



Folk Medicine as Practiced in Bagha Upazila of Rajshahi District, Bangladesh

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Abstract

The present paper focused on medicinal uses of plants by the local people of Bagha upazila of Rajshahi district, Bangladesh from July 2015 to October 2016. The information about medicinal uses of rural people was collected through interview. A total of 45 plant species under 44 genera and 30 families have been documented which were used for the treatment of 52 categories ailments/diseases. These medicinal plants were used by the rural people for the treatment of various diseases like anemia, asthma, blood pressure, boils, burning sensation, chicken pox, cough, constipation, diabetes, diarrhea, dysentery, eczema, fever, gonorrhoea, headache, heart disease, hair disease, jaundice, leprosy, piles, skin disease, sexual weakness, stomach pain, scabies, snake bite, toothache, ulcer, wounds and others. The results of the study revealed that the local peoples had rich knowledge of medicinal plants and were using the plants for their primary healthcare.

Keywords: Folk Medicine, Medicinal Plants, Drug Discovery, Bagha, Rajshahi, Bangladesh

INTRODUCTION

From the dawn of human civilization, plants are playing most important role as a source of medicine. Many studies have shown that over 80% of people in developing countries depend on the traditional medicines for their basic primary health (Bannerman, 1982; Faruque and Uddin, 2014; Getu *et al.*, 2015; Makinde *et al.*, 2015; Shanaj *et al.*, 2016; Hanako and Tsurho, 2016; Rajamurugan *et al.*, 2016; Wanqchuk *et al.*, 2016; Aziz *et al.*, 2016). WHO depicts that over 80% of world's population depends on biological resources for their primary healthcare demands (WHO, 1999). Exploitation of natural sources for the preparation of traditional medicine, and also of bioactive molecules and therapeutic agents has acquired a time-tested reputation (Paterson and Anderson, 2005). Of the various natural sources examined, plants proved to have high potential and yielded maximum number of commercially viable therapeutic agents (Koehn and Carter, 2005). Biodiversity

has been realized to be the key driven in natural source based drug discovery (Chin *et al.*, 2006).

Plants have always formed an excellent source for modern drugs. Bangladesh is rich in floral species and it has been estimated that more than 5,000 floral species exist within the country, and also has a rich history of traditional medicinal practices like Ayurveda, Unani, Folk medicine, and home remedies, all of which utilize plants to a major extent for treatment (Ghani, 2003). However, studies on ethno-medicinal and medicobotanical information in Bangladesh are at initial stage. Several ethno-medicinal studies in Bangladesh had been carried out by Alam (1992), Alam *et al.* (1996), Khisha (1996), Chakma *et al.* (2003), Choudhury and Rahmatullah (2012), Rahman *et al.* (2012), Faruque and Uddin (2014), Shahnaj *et al.* (2016), Jamila and Rahman (2016) and Uddin *et al.* (2001, 2004, 2006, 2008, 2012). The objective of this study was to document the

medicinal practices of local people to cure important diseases in Bagha upazila of Rajshahi district, Bangladesh.

MATERIALS AND METHODS

Study area: Bagha is an upazila of Rajshahi district in the division of Rajshahi, Bangladesh. It is located at 24°11'30"N 88°50'00"E 24.1917°N 88.8333°E. The climate of this area is generally tropical wet and dry climate, characterized by high temperatures, heavy monsoon, moderate rainfall and high humidity. The hot season commences early in March and continues till the middle of July. The maximum mean temperature observed is about 32 to 36 °C during the months of April, May, June and July and the minimum temperature recorded in January is about 7 to 16 °C. The highest rainfall is observed during the months of monsoon. The annual rainfall in the district is about 1,448 millimeters (BBS, 2011).

Data collection: A total of seventeen field trips were made for the documentation of medico-botanical knowledge during July 2015 to October 2016. 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 people such as local Kabiraj and elderly people. A total of 97 informants having an age range 19-68 years were interviewed using semi-structured interviewed method. Professionally they were peasant, day labor, farmer, betel leaf cultivators, house wives, medicine men, small shop keepers etc. Among them 39 were female and rest 58 were male. Regular field studies were made in the study area during the period. Plant specimens were collected with flowers and fruits and processed using standard herbarium techniques (Alexiades, 1996).

Plant identification: The identification of plant specimens was achieved through the help of taxonomic experts and by comparison with the identified herbarium specimens and available literatures, i.e. Ahmad *et al.* (2008-2009), Hooker (1875), Prain (1903), Kirtikar and Basu (reprint, 1987), Huq (1986) and Pasha and Uddin (2013). The voucher specimens are deposited at the Herbarium, Department of Botany, Rajshahi University for future reference.

RESULTS AND DISCUSSION

A total of 45 plant species belonging to 44 genera and 30 families were recorded and documented (Table 1). Recorded plants species were grouped as herbs (46.66%), trees (22.22%), shrubs (17.77%) and climbers (13.33%) (Figure 1). For each species scientific name, local name, family, ailments, formulations and part(s) used are provided. The most frequently used species for the treatment of different diseases are *Abroma augusta* (L.) f., *Achyranthes aspera* L., *Abrus precatorius* L., *Aloe vera* (L.) Burm. f., *Aegle marmelos* (L.) Corr., *Amaranthus spinosus* L., *Andrographis paniculata* Wall ex Nees., *Allium sativum* L., *Azadirachta indica* A. Juss., *Boerhaavia repens* L., *Bombax ceiba* L., *Centella asiatica* (L.) Urban, *Coccinia grandis* (L.) Voigt., *Cynodon dactylon* (L.) Pers., *Eclipta alba* (L.) Hassk., *Ficus racemosa* L., *Jatropha curcas* L., *Lawsonia inermis* L., *Momordica charantia* L., *Mimosa pudica* L., *Psidium guajava* L. *Syzygium cumini* (L.) Skeel., *Tamarindus indica* L., *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn., *Vitex negundo* L., *Wedelia sinensis* (Osbeck.) Merr. and *Zingiber officinale* Roscoe (Table 1). Uses of plant parts as medicine showed variation. Leaves (68.88%) were the leading part used in a majority of medicinal plants followed by stems 26.66%, roots 24.44%, bark 20.00%, whole plant 13.33%, seeds 13.33%, fruits 13.33%, latex 4.44%, bulb 4.44%, flower 4.44%, rhizomes 2.22%, petioles 2.22% and gum 2.22% (Figure 2). The survey had also recorded 52 categories of uses of 45 medicinal plants. Among them, 11 species were used to cure skin disease, 7 species for cough, each of 6 species for jaundice and diabetes, 5 species for toothache and dysentery in each. Twenty one categories of ailments were treated by two to four species and other twenty six categories of ailments were treated by only one species. Among the medicinal use of plants, the survey reported a good number of new uses those were not mentioned in the previous literatures (Yusuf *et al.*, 2009; Ghani, 2003; Khan and Huq, 1975; Khan, 1998).

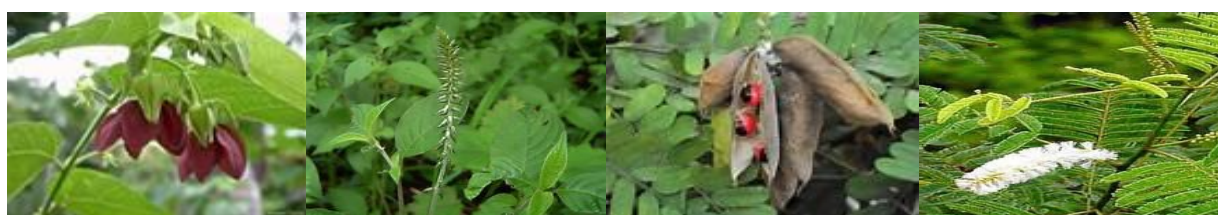
Distribution of medicinal plant species in the families shows variation. Euphorbiaceae was represented by 5 species and Apocynaceae is represented by 3 species. Each of Amaranthaceae, Fabaceae, Acanthaceae, Liliaceae, Apiaceae, Cucurbitaceae, Asteraceae, Lamiaceae and Myrtaceae is represented by 2 species while a single species in each was recorded by 19 families (Table 1). This finding of common medicinal plant families in the study is agreed with Anisuzzaman *et al.* (2007); Ghani (2003); Khan and Huq (1975), Khan (1998), Jamila and Rahman (2016), Shahnaj *et al.* (2016), Choudhury and Rahmatullah (2012), Faruque and Uddin

(2014), Nahar *et al.* (2016), and Yusuf *et al.* (1994, 2006, 2009).

The result of this information showed that these local people of Bagha Upazila of Rajshahi still depended on medicinal uses of plants for the treatment of anemia, asthma, blood pressure, burning sensation, chicken pox, cholera, cough, diarrhea, dysentery, diabetes, dog bite, eye infection, fever, gonorrhea, headache, indigestion, jaundice, leprosy, malaria, mouth ulcers, piles, paralysis, skin disease, scurvy, toothache, vomiting, wounds and many other diseases. From the result, it was revealed that

the collective efforts of ethno-botanists, phyto-chemists, pharmacologists and Pharmacognostical are needed to document and evaluate the efficacy and safety of the claims. To test the scientific validity of the herbal preparation or drugs, clinical studies are required to be conducted. This can establish the therapeutic properties of those preparations for safe and longer use. Moreover, the indigenous knowledge and uses of medicinal plants of a particular area have to be analyzed to develop appropriate management ex situ and in situ conservation measures for better utilization of natural resources.

Photograph of medicinal plants



Abroma augusta

Achyranthes aspera

Abrus precatorius

Acacia catechu



Acalypha indica

Aegle marmelos

Aloe vera

Amaranthus spinosus



Andrographis paniculata

Allium cepa

Allium sativum

Azadirachta indica



Alstonia scholaris

Boerhaavia repens

Bombax ceiba

Centella asiatica



Calotropis procera



Carica papaya



Coriandrum sativum



Cassia fistula



Coccinia grandis



Clerodendrum viscosum



Cynodon dactylon



Datura metel



Eclipta alba



Euphorbia hirta



Ficus racemosa



Holorrhena antidysenterica



Ipomoea aquatica



Justicia adhatoda



Jatropha curcas



Kalanchoe pinnata



Lawsonia inermis



Mimosa pudica



Momordica charantia



Ocimum sanctum



Phyllanthus emblica



Psidium guajava



Rauwolfia serpentina



Ricinus communis



Syzygium cumini

Terminalia arjuna

Vitex negundo

Wedelia trilobata

Zingiber officinale

Table 1: Medicinal plants used by the local people of Bagha Upazila of Rajshahi district, Bangladesh

Sl. No.	Scientific name	Local name	Family name	Parts used	Ailments	Formulations
1	<i>Abroma augusta</i> L.f.	Ulotkombol	Sterculiaceae	Leaf, petiole	(a)Dysentery, (b)Skin disease	(a)Three spoonful of petiole decoction mixed with half spoon of pepper powder is administered once a daily for 2 days. (b) Leaf juice mixed with pinch of salt is applied on the affected areas till cure.
2	<i>Achyranthes aspera</i> L.	Apang	Amaranthaceae	Leaf	(a)Jaundice (b) Dysentery (c) Chicken pox	(a) Leaves of <i>Cajanus cajan</i> and <i>Lawsonia inermis</i> are crushed with roots of <i>Achyranthes aspera</i> to obtain juice, which is taken orally with molasses prepared from sugarcane juice once daily for consecutive days. (b) 15 leaves ground along with 12 seeds of <i>Piper nigrum</i> and a spoonful of honey. A spoonful of this paste administered with a glass of hot water every one hour for one day. (c) Leaf paste with resin of <i>Shorea robusta</i> and neem applied on the body for one week.
3	<i>Abrus precatorius</i> L.	Kuch	Fabaceae	Seed, root, leaf	(a)Dandruff, (b) Diarrhea, (c) Abortion, (d)Cough, (e) Dysentery	(a) Seed paste is applied on the head. (b) Five gram of root powder mixed with a cup of water is administered twice a daily for 5 days. (c) 2 or 3 seeds paste mixed in a glass of water and given once a day before breakfast for 3 days. (d) A spoonful of leaf juice administered daily twice for 3 days. (e) A spoonful of root paste with half spoon of honey administered twice a day for 2 days.
4	<i>Acacia catechu</i> (L.f.) Willd.	Khoer	Mimosaceae	Stem bark, Leaf	(a)Wounds, (b) Mouth ulcers, (c) Diabetes	(a) Stem bark paste is applied on the affected areas. (b) Stem bark decoction is gargled once a daily for 3 days. (c) Three spoons of leaf paste mixed with Khoer paste is taken orally once a daily till cure.
5	<i>Acalypha indica</i> L.	Muktajhuri	Euphorbiaceae	Leaf	(a)Scorpion sting, (b) Jaundice (c) Skin disease	(a) Leaf paste applied on the affected areas and 20 gm of this paste also administered orally. (b) 2 spoonful of leaf juice mixed with a pinch of salt is administered twice a day for 6 days. (c) Leaf paste mixed with turmeric powder is applied on the affected areas.
6	<i>Aegle marmelos</i> (L.) Corr.	Bel	Rutaceae	Fruit, leaf, stem	(a)Cholera, (b) Diabetes, (c) Indigestion, (d) Leucorrhea, (e) Constipation	(a) Stem bark grinds with <i>Piper nigrum</i> and filter of the extract. 2 spoonful of the extract given thrice a day for three days. (b) About 10 ml of leaf juice given with 5 <i>Piper nigrum</i> seeds twice a day for two months. (c) 5 gm fruit pulp administered orally after meal. (d) Leaf paste taken orally for one week. (e) Juice made from ripe fruits is used as constipation.
7	<i>Aloe vera</i> (L.) Burm. f.	Ghritakumari	Aloeaceae	Leaf	(a)Blood pressure, (b)Dandruff (c) Piles	(a) Leaf pulp mixed with lemon juice and sugar is administered in one spoonful once a day till cure. (b) Leaf pulp is applied on the scalp. (c) Leaf pulp is mixed with crystal sugar is taken once a day till cure.
8	<i>Amaranthus spinosus</i> L.	Katanotey	Amaranthaceae	Root, fruit	(a)Headache, (b) Pimples	(a) Root juice is orally taken once daily in the morning on an empty stomach for 7 days. (b) Dried

9	<i>Andrographis paniculata</i> (Brum f.) Wall ex Nees	Kalomegh	Acanthaceae	Stem, root, leaf	(a)Asthma, (b) Malaria	fruit ash mixed with water and applied on the pimples twice a day for 3 days. (a) Stem mixed with <i>Justicia adhatoda</i> leaves ground and the infusion given orally till cure. (b) Three spoonful of root and leaf extracts given twice a day for 5 days.
10	<i>Allium cepa</i> L.	Piaj	Liliaceae	Bulb	(a)Cough, (b) Snake bite	(a)Warm blub juice along with <i>Brassica napus</i> oil is taken massage the whole body to cure cough. (b) Macerated bulb juice is applied on the affected area for snake bite.
11	<i>Allium sativum</i> L.	Roshun	Liliaceae	Bulb, Leaf	(a)Blood pressure, (b) Cough, (c) Leprosy	(a) Garlic is taken with hot rice to treat high blood pressure. (b) Slightly warm juice of leaves is used in cough. (c) Paste prepared from bulb is applied to the affected areas to treat leprosy.
12	<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae	Leaf, seed, stem bark	(a)Chicken pox, (b) Eczema, (c) Jaundice, (d) Dandruff	(a) Leaf paste mixed with turmeric and applied on the affected areas daily twice till cure. (b) Seeds mixed with a pinch of turmeric and coconut oil applied on the affected areas daily twice for 3 days. (c) A spoonful of roasted stem bark paste mixed with a spoonful of sugar is administered daily twice for 5 days. (d) Leaf paste applied on the scalp externally daily once for one hour before head bath for 3 days.
13	<i>Alstonia scholaris</i> (L.) R.Br.	Chatim	Apocynaceae	Bark, stem	(a)Vomiting, (b) Toothache	(a) Two spoonfuls of juice obtained from crushed bark are taken orally in the morning for 3 days. (b) Stem bark decoction is gargled once a day till cure.
14	<i>Boerhaavia repens</i> L.	Punarnava	Nyctaginaceae	Whole plant, leaf	(a)Skin disease, (b) Stomach pain	(a)Whole plant roasted, powered and mixed with coconut oil is applied on the affected areas until cure. (b) 10 gm of leaf paste is taken twice a day for 3 days.
15	<i>Bombax ceiba</i> L.	Shimul	Bombacaceae	Stem bark, gum, root	(a)Burning sensation, (b)Dysentery, (c) Sexual weakness	(a) Stem bark paste is applied on the affected areas. A gum paste is used for burning sensation of body. (b) Half spoon of gum missed with half spoon of butter is administered twice a day for 3 days. (c) Juice made from young roots are used as sexual weakness is administered 1 tea cup one a day for 30 days.
16	<i>Centella asiatica</i> (L.) Urban	Thankuni	Apiaceae	Root, leaf, whole plant	(a)Spermatorrhoea, (b) Skin disease, (c) Toothache	(a) Root of the plant is taken orally with leaves of Piper betle thrice daily, once in the morning before meal, and in the afternoon and night after meals. (b) Leaf decoction is administered externally on affected areas twice a day till cure. (c) Whole plant decoction is gargled once a day till cure.
17	<i>Calotropis procera</i> (L.) R. Br.	Akando	Asclepiadaceae	Leaf, flower	(a)Body pain, (b) Asthma	(a) Leaves are warmed over a fire and applied topically to painful area twice daily for 3 consecutive days. (b) 2 spoonful of flower paste mixed in a glass of water administered daily twice for 10 days.
18	<i>Carica papaya</i> L.	Pepe	Caricaceae	Fruit	(a)Constipation and stomachic	(a) Fruits pulp is used for stomachic and constipation.
19	<i>Coriandrum sativum</i> L.	Dhoney	Apiaceae	Seed,	(a)Asthma, (b) Indigestion	(a) 3 spoonful of seed juice mixed with one spoonful of long pepper powder is administered twice a day till cure. (b) 3 spoonful of seed paste mixed with half spoon of dried ginger powder is taken orally once a day for 3 days.
20	<i>Cassia fistula</i> L.	Badarlathi	Caesalpinaceae	Leaf, flower	(a)Jaundice, (b) Scabies	(a) Tender leaf ground with tamarind is taken with rice once a day till cure. (b) Flower paste applied on the affected areas till cure.
21	<i>Coccinia grandis</i> (L.) Voigt.	Telakucha	Cucurbitaceae	Leaf	(a)Diabetes, (b) Burning sensation	(a) Leaf juice is taken orally daily on an empty stomach. (b) Leaf juice is taken orally (1 glass) on an empty stomach for 3 days.
22	<i>Clerodendrum viscosum</i> Vent.	Bhat	Verbenaceae	Leaf, whole plant	(a)Hair disease, (b) Body pain	(a) Leaf paste is applied to scalp and kept for 2-3 hours twice per week. (b) Whole plant decoction is taken in 20 ml dose twice a day for 3 days. Decoction warmed and applied all over the body.
23	<i>Cynodon dactylon</i> (L.) Pers.	Durbaghas	Poaceae	Whole plant	(a)Stop bleeding and wound, (b) Dandruff, (c)	(a) Paste made form whole plant is used as stop bleeding and wound. Whole plant is crushed to obtain juice, which is then strained and taken orally thrice

					Fever	daily after meals. (b) Whole plant juice is applied to the scalp once a day till cure. (c) Whole plant decoction is taken in doses of 30 ml daily twice for 3 days.
24	<i>Datura metel</i> L.	Dhutura	Solanaceae	Leaf, root	(a)Boils, (b) Cough, (c) Dog bite	(a) Leaf paste mixed with castor oil is applied on the affected areas once a day till cure. (b) Decoction is prepared from leaves along with the whole plant of <i>Solanum surrattense</i> . Two spoonful of decoction is administered twice a day for 3 days. (c) Roots along with those of <i>Boerhaavia repens</i> taken in equal quantities are made into paste and administered with a cup of water once a day for 7 days.
25	<i>Eclipta alba</i> (L.) Hassk.	Kalokeshi	Asteraceae	Stem, whole plant	(a)Skin infection, (b) Scorpion sting, (c) Hair fall	(a) Paste of stem is topically applied twice daily. (b) Leaf paste is applied on the affected areas. (c) Paste made from whole plant is applied on the hair once a day for 30 days.
26	<i>Euphorbia hirta</i> L.	Dudhiya	Euphorbiaceae	Whole plant, latex	(a)Asthma, (b) Fever, (c) Eye infection	(a) Three gram of paste of whole plant mixed with leaves of <i>Calotropis procera</i> and <i>Piper betle</i> is taken orally once a day till cure. (b) Whole plant decoction mixed with pepper powder is administered twice a day till cure. (c) Two drops of latex is applied in the eyes once a day for 3 days.
27	<i>Ficus racemosa</i> L.	Jogdumur	Moraceae	Fruit, root, latex	(a)Diabetes, (b) Colic in children, (c) Toothache, (d) Easy delivery	(a) Curry made from young fruits is applied once a day for 30 days. (b) Latex is applied on the forehead and navel till cure. (c) Stem bark juice is applied to the affected teeth. (d) Two spoonful of root decoction is administered at the time of labour pains.
28	<i>Holorrhena antidysenterica</i> (G. Don.) Wall ex A.DC.	Kurchi	Apocynaceae	Stem bark, seed	(a)Diarrhea, (b) Leprosy, (c) Skin disease	(a) Stem bark decoction in two spoonfuls is administered twice a day for 7 days. (b) Seed paste is applied on the affected areas. (c) Stem bark is applied on the affected parts twice a day till cure.
29	<i>Ipomoea aquatica</i> Forssk	Kolmishak	Convolvulaceae	Leaf	(a)Jaundice and biliousness	(a)Dried leaves powder mixed with water is used in jaundice and biliousness.
30	<i>Justicia adhatoda</i> L.	Basak	Acanthaceae	Leaf, root	(a)Cold and cough, (b) Asthma	(a) 2 spoonfuls of leaf juice is taken orally in the morning and night for 7 consecutive days. (b) Leaf is ground along with the root paste of <i>Solanum surrattense</i> and black pepper in equal quantities and administered in 10 gm twice a day for 15-30 days.
31	<i>Jatropha curcas</i> L.	Jamalgota	Euphorbiaceae	Stem	(a)Toothache	(a) Brush the teeth with tender branches once a day till cure.
32	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Patharkuchi	Crassulaceae	Leaf	(a)Stomachic	(a) Crushed leaves mixed salt used for stomachic.
33	<i>Lawsonia inermis</i> L.	Mehedi	Lythraceae	Leaf	(a)Hair loss and skin disease, (b) Jaundice	(a) Paste of leaf is topically applied to scalp and other areas of skin one day per week. (b) Leaf paste mixed with curd in 1:3 proportions in doses of 3 spoonfuls twice a day for 7 days.
34	<i>Mimosa pudica</i> L.	Lajjaboti	Fabaceae	Leaf	(a)Gonorrhoea, (b) Jaundice, (c) Fever	(a) One tea spoonful of leaf juice is taken orally twice daily in the morning and night after meal for 3 days. (b) Tender leaves crushed along with those of <i>Achyranthes aspera</i> , <i>Zizyphus mauritiana</i> and <i>Gmelina arborea</i> and the paste along with cow milk given orally in the doses of 3 spoonfuls twice a day for 5 days. (c) 5 ml of leaf extract administered twice a day for 7 days.
35	<i>Momordica charantia</i> L.	Korola	Cucurbitaceae	Fruit, leaf, root	(a)Diabetes, (b) Jaundice, (c) Peptic ulcers	(a) 5 ml of fruit extract administered twice a day for 30 days. (b) The leaf paste along with that of <i>Azadirachta indica</i> made into pills, 2 pills administered twice a day for 3 days. (c) 2 spoonful of root decoction administered daily once till cure.
36	<i>Ocimum sanctum</i> L.	Tulsi	Lamiaceae	Leaf	(a)Mucus and Rheumatic pain, (b) Cold, (c) Fever	(a) Leaf juice is orally taken twice daily after meals in the morning and night. (b) Leaves are ground with dried ginger and black pepper in equal quantities and made into decoction and administered in 30 ml dose once a day for 3 days. (c) 10 ml of leaf juice mixed with half spoon of pepper powder is applied twice a

37	<i>Phyllanthus emblica</i> L.	Amloki	Euphorbiaceae	Bark, leaf, fruit	(a)Paralysis, (b) Skin disease, (c) Scurvy	day for 5 days. (a) Paste of bark is topically applied twice daily in the morning and night. (b) Leaves ground with <i>Cucurma longa</i> and the paste applied over the skin. (c) One green fruit administered twice a daily for about 2-3 months.
38	<i>Psidium guajava</i> L.	Piyara	Myrtaceae	Leaf, root	(a)Toothache, (b) Dysentery and diarrhea	(a) A young leaf is used daily for mouth-wash till cure. (b) Root paste mixed with water is used to treat dysentery and diarrhea.
39	<i>Rauwolfia serpentina</i> (L.) Benth ex Kurz	Saragandha	Apocynaceae	Stem bark, root	(a)Blood pressure, (b) Skin diseases, (c)Snake bite	(a) Stem bark decoction is taken orally in doses of 30 ml once a day till cure. (b) Root paste is applied on the affected areas till the disease is cured. (c) Fine root paste is administered in half spoonful dose only once soon after bite.
40	<i>Ricinus communis</i> L.	Rendi	Euphorbiaceae	Root, Seed, leaf	(a)Rheumatic pain, (b) Boils, (c)Burning sensation, (d) Piles	(a) Root juice is taken orally with molasses prepared from sugarcane juice. (b) Leaves are pasted on the affected areas till cure. (c) Seed paste mixed with cow milk is applied on the affected areas till cure. (d) Seed oil mixed with 2 spoons of seed powders of <i>Terminalia chebula</i> , <i>T. bellerica</i> and <i>Phyllanthus emblica</i> is administered once a day till cure.
41	<i>Syzygium cumini</i> (L.) Skeel.	Kaloram	Myrtaceae	Seed, stem bark, leaf	(a)Diabetes, (b) Cough, (c) Dysentery	(a) Dried seeds ground to powder. This powder mixed with hot water and taken in doses of 2 spoonful twice a day for 30 days. (b) 5 ml of stem bark extract administered orally twice a day for 3 days. (c) 3 ml of leaf juice administered orally twice a day for 2 days.
42	<i>Terminalia arjuna</i> (DC.) Weight & Arn	Arjun	Combretaceae	Bark, stem bark, leaf	(a)Anemia, (b) Heart disease, (c) Skin disease	(a) Bark is boiled in water along with cow milk. This decoction is taken orally once daily on an empty stomach for 15 consecutive days. (b) Stem bark decoction is administered in doses of two spoonfuls early in the morning and night before meals till cure. (c) Leaf juice is applied on the affected areas until cure the disease.
43	<i>Vitex negundo</i> L.	Nishinda	Lamiaceae	Leaf	(a)Rheumatic pain, (b) Skin disease	(a) Leaf juice is mixed with mustard oil and topically applied to affected areas for 5 consecutive days at night. (b) Boiled extract is applied on the affected areas.
44	<i>Wedelia sinensis</i> (Osbeck.) Merr.	Mohavringoraj	Asteraceae	Leaf	(a)Edema	(a) Juice obtained from leaves along with cow milk is used in edema.
45	<i>Zingiber officinale</i> Roscoe	Ada	Zingiberaceae	Rhizome	(a)Headache, (b) Cough	(a) Rhizome juice with leaf juice of <i>Thea chinensis</i> , this juice taken orally 2 spoonfuls twice 1 day. (b) One spoonful of the rhizome juice mixed with an equal quantity of cow butter, warmed and massaged on the chest and throat for 4 days before bed time.

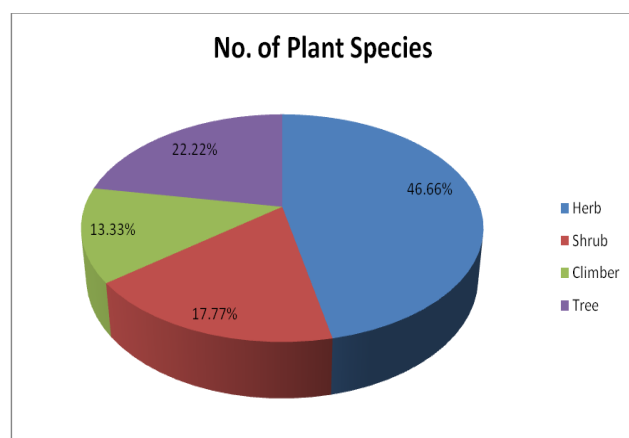


Figure-1: Habit of the recorded plant species in the study area

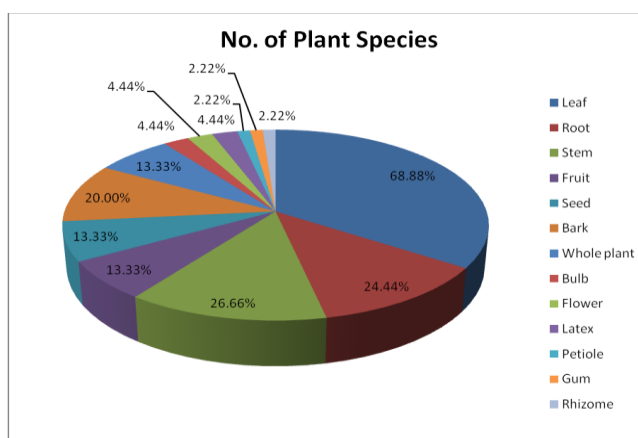


Figure-2: Plant parts used in different diseases

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