



**TRADITIONAL MEDICINAL USES OF MONOCOT PLANTS BY BODO COMMUNITY
IN UDALGURI DISTRICT (BTAD), ASSAM, NORTH EAST INDIA**

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ABSTRACT

The present study deals with the traditional ethno-medicinal uses of monocot plants by the Bodo tribes of Udalguri District area. Study was conducted in the district during 2014-15 with the standard methodology. A total 48 plant species monocotyledonous group belongs to 17 families were found from the investigation. The species described in the present study was used for the cure of various diseases such as stomachic treatment, gonorrhoea, diarrhoea, diabetes, various skin diseases, jaundice, fungal infection, as antibacterial, germicidal, treatment of wounds, ulcer, respiratory disorders, fever, tooth-ache, gastric problems, bone fracture etc. there is need to conserve the plant resources on the ground level for the benefit of human beings and sustainable development of environment.

KEYWORDS: Ethnobotany, Flora, Indigenous knowledge, Participatory Rural Appraisal.

INTRODUCTION

Different medicinal plants and their uses are greatly well-known to Indigenous communities of different parts of the world they are expert for mounting inventive practices and products from their surroundings (Tiwari et al. 2010). Ethnobotanical studies typically focus on recording the knowledge of traditional societies in remote places (Hodges and Bennett, 2006). Medicinal plants are important prosperity of Indian forest which is largely collected as raw materials for production of drugs. Ethnobotany involves the mere relationship between indigenous people with the flora and vegetation of the region.

Northeast region of India is much rich in monocotyledonous flora whereas NE Region is known as the "Floristic Gateway" of India and also rich in ethnobotanical study for its diverse aboriginal communities and tribes. These areas have ample scope for ethnobotanical study due to its rich folklore. The Bodo community is important tribe of Udalguri District. Uses of plant made by different tribes particularly by the Bodos are still unknown hence an attempt has made to explore some of the unknown species of the plants by the local people of this region. The tribal people used many plants for their own traditional lore. Uses of plant made by the Bodos are still unknown hence an attempt has made to explore some of the unknown monocot species of the plants by the local people of this region. However, many such plants yet to be reported from this area. Therefore, a study was undertaken to explore the

knowledge of the plants used by the Bodo tribes, particularly Udalguri district (BTAD) area.

MATERIALS AND METHODS

Study site

The present study was undertaken to document traditional uses of plants of Bodo tribe. The field study was carried out in 10 villages of Udalguri district (BTAD) of Assam, located in latitude 26° 30'-20° 40'N and longitude 92° 15'-92° 23' E, mostly inhabited by Bodo. The average altitude of the district is 590 feet. The annual rainfall varies from 1500 mm to 2600 mm. The total geographical area of the district is about 1,985,69 sq km. The district position of the Udalguri district is bounded by Bhutan and Arunachal Pradesh towards North, Sonitpur district in the East, Darrang district in the South and Baska district in the west. The area is high plain land and covered with moderate forest towards northern part of the district.

Most of the plants had more than one part used in combination for medicinal purposes. These different plant parts are used in the form of fresh juice, latex, powder, paste, decoction, direct use for the cure of illness. Leaves were found to be the most useful part and applied frequently in the paste and juice for curing various ailments. During the investigation it was observed that the same plant used for the treatment of different disease. From the study site it was observed that almost all the people use some sort of medicinal plants in their everyday life.

These medicinal plants use to cure many types of ailments. Different medicinal plants are used for the management of several diseases like body pain, cough, jaundice, dysentery, ulcers, leprosy, diarrhea, piles, fever, asthma, malaria, headache, stomach trouble, hypertension, piles, bleeding, skin problems etc.

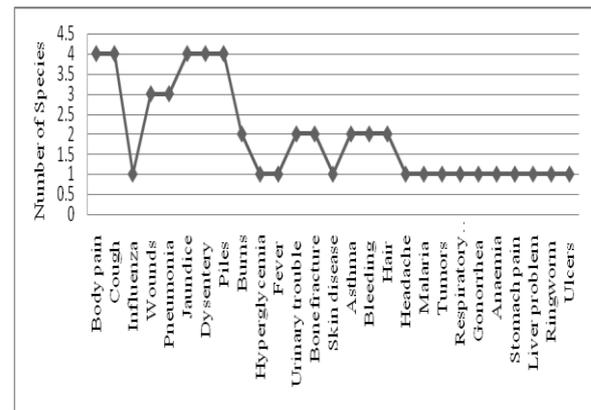


Figure 5. Plants used for different diseases.

During the study it was found that, the elder persons (above 50 years of age) of the family possess more knowledge regarding medicinal plants use and identification of than that of younger generations. Data also showed that, females knew more about the usage of medicinal plants than that of male. Most of the plant parts used for curing ailments is gathered from forest, but some rural people are keen to raise certain species with medicinal properties.

Table-I: Ethno-medicinal monocot plant used by traditional healers from remote Bodo villages of Udalguri district (BTAD) Assam, India.

Sl No.	Botanical name	Local name (Bodo)	Family	Habit	Parts used	Mode of preparation	Traditional use/ Name of disease
1	<i>Allium cepa</i> L.	Sambram	Alliaceae	H	Bulb	Cut a bulb into pieces + one spoon mustered oil mixed to it, then roasted for a few minutes. It is applied on infected area	Body pain, wounds, sudden cut and in body heating
2	<i>Allium sativum</i> L.	Sambram gufur	Alliaceae	H	Bulb	4-5 pieces of garlic + kalajira (<i>Cuminum sp.</i>) fried together until it become yellow. 2-3 pieces of garlic and 4-5 leaves of <i>Ocimum sanctum</i> mix rawly. Juice of raw garlic. Eating pieces of raw garlic everyday with meal.	Influenza, cold and cough, fever. Applied for baby cry. Abscess, earache, sprains. Hyperglycemia.
3	<i>Crinum defixum</i> Ker.Gawl.	Hagrani Sambram	Amaryllidaceae	H	Bulb, Leaves	Bulb is covered in sudden burnt area of the body. Juice of leaves applied minimum twice a day	Burns. Earache, skin diseases and to reduce inflammation.
4	<i>Crinum pratens</i> Herb. (= <i>C. asiaticum</i> L.)	Khanari	Amaryllidaceae	H	Leaves, Rhizome, Tuber	On the dorsal side of the fresh leaves polishing castor oil/mustard oil hit into the fire massaged the aching muscles and swelling part for two times. Decoction of tuber drink one cup to relief sudden stomach pain.	Pain of the vein and arteries. Stomach pain, diseases of spleen

5	<i>Acorus calamus</i> L.	Boch	Araceae	H	Rhizome, Leaves	Equal portion of each fresh rhizome + <i>Ocimum</i> (Tulsi) + Gon - gaithen are grind together and with the juice massage body of the baby gently. Fresh juice of leaves with gently warming water. Decoction of rhizome.	It is used to stop afraid and cry. Baby bathing. Skin affections, hair washing.
6	<i>Alocasia indica</i> (Lour.) Koch.	Thaso manai	Araceae	H	Tuber	Tuber of it + tuber of <i>Homalomena aromatica</i> + whole plant of <i>Equisetum</i> (approximately 50 gm) are grind together with a few drops of water and then allow to plastered / wrapped infected part of bone fracture until it dried.	Rejoin in bone fracture
7	<i>Colocasia esculenta</i> (L.) Schott.	Thaso gwswm	Araceae	H	Whole plant	Edible culinary. Ground corm is apply on cuts, burns and for relief of honeybee and scorpion sting.	Anaemia Body pain.
8	<i>Homalomena aromatica</i> (Roxb.) Schott.	Thaso thukhru	Araceae	H	Tuber	Sufficient amount of tuber + <i>Alocasia indica</i> + <i>Equisetum</i> + Aloevera are grind together then paste over infected area and wrapped tightly for 3 days interval until re join for 2-3 months	bone fracture
9	<i>Lasia spinosa</i> Thw	Sembra	Araceae	H	Young shoot	Delicious culinary	Pneumonia
10	<i>Typhonium trilobatum</i> (L.) Schott.	Bolamuli	Araceae	H	Tuber	100 gm tuber with a 5gm of castings of <i>Pheretima</i> (earthworm) grind and mix nicely. Then the mixture is paste over suck by the mollusos (Ganler)	Pain, swelling.
11	<i>Asparagus racemosus</i> Willd.	Satmul	Asparagaceae	Cl	Roots	Decoction of roots are prescribed to drink in empty stomach everyday in the early morning.	piles, jaundice, urinary disorders
12	<i>Ananas comosus</i> (L.) Merr.	Rwimali/ Anaros	Bromeliaceae	H	Shoot	A shoot of it is grind + 1 glass juice of <i>Saccharum officinarum</i> L. (Sugarcane) mix properly and the extract is used 2 spoonfull twice a day after meal.	Hi cough.
13	<i>Commelina benghalensis</i> L.	Gdeb bifang	Commelinaceae	H	Leaves, stem, young shoot	Juice of leaves used externally on human skin. The juice exceded from the stem. Young shoot are make curry with magur fish for weak patient after fever.	Leprosy, skin irritation. Eye sore. Used to get body strength.
14	<i>Costus speciosus</i> (koen.) Smith.	Daola khungur	Costaceae	H	Rhizome	Equal portion minimum 100g each rhizome of <i>costus speciosus</i> + leaves of <i>Cajanus cajan</i> + <i>Averrhoa carambola</i> are grind together. Extracted juice is boil and used twice a day after meal	Jaundice

15	<i>Cyperus rotundus</i> L.	Khaya hagra	Cyperaceae	H	Rhizome	Mixture of 200 gm of rhizome of <i>Cyperus rotundus</i> & <i>costus speciosus</i> +bark of <i>Azadirachta indica</i> are grind. A juice were boil in litre of water and reduced the volume to one fourth. 2-4 spoons of decoction were prescribed after meal for 10 days. During those days diet should be pure vegetation.	Stomach pain, dysentery.
16	<i>Ottelia alismoides</i> (L.) Pers.	Dainithalir	Hydrocharitaceae	A.H.	Leaves	Leaves are mixed more or less 1kg + shoot of <i>Ipomea aquatic</i> (mande) + <i>Allium sativum</i> + <i>Lasia spinosa</i> + <i>Costus speciosus</i> + <i>Ocimum sanctum</i> + <i>Centella asiatica</i> + <i>Typha angustata</i> were grind with sufficient water. A juice was boiling in a liter of water ½ glass of decoction were prescribed twice / thrice a day after meal.	Pneumonia
17	<i>Vallisneria spiralis</i> L.	Daini kharai	Hydrocharitaceae	A.H	Whole plant	Whole plant + <i>Ottelia alismoides</i> + water fern + <i>centella asiatica</i> + <i>Hydrocotyle sibthorpioides</i> + <i>Anagallis arvensis</i> L. (Sonafuli) are mixed equal amount each to make 1kg dried and prepared bolus dried under the sunlight. 4-5 bori are boil in water ½ glass are prescribed twice a day after meal.	Itching, meascles
18	<i>Curculigo orchoides</i> Gaertn.	Hagrani goi	Hypoxidaceae	H	Leaves, Rhizome	Decoction of leaves are apply over the infected area. Juice of rhizome is prescribed.	Whitlows, piles, jaundice, asthma.
19	<i>Belamcanda chinensis</i> (L.) DC.	Surjokranti	Iridaceae	H	Roots	Sufficient amounts of Roots + <i>Houttuynia cordata</i> Thunb. (Maisundri) + <i>centella asisatica</i> (L.) urban (manimuni geder) + <i>Hydrocotyle sibthopioides</i> lamk. (manimuni fisa) are grind together. Decoction is boiled in water and prescribed ½ glass twice a day after meal.	respiratory problem, asthma
20	<i>Aloe barbadensis</i> Mill.	Sal-khungri	Liliaceae	H	Leaves	Decoction of leaves are apply over the body externally. Internally leaf juice are prescribed.	Burns, wounds, sore eyes, skin disorders. Piles, chronic ulcers, liver and spleen enlargement.
21	<i>Musa balbisiana</i> Colla.(= <i>M.sapi entum</i> var. <i>pruinosa</i> king.ex. Cowan.)	Thalir athia	Musaceae	H	Core of plant body	A little amount of central core from stem and <i>Costus speciosus</i> are grind and paste on human head externally.	Headache
22	<i>Dendrobium aphyllum</i> (Roxb.)	Daothu bibar	Orchidaceae	Ep. H.	Leaves	Leaves (equal amount each) + <i>Clerodendrum viscosum</i> (mwkhwna) + <i>Crinum pratens</i>	body pain

	Fischer.					(khanari) + <i>Murrya koenigii</i> are grind together. Decoction of it prescribed to 2 spoons twice a day after meal.	
23	<i>Axonopus compressus</i> (Sw.) P.Beauv.	Dabsa hagra	Poaceae	H	Whole plant	Whole plant of it + <i>Cynodon dactylon</i> + roots of <i>Carica papaya</i> L. (mwdwmful) are mixed equally to 1 kg grind. A juice put in raw cow milk (250ml) prescribed to drink morning, noon and evening before food.	Bleeding
24	<i>Chrysopogon aciculatus</i> (retz.) Trin.	Samthai	Poaceae	H	Roots	Decoction of roots used in sudden stomach pain. Roots are pull out facing eastern on Saturday and Tuesday + bones of wild animal are put into the Tabis and wear on neck.	Stomach pain. Khetra (causing horror).
25	<i>Cymbopogon nardus</i> (L.) Rendle.	Chitranela	Poaceae	H	Leaves	The infusion of the leaves is important	Stomachic, carminative
26	<i>Cynodon dactylon</i> (L.) Pers.	Daori hagra	Poaceae	H	Whole plant	The juice of the plant is applied externally to fresh cuts and wounds. A few branch of the plant deep with a broze coin into a glass of water whole night then prescribed to drink empty stomach.	Bleeding urinary trouble
27	<i>Imperata cylindrica</i> (L.) P. Beauv.	Thuri	Poaceae	H	Roots	Roots extract prescribed to drink.	diarrhea, dysentery, gonorrhoea
28	<i>Saccharum officinarum</i> L.	Khuser	Poaceae	S	Culm	Juice of culm is drunk.	jaundice, urinary trouble, hiccough
29	<i>Saccharum spontaneum</i> L.	Khasi hagra	Poaceae	S	Leaves, roots	Leaves bundle burn with elephant's faecal matter to allow more smoke to warm foot. Roots extract is internally used.	irritating sore in foot, body pain.
30	<i>Monochoria hastate</i> (L.) Solms.	Ajwnai	Pontederiaceae	A.H.	Flower, Leaves	Flowers as delicious curry. Leave juice is given to children.	Alterative and tonic. secreting more saliva
31	<i>Typha angustata</i> Chaub and Bory.	Ala	Typhaceae	A.H	Flower, Shoot	Flowers allow drying properly under sunlight, burning them taken heat on foot. Young shoots are eaten by human.	Itching, ringworm. stomach problem, pain
32	<i>Alpinia nigra</i> (Gaertn.) Burt. [= <i>A.allughas</i> (Ret z.) Rose.]	Tharai	Zingiberaceae	H	Rhizome	Rhizomes are eaten rawly	Respiratory troubles.
33	<i>Curcuma amada</i> Roxb.	Thaiju haizeng	Zingiberaceae	H	Rhizome	Rhizomes are eaten rawly.	Dysentery
34	<i>Curcuma aromatic</i> Salisb.	Khathri phul	Zingiberaceae	H	Rhizome	Juice extracted from rhizome (200g) of it + <i>Zingiber officinale</i> (200g) were prescribed 2 spoons twice a day after meal for one week.	Dysentery
35	<i>Curcuma domestica</i> Valet (= <i>C. longa</i> L.)	Haldi	Zingiberaceae	H	Rhizome	Grinded raw rhizome with milk and with honey treat many diseases.	Antitumor, arthritis, piles, antibacterial, blood purifier.

36	<i>Kaempferia galanga</i> L.	Sonfera	Zingiberaceae	H	Rhizome, tuber	Decoction of rhizomes + <i>Centella asiatica</i> + <i>Hydrocotyle sibthorpioides</i> + dalmisri + bismuri are prescribe to boil in a little water and to have 3 times a day after meal.	treat typhoid, pneumonia, malaria, stomachic
37	<i>Kaempferia rotunda</i> L.	Khatri rothing	Zingiberaceae	H	Tuber	Raw tubers are used to eat. Rhizome extract is given on head	Gastric complaints, tumors. Growth of hair.
38	<i>Zingiber officinale</i> Rose.	Haizeng	Zingiberaceae	H	Rhizome	Rhizome + <i>Piper nigrum</i> L. + stem of <i>piper betel</i> L. + <i>Syzygium aromaticum</i> L. + shoot of <i>Leucas aspera</i> + <i>Ocimum sanctum</i> + <i>Piper longum</i> L. are grind together into 100 ml of water to mix properly. The dried tablet prescribed to deep in honey and 1-2 tablets asked to swallow 3 times in a day.	dry cough

CONCLUSION

Almost in every village, there exists a person who has a good knowledge of medicinal plants and is capable of healing diseases by applying medicine obtain from plants. They are called "Oja" (traditional healers). It is found that the practices follow generation to generation. The traditional healers were using these plants are either used singly or in combinations with some other plants or plant parts to treat the various ailment and diseases. It is seen that the various plants used by the Bodos are found nearby their settlement. Though the traditional plants used by them are wild, they domesticated and conserved them nearby their houses. The traditional methods of treatment are still prevalent within tribal communities of Assam. But the folk culture and tradition is now under serious threat and gradually losses the traditional practices due to the younger generations are gradually traditional migrating to town and cities. So, the evaluation of Bodo knowledge, the conservation of monocot plants and scientific documentation has great significance and become an essential constituent. There is an urgent need to protect the information, traditional knowledge and wisdom for conservation of various valuable monocotyledonous plants in near future.

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ASSESSMENT OF MONOCOT PLANT SPECIES DIVERSITY OF UDALGURI DISTRICT, BTAD, ASSAM**B. Daimari, S.I. Bhuyan & B.N. Baruah**Department of Botany, University of Science and Technology, Meghalaya
9th Mile, Ri-Bhoi, Meghalaya-79310, India(Received on Date: 21st March 2016Date of Acceptance : 5th May 2016)**ABSTRACT**

Present study was conducted to collect, identify and document the monocot flora of Udalguri District (BTAD) Assam located in latitude 26°30′- 26°40′N and longitude 92°15′- 92°23′E. Survey of monocot plants of the district were carried out during 2014-15. Plant materials have been collected for each of the species from all the study sites as per standard taxonomic procedure. Collected specimens were identified from Botanical Survey of India (BSI), Shillong and Department Botany, USTM by means of taxonomic literature and authentic herbarium specimen. A total of 141 monocotyledonous plants of 98 genera belong to 11 families have been found in the investigation. Family poaceae comprises maximum number of plant species (65). Most of the species are found in terrestrial ecosystems than the aquatic habitat. A total 4 epiphytic species found grown on the tree.

Key words: Ethnobotany, Floristic component, Habitat destruction, North east, Poaceae.

No:of Tables : 2**No:of Figures : 3****No: of References: 1**

INTRODUCTION

Monocotyledons in contrast to the Dicotyledons possess single cotyledon in embryo, parallel leaf venation, usually trimerous flowers on various kinds of underground stems. The leaves are long and with sheathing bases usually. The grass habit is the characteristic of the families Cyperaceae, Poaceae and Juncaceae, it is marked the slender tufted leaves arising from slender aerial stems and rhizomes. The North-eastern region of India enjoys interesting geographic and climatic conditions with one of the moistest tropical forest on one hand and temperate and alpine vegetation on the other, supporting a large variety of flora, thus the region could also be rich in monocot flora. North-east region is very much rich in flora whereas N.E. region is known as the "Floristic Gateway" of India. These areas have ample scope for monocot floral study due to its rich vegetation. Udalguri is an area located in the North Bank of Brahmaputra River in the State of Assam in Northeast region of India, by the foothills of Bhutan and Aurnachal Pradesh. The area is high plain land and covered with moderate forest towards northern part of the district. Our knowledge regarding their taxonomy, ethnobotany of Udalguri District, (BTAD) Assam is inadequate where as the monocot vegetation of this area is quite rich. No works have published on monocot flora in this area. So, the present work has been undertaken to invent the monocot plant diversity in Udalguri District (BTAD) Assam.

Materials and methods

Study site

Udalguri district (BTAD, Assam) is located in latitude 26°30′- 26°40′N and longitude 92°15′-92°23′E. the average altitude of the district is 590 feet. The total geographical area is above 1,985,68 sq.km and the annual rainfall varies from 1500 mm to 2600 mm. The district is bounded by Bhutan and Aurnachal Pradesh towards North. Sonitpur district in the East. Darrang district in the South and Baksa district in the West.

Methodology

Survey and collection

Survey of monocot plants of Udalguri District were carried out during 2014-15. Regular field visits were made at once in a week to collect the plant parts, photographs, GPS points, information such as plant uses by local people, habitat, etc. Plant materials have been collected for each of the species from all the study sites as per standard taxonomic procedure of Jain and Rao (1977).

Identification

Collected samples were processed into the mounted herbarium sheets following the methods of Jain and Rao (1977) herbarium sheets. The mounted specimens were identified from Botanical Survey of India (BSI), Shillong and Department Botany, USTM by means of taxonomic literature and authentic herbarium specimen.

Results and Discussion

In the present study a total of 141 monocotyledonous plants of 98 genera belong to 18 families have been found (Table 2). Maximum number of species (65) belongs to the poaceae, followed by cyperaceae (36), Zingiberaceae (9), Araceae (6), Orchidaceae(4), Commelinaceae (4) (Table 1) etc. Nowhere else in the study area poaceae and cyperaceae family comprise a significant floristic component. Most of the families have only a single species in study area. Habit of plants area tree (3), shrub

(18), herb (117), climber (3) (Table 2) & (Figure 2). Most of the species are found in terrestrial ecosystems than the aquatic habitat. A total 4 epiphytic species found grown on the tree (Figure 3). Species per genus is found to be highest in Cyperaceae family, followed by Amaryllidaceae, Commelinaceae, Orchidaceae, Zingiberaceae, Poaceae etc. and minimum 1.00 found in other 12 family such as Araceae, Cannaceae, Eriocaulaceae, Iridaceae, Juncaceae etc. (Table 1).

Table 1. No. of species and genera per family

Sl. No.	Families	No. of Genera	No. of Species	Species/genus
1	Amaryllidaceae	2	3	1.50
2	Araceae	6	6	1.00
3	Arecaceae	1	1	1.00
4	Cannaceae	1	1	1.00
5	Commelinaceae	3	4	1.33
6	Costaceae	1	1	1.00
7	Cyperaceae	13	36	2.77
8	Dioscoreaceae	1	1	1.00
9	Eriocaulaceae	1	1	1.00
10	Iridaceae	1	1	1.00
11	Juncaceae	1	1	1.00
12	Musaceae	1	1	1.00
13	Nazadaceae	1	1	1.00
14	Orchidaceae	3	4	1.33
15	Poaceae	51	65	1.27
16	Pontederiaceae	3	3	1.00
17	Typhaceae	1	1	1.00
18	Zingiberaceae	7	9	1.29

Table. 2. Monocot plant species enumerated in the study site

Sl No	Species	Family	Habit	Habitat
1	<i>Acorus calamus</i> L.	Araceae	S	T
2	<i>Alocasia indica</i> (Lour) Koch.	Araceae	H	T
3	<i>Colocasia esculenta</i> (L) Schott	Araceae	H	T
4	<i>Pistia stratiotes</i> L.	Araceae	H	A
5	<i>Typhonium trilobatum</i> (L.) Schott.	Araceae	H	A
6	<i>Crinum defixum</i> Ker. Gawl.	Amaryllidaceae	S	T
7	<i>Crinum pratens</i> Herb.	Amaryllidaceae	S	T
8	<i>Commelina benghalensis</i> L.	Commelinaceae	H	T
9	<i>Commelina diffusa</i> Burm.	Commelinaceae	H	T
10	<i>Commelina erecta</i> L.	Commelinaceae	H	T
11	<i>Floscopa scandens</i> Lour	Commelinaceae	H	T
12	<i>Bulbostylis barbata</i> Clarke	Cyperaceae	H	T
13	<i>Carex cruciata</i> Wahlenb.	Cyperaceae	H	T
14	<i>Cyperus albobstriatus</i> Schrad.	Cyperaceae	H	T
15	<i>Cyperus capitatus</i> Vand.	Cyperaceae	H	T
16	<i>Cyperus compactus</i> Retz.	Cyperaceae	H	T
17	<i>Cyperus cyperinus</i> (Retz.) Surinp.	Cyperaceae	H	T
18	<i>Cyperus digitatus</i> Roxb.	Cyperaceae	H	T
19	<i>Cyperus distans</i> L.	Cyperaceae	H	T
20	<i>Cyperus flavidus</i> Retz.	Cyperaceae	H	T
21	<i>Cyperus imbricatus</i> Retz.	Cyperaceae	H	T
22	<i>Cyperus iria</i> Linn.	Cyperaceae	H	T
23	<i>Cyperus kyllinga</i> Euds.	Cyperaceae	H	T
24	<i>Cyperus michelianus</i> (L)	Cyperaceae	H	T
25	<i>Cyperus pilosus</i> Vahl.	Cyperaceae	H	T
26	<i>Cyperus pumilus</i> Linn.	Cyperaceae	H	T
27	<i>Cyperus rotundus</i> Linn.	Cyperaceae	H	T
28	<i>Cyperus sanguinotentus</i> Vahl.	Cyperaceae	H	T
29	<i>Cyperus silletensis</i> Nees.	Cyperaceae	H	T
30	<i>Cyperus sulcinux</i> C.B.Clarke	Cyperaceae	H	T
31	<i>Cyperus tenuispica</i> Steud.	Cyperaceae	H	T
32	<i>Eleocharis congesta</i> D.Don.	Cyperaceae	H	T
33	<i>Eriophorum comosum</i> Wall.	Cyperaceae	H	T
34	<i>Fimbristylis aestivalis</i> Vahl.	Cyperaceae	H	T
35	<i>Fimbristylis complanata</i> (Retz.) Link.	Cyperaceae	H	T
36	<i>Fimbristylis dichotoma</i> (L.)Vahl.	Cyperaceae	H	T
37	<i>Fimbristylis diphylla</i> Vahl.	Cyperaceae	H	T
38	<i>Fimbristylis littoralis</i> Gaud.	Cyperaceae	H	T
39	<i>Fimbristylis miliacea</i> (Burm) Vahl.	Cyperaceae	H	T
40	<i>Fuirena umbellata</i> Rottb.	Cyperaceae	H	T
41	<i>Kyllinga brevifolia</i> Rottb.	Cyperaceae	H	T
42	<i>Lipocarpa argentea</i> Br.	Cyperaceae	H	T
43	<i>Mariscus paniceus</i> Vah.	Cyperaceae	H	T

44	<i>Rhynchospora corymbosa</i> (L.) Britton.	Cyperaceae	H	T
45	<i>Rhynchospora rubra</i> (Lour) Makino.	Cyperaceae	H	T
46	<i>Scirpus articulatus</i> L.	Cyperaceae	H	T
47	<i>Scleria poaeformis</i> Ritz	Cyperaceae	H	T
48	<i>Eriocaulon quinguangulare</i> Linn.	Eriocaulaceae	S	T
49	<i>Juncus articulatus</i> L.	Juncaceae	H	T
50	<i>Aerides odoratum</i> Lour.	Orchidaceae	H	E
51	<i>Dendrobium aphyllum</i> (Roxb) Fischer.	Orchidaceae	H	E
52	<i>Dendrobium fimbriatum</i> Hook.	Orchidaceae	H	E
53	<i>Rhynchostylis retusa</i> (L.) Bl.	Orchidaceae	H	E
54	<i>Acrocerus munroanum</i> (Balansa) Henn.	Poaceae	H	T
55	<i>Alopecurus aequalis</i> Sobol.	Poaceae	H	T
56	<i>Andropogon jwarancusa</i> Jones	Poaceae	H	T
57	<i>Andropogon micronthus</i> Kunth	Poaceae	H	T
58	<i>Apluda mutica</i> L.	Poaceae	H	T
59	<i>Arundenella benghalensis</i> (Spreng) Druce.	Poaceae	S	T
60	<i>Arundinella khasiana</i> Nees ex. Steud.	Poaceae	S	T
61	<i>Axonopus compressus</i> (Sw) Beauv.	Poaceae	H	T
62	<i>Capillipidium parviflorum</i> Stapf.	Poaceae	H	T
63	<i>Centothecia lappacea</i> (L.) Desv.	Poaceae	H	T
64	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	H	T
65	<i>Coix lacryma - jobi</i> Linn.	Poaceae	H	T
66	<i>Cryptococcum accrescens</i> (Trin) Stapf.	Poaceae	H	T
67	<i>Cryptococcum patens</i> (Linn) A.Camus	Poaceae	H	T
68	<i>Cymbopogon jwarancusa</i> Schult Syn.	Poaceae	H	T
69	<i>Cymbopogon khasianus</i> Hack.	Poaceae	H	T
70	<i>Cynodon dactylon</i> (Linn) Pers.	Poaceae	H	T
71	<i>Cynosurus cristatus</i> L.	Poaceae	H	T
72	<i>Cyrtococcum accrescens</i> Stapf.	Poaceae	H	T
73	<i>Dactyloctenium aegyptium</i> (L) Beauve.	Poaceae	H	T
74	<i>Dendrocalamus hookeri</i> Munro.	Poaceae	T	T
75	<i>Digitaria pedicellaries</i> Prain.	Poaceae	H	T
76	<i>Digitaria pruriens</i> Buse.	Poaceae	H	T
77	<i>Dimeria ornithopoda</i> Trin	Poaceae	H	T
78	<i>Echinochloa colonum</i> (L) Link	Poaceae	H	T
79	<i>Echinochloa crus pavonis</i> Schult	Poaceae	H	T
80	<i>Echinochloa stagnina</i> P. Beauv	Poaceae	H	T
81	<i>Eleusine indica</i> Gaert	Poaceae	H	T
82	<i>Eragros japonica</i> Train	Poaceae	H	T
83	<i>Eragrostis atrovirens</i> (Desf) Trin. ex. Steud.	Poaceae	H	T
84	<i>Eragrostis coartata</i> Stapf.	Poaceae	H	T
85	<i>Eragrostis gangetica</i> (Roxb) Steud.	Poaceae	H	T
86	<i>Eragrostis nigra</i> Nees ex. Steud	Poaceae	H	T
87	<i>Eragrostis tenella</i> (L) Beauv. ex. Schult.	Poaceae	H	T
88	<i>Eragrostis unioides</i> (Retz.) Nees ex. Steud.	Poaceae	H	T

89	<i>Hackelochloa granularis</i> O. Kuntze.	Poaceae	H	T
90	<i>Hemarthria protensa</i> Steud	Poaceae	H	T
91	<i>Heteripogon contatus</i> Linn	Poaceae	H	T
92	<i>Hymenachne assamica</i> Hitch	Poaceae	H	T
93	<i>Hymenachne pseudo- interrupta</i> C. Muell	Poaceae	H	T
94	<i>Imperata cylindrica</i> (L) Beauv	Poaceae	H	T
95	<i>Isachne miliacea</i> Roth ex. Roem, et. Shult, Syst.	Poaceae	H	T
96	<i>Ischaemum aristatum</i> Linn.	Poaceae	H	T
97	<i>Leersia hexandra</i> Sw.	Poaceae	H	T
98	<i>Microstegium ciliatum</i> (Trin) A. Camus.	Poaceae	H	T
99	<i>Oplisminus burmanis</i> P. Beauv.	Poaceae	H	T
100	<i>Oryza officinalis</i> Wall.	Poaceae	H	T
101	<i>Panicum sermentosum</i> Roxb.	Poaceae	H	T
102	<i>Paspalum conjugatum</i> Berg.	Poaceae	H	T
103	<i>Paspalum disticum</i> L.	Poaceae	H	T
104	<i>Paspalum longifolium</i> Roxb	Poaceae	H	T
105	<i>Pennisetum alopecuroides</i> Preang	Poaceae	H	T
106	<i>Pennisetum purpureum</i> Schum.	Poaceae	H	T
107	<i>Pennisetum typhoides</i> Stapf	Poaceae	H	T
108	<i>Phlum nodosum</i> Linn.	Poaceae	H	T
109	<i>Phragmites karka</i> Trin. ex.Steud.	Poaceae	H	T
110	<i>Poa khasiana</i> Stapf.	Poaceae	H	T
111	<i>Polytoca bracteata</i> Br.	Poaceae	H	T
112	<i>Pseudostachya polymorphum</i> Munro	Poaceae	H	T
113	<i>Saccharum procerum</i> Roxb.	Poaceae	H	T
114	<i>Saccharum spontaneum</i> L.	Poaceae	H	T
115	<i>Setaria glauca</i> (L.) P.Beauv	Poaceae	H	T
116	<i>Sporobolus diander</i> (Ritz.) Beauv	Poaceae	H	T
117	<i>Sporobolus indicus</i> R.Br.	Poaceae	H	T
118	<i>Themeda subsericans</i> Ridley.	Poaceae	H	T
119	<i>Urochloa ramosa</i> (L.) Nguyen	Poaceae	H	T
120	<i>Vetiveria zizanioides</i> (L) Nash.	Poaceae	H	T
121	<i>Eichhornia crassipes</i> Solms- Laub.	Pontederiaceae	H	A
122	<i>Monochoria hastata</i> (L.) Solms.	Pontederiaceae	H	A
123	<i>Typha angustata</i> Chaub and Bory.	Typhaceae	S	T
124	<i>Curcuma amada</i> Roxb.	Zingiberaceae	S	T
125	<i>Curcuma aromatica</i> Salisb.	Zingiberaceae	S	T
126	<i>Curcuma zedoaria</i> Roase.	Zingiberaceae	S	T
127	<i>Hedychium coronarium</i> Koenig.	Zingiberaceae	S	T
128	<i>Hedychium spicatum</i> Buch-Ham ex. Stn.	Zingiberaceae	S	T
129	<i>Kaempferia galanga</i> L.	Zingiberaceae	S	T
130	<i>Kaempferia rotunda</i> L.	Zingiberaceae	S	T
131	<i>Zingiber purpureum</i> Rose.	Zingiberaceae	S	T
132	<i>Zingiber zerumbet</i> (L.) J.E.Smith	Zingiberaceae	S	T
133	<i>Calamus flagellum</i> Griff.	Arecaceae	T	T
134	<i>Canna indica</i> L.	Cannaceae	S	T
135	<i>Costus speciosus</i> (Koen) Smith.	Costaceae	S	T

136	<i>Dioscorea esculenta</i> (Lour) Burkill.	Dioscoreaceae	C	T
137	<i>Belamcanda chinensis</i> (L.) DC.	Iridaceae	H	T
138	<i>Musa velutina</i> Wendl. & Drude.	Musaceae	T	T
139	<i>Naias major</i> L.	Nazadaceae	H	T
140	<i>Pandanus fascicularis</i> Lamk.	Pandanaceae	C	T
141	<i>Monochoria vaginalis</i> L.	Pontederiaceae	C	T

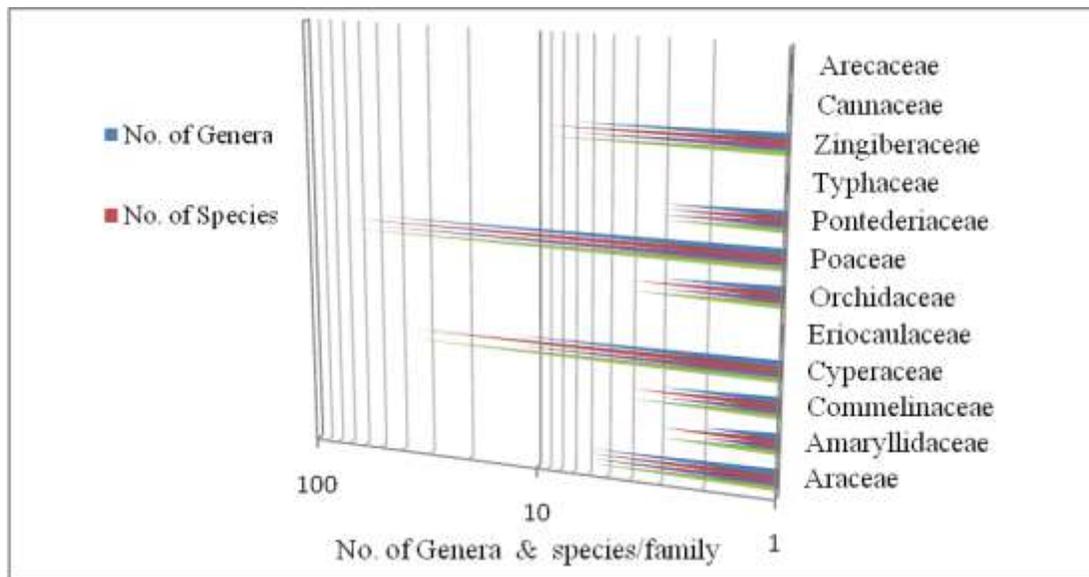


Figure 1. Number of monocot plant species & genera per family

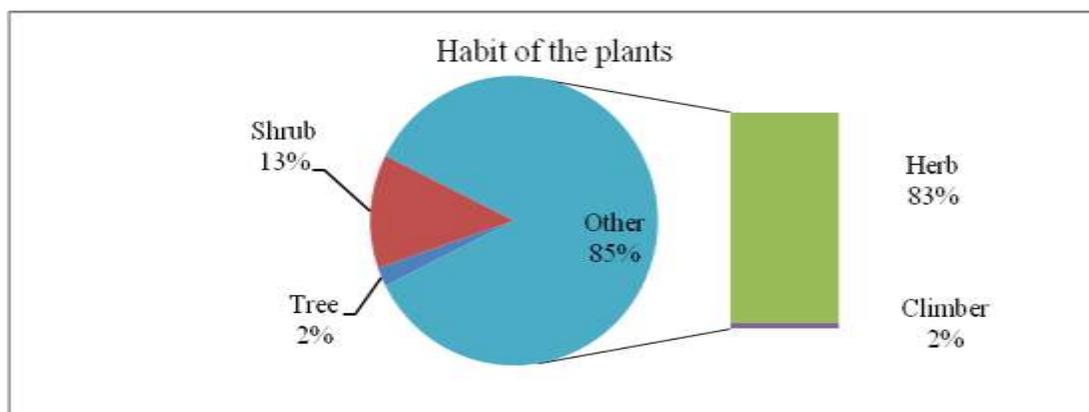


Figure 2. Habit of the plant species found in the study area

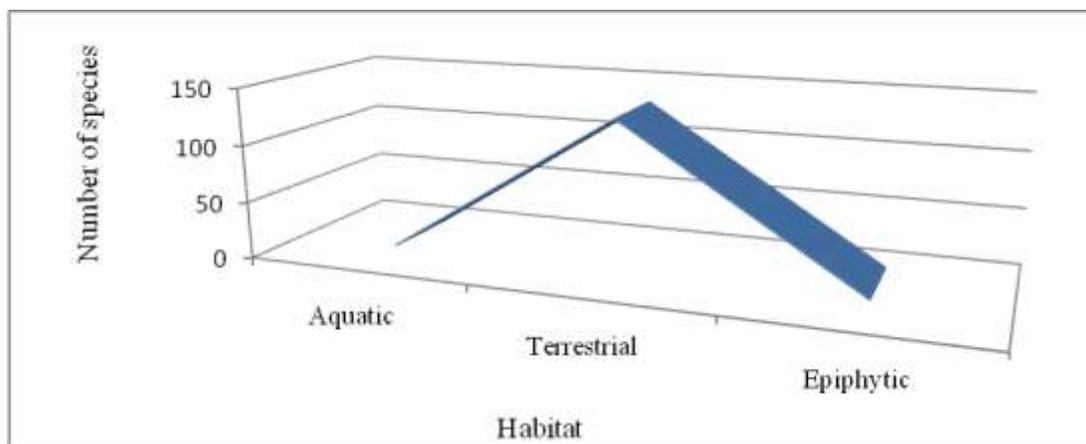


Figure 3. Broad habitat types of the plant species found in the different study area

Species like *Axonopus compressus*, *Chrysopogon aciculatus*, *Imperata cylindrical*, *Cynodon dactylon*, *Fimbristylis aestivalis*, *Cyperus kyllinga*, *Cyperus pilosus*, *Cyperus rotundus*, *Fimbristylis littoralis*, *Eleusine indica*, *Paspalum conjugatum* are highly abundant while *Polytoca bracteata*, *Curcuma amada*, *Hedychium coronarium*, *Monochoria vaginalis* are relatively less common in the study sites. Though the area is rich in monocot diversity, still the area diversity is in grave danger. In the present era, human beings are the most dangerous cause of destruction of the plant diversity. Habitat destruction is a major cause for biodiversity loss. Habitat loss is caused by deforestation, overpopulation, pollution and global warming. Species which are physically large and those living in forests or oceans are more affected by habitat reduction. Thus we can see that diversity which is

crucial for the well being of life on earth, is coming under the threat of many factors related to human activities. There is an urgent need to take action to protect the magnificent plant diversity. We must create economic policies in order to maintain the Earth's biodiversity and take appropriate measures to protect habitats and species.

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