparation of hair tonic. Fresh leaves are eaten in dropsy, elephantiasis.
34.	<i>Lawsonia inermis</i> Linn.	Lythraceae	Jetuka	Leaves	Leaf paste promotes thickness of hair. It is commonly used against skin diseases.
35.	<i>Minosa pudica</i> Linn.	Mimosaceae	Lajukilota	Leaves	Leaf juice in combination with goat milk is good remedy for piles
36.	<i>Ocimum sanctum</i> (Linn.)	Lamiaceae	Tulsi	Leaves, Seeds	Leaf paste is applied to fingers to get relief from mild fever. Seeds are used in headache & dysentery. Leaf juice is also used as insect repellent.
37.	<i>Murraya koenigii</i> (Linn.) Spreng.	Rutaceae	Narasingha	Leaves	Leaf juice is used in diarrhea, dysentery, vomiting & digestion problems. It is also used as memory enhancer.
38.	<i>Diplazium esculentum</i> (Retz.)Sw.	Althyriceae	Dhekia	Leaves	Used in urinary disorders & to enhance sexual power
39.	<i>Tamarindus indica</i> Linn.	Caesalpiniaceae	Teteli	Flower	Flower juice in combination with milk is used in infertility problems
40.	<i>Mesua ferrea</i> Linn.	Clusiaceae	Nahar	Root	Juice of fresh root and stem bark in combination with goat milk promotes sperm production.
41.	<i>Terminalia arjuna</i>	Combretaceae	Arjun	Leaves, Bark	Fresh leaf juice is used in the treatment of ulcer. Bark paste is used in bone fracture
42.	<i>Terminalia chebula</i>	Combretaceae	Silikha	Fruit	Fruit juice is used as blood purifier and in stomachache
43.	<i>Aloe vera</i> (Linn.)	Liliaceae	Salkuwari	Leaves	Leaf paste is used in skin burn and stomach problems
44.	<i>Aegle marmelos</i> (Linn.)	Rutaceae	Bel	Root, Fruit	Root is used in seminal weakness, diarrhoea etc. Ripe fruit is used as an appetite stimulant
45.	<i>Capsicum frutescens</i> (Linn.)	Solanaceae	Kud-jolokia	Fruit	Fruit is used in dysentery and respiratory disorder.
46.	<i>Catharanthus roseus</i> (Linn.)	Apocynaceae	Nayantora	Leaves, Flower	Leaf juice in combination with honey is used in treatment of malignant tumor. Flower paste is used in healing of insect bite.
47.	<i>Citrus aurantifolia</i>	Rutaceae	Kajinemu	Fruit	Fruit is used in vomiting. Fruit juice with a pinch of salt is used in diarrhea.
48.	<i>Costus speciosus</i> (koen.)	Zingiberaceae	Jamlakhuti	Leaves, Rhizome	Leaves juice is used in otitis problem. Rhizome paste is used in skin diseases.
49.	<i>Curcuma domestica</i>	Zingiberaceae	Haladhi	Rhizome, Leaves	Rhizome paste is used as an antiseptic. Leaves juice with honey is used in cough and fever.
50.	<i>Datura stramonium</i> (Linn.)	Solanaceae	Bogadhotura	Fruit	Fruit juice is used in treatment of asthma and alopecia
51.	<i>Leucas aspera</i>	Lamiaceae	Doron	Leaves	Leaves juice is used in sinusitis.
52.	<i>Mentha arvensis</i>	Lamiaceae	Padina	Leaves	Leaves juice is used in nasal bleeding, skin problems and also as memory enhancer
53.	<i>Tabernaemontana coronaria</i>	Apocynaceae	Kathanda	Leaves, Flower	Leaves paste is used in headache. Flower juice is used in cataract.

54.	<i>Phlogacanthus tubiflorus</i> (Nees.)	Acanthaceae	Rangabakhartita	Leaves	Leaf juice is used to control common cold. Leaf crush is used against louse and nit.
55.	<i>Vitex negundo</i> (Linn.)	Verbenaceae	Pachatia	Leaves	Leaves juice is used in fever and body weakness. It is also used to smoothen hair.
56.	<i>Phyllanthus niruri</i> (Linn.)	Euphorbiaceae	Bon amlokhi	Fruits, Root	The root juice in combination with milk is used in jaundice. Fruits are used as an appetite stimulant.
57.	<i>Phyllanthus acidus</i> (Linn.)	Euphorbiaceae	Halphali	Fruits	Fruit is used as liver tonic and blood purifier.
58.	<i>Syzygium cumini</i>	Myrtaceae	Jam	Seeds, Fruit	Seed is used in diabetes mellitus. Fruit juice is used in piles.
59.	<i>Spilanthes paniculata</i>	Asteraceae	Suhanibon	Flowers	Flowers are used in gum pain.
60.	<i>Adhatoda vasica</i> (Nees)	Acanthaceae	Bogabakhartita	Leaves and flowers	Leaf juice is used in treatment of cold and cough. Flowers are effective blood purifiers.

Table 2: List of families with number of Medicinal plants from Bhergaon sub-division Assam.

Sl no.	Family	No. of species
1	Caesalpinaceae	2
2	Amaranthaceae	2
3	Liliaceae	3
4	Apiaceae	1
5	Verbenaceae	3
6	Crassulaceae	1
7	Basellaceae	1
8	Araceae	1
9	Compositae	4
10	Acanthaceae	3
11	Rubiaceae	1
12	Solanaceae	5
13	Cannabaceae	1
14	Convolvulaceae	2
15	Zingiberaceae	2
16	Cucurbitaceae	1
17	Malvaceae	2
18	Rutaceae	4
19	Clusiaceae	2
20	Labiatae	1
21	Nyctaginaceae	2
22	Brassicaceae	1
23	Lythraceae	1
24	Mimosaceae	1
25	Lamiaceae	3
26	Althyraceae	1
27	Combretaceae	2
28	Apocynaceae	3
29	Zingiberaceae	2
30	Euphorbiaceae	2
31	Myrtaceae	1
32	Asteraceae	1

Table 3: Distribution of plant parts used in Bhergaon sub-division, Assam

Sl. No	Plant parts used	No. of species	Percentage
1	Leaves	33	42.85%
2	Flower	7	9.09%
3	Root	14	18.18%
4	Whole plant	4	5.16%
5	Fruit	10	12.96%
6	Rhizome	3	3.89%
7	Shoot	1	1.29%
8	Seed	3	3.89%
9	Stem	1	1.29%
10	Bark	1	1.29%
	Total	77	100%

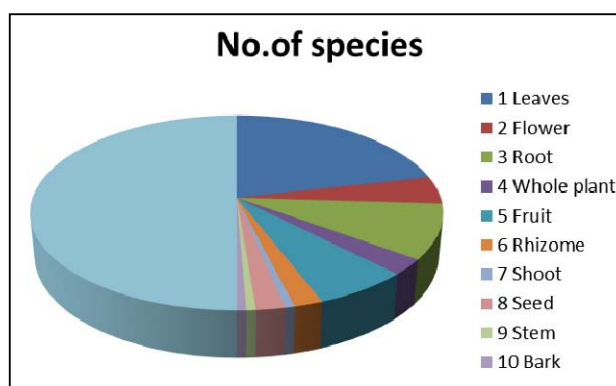


Fig 1: Percentage of plant parts used

Discussion

Apart from the medicinal uses most of the plant parts were found to be used in culinary preparation such as delicacy and some of them were used as spices. Based on the availability of plant parts, the survey was conducted in rainy season namely July- August. During the survey most of the people were approachable to share their knowledge because of their conservative believes. The preparation of medicine involves mixing of one or more ingredients extracted from various plant parts. This plant not only helps in relieving disease but also fetch sometimes a good market price.

Conclusion

The present survey reveals rich traditional medicinal knowledge of Bodo community of lower Assam. It has also been expected that most of the indigenous people still depend on the herbal remedies for the day to day health. Medicinal plants represent and contribute significantly to human health. Use of medicinal plants by Assamese people has a long history and here we have reported about 60 medicinal plant species used in the traditional health care systems of Assam. This is the most comprehensive review to date and this might provide a base for further knowledge related to medicinal plants of Assam. The multiple uses reported in this survey indicate that scientific investigations are useful in the validation of traditional medicinal practices for the development of new therapeutic agents from medicinal plants of Assam.

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