

TAXONOMIC ENUMERATION OF ANGIOSPERM FLORA OF SREENAGAR UPAZILA, MUNSHIGANG, DHAKA, BANGLADESH

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Abstract

The present article focuses the status of angiosperm flora of Sreenagar *upazila* under Munshiganj district. The study was done from July 2015 to June 2016. A total of 219 plant species of angiosperms was identified belonging to 165 genera and 70 families. Among them 38 species were monocotyledons and 181 plant species were dicotyledons. Herbs were the largest life forms among the angiosperms and contained about 58% of total plant species occurring in this area. Trees and shrubs occupied 23% and 12% respectively. Climbers were 6% but epiphytes (1%) were very negligible in number in the study area. About 51 medicinal plants were recorded from this study. The following species viz. *Lasia spinosa*, *Calamus tenuis*, *Tinospora crispa*, *Passiflora foetida* and *Calotropis procera* were recorded only once and hence considered as rare species in Sreenagar *upazila*. An invasive poisonous plant *Parthenium hysterophorus* was also found in Sreenagar.

Key words: Diversity, Angiosperm flora, Sreenagar, Munshiganj district

Introduction

Sreenagar is an *upazila* under Munshiganj district situated on the bank of 'Padma' river. It is a part of Dhaka division, located in between 23°27' and 23°38' north latitudes and in between 90°10' and 90°22' east longitudes. The total area is 202, 98 square kilometer and bounded by Serajdikhan and Nawabganj *upazilas* on the north, Lohajong and Shibchar *upazilas* on the south, Serajdikhan and Nawabganj and Dohar *upazilas* on the west. It consists of 14 union parishads, 102 mouzas and 148 villages. The temperature of this area fluctuates between 13.7 °C and 37.7 °C throughout the year. Monthly average relative humidity varies from 54 to 82% throughout the year. The highest precipitation was found in July. Sreenagar *upazila* presents diverse types of habitats, e.g. char lands, riparian, homestead, roadside, wetland (Sarker 2012).

Angiosperm flora of Sreenagar *upazila* has great economic and cultural importance especially in providing food, medicine, fuel and shelter for the local people. It also plays a key role in maintaining the environmental balance and ecosystem stability of the area. Plants of this area have been facing many threats. These are habitat loss and fragmentation, introduction of exotic species, loss of pollinators, over exploitation, pollution and developmental work for (e.g. Padma bridge construction). A good number

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of floristic studies on the angiosperm flora of different areas of Bangladesh had already been published. (Khan *et al.* 1994, Rahman and Hassan 1995, Uddin *et al.* 1998, Khan and Huq 2001, Uddin *et al.* 2011, Uddin and Hassan *et al.* 2004, 2010; Uddin *et al.* 2013 and Rahman *et al.* 2013). But there was no study on the angiosperm flora of Sreenagar *Upazila*. Thus this study was conducted to know the present status of angiosperm flora of Sreenagar *Upazila* and to find out the threats and stress for the plant community of this area.

Materials and Methods

Plant samples were collected from the study area in different seasons during July 2015 to June 2016 through six repeated field trips. The area was divided into 14 spots (Sreenagar *upazila*, Atpara, Tantar, Kukutia, Sholaghar, Rarikhal, Hasara, Kolapara, Shamsiddhi, Bhagyakul, Bhagra, Birtarafor, Baraikhali, Patabhog) for collecting plant samples. The survey covered all habitats and ecosystems of the study site including homestead, road sides, char lands, aquatic bodies and cultivated lands. Voucher specimens processed using standard herbarium techniques (Hyland 1972). The specimens were identified consulting different Floras viz., Hooker 1872-1897, Prain 1903, Uddin and Hassan 2004, Siddiqui *et al.* (2007c) and Ahmed *et al.* (2008a, 2008b, 2009b, 2009c, 2009d, 2009e). Specimens available at Dhaka University Salar Khan Herbarium (DUSH) were consulted in identifying the collected plant specimens. The updated nomenclature of the species followed Siddiqui *et al.* (2007c) and Ahmed *et al.* (2008a, 2008b, 2009b, 2009c, 2009d, and 2009e). Voucher specimens are deposited at DUSH. The species representation in the families varied from 1 to 16. In both monocot and dicot angiosperms, Poaceae is the largest family represented by 16 species and Asteraceae and Moraceae is the second largest family represented by 11 species Fig.1 showing the top dominated families. Poaceae, Asteraceae were also reported to be the largest family in a previous study from Bangladesh (Uddin and abiabdullah 2016 and Rahman *et al.* 2013).



Fig. 1. Map of Sreenagar *Upazila*.

Results and Discussion

A total of 219 angiosperm species was identified under 165 genera and 70 families. Among them Magnoliopsida (dicotyledons) is represented by 181 Species belonging to 129 genera and 58 families, whereas Liliopsida (monocotyledons) by 38 species under 36 genera and 12 families only. For each species local name, scientific name, family, habit and habitat are presented in Table 1. Among the species, 126 are represented by herbs, 26 by shrubs, 54 by trees and 12 by climbers and epiphyte (Fig. 3). Poaceae having 16 species is the largest family in monocotyledon whereas Asteraceae and Moraceae both having 11 species in each family in dicotyledon. Local people use different plants for medicinal purposes. 51 medicinal plants were found from this study. It is about 23% of the total flora. Roadside vegetation occupied the highest number of identified plant species and was 36% of total species.

Table1. Plant diversity of Sreenagar upazila.

Scientific Name	Local Name	Family Name	Habit	Habitat	Coll. No.
<i>Abelmoschus esculentus</i> (L.) Moench	Dherosh	Malvaceae	H	Cultivated	120
<i>Acacia auriculiformis</i> A. Cunn. ex Benth. & Hook.	Akashmoni	Mimosaceae	T	Road side	52
<i>Acacia nilotica</i> L.	Babla	Fabaceae	T	Road side	62
<i>Acalypha indica</i> L.	Muktajhuri	Euphorbiaceae	S	Road side	268
<i>Achyranthes aspera</i> L.	Bilaiachra	Amaranthaceae	H	Road side	22
<i>Adenosma indianum</i> (Lour.) Merr.	Barakesuti	Scrophulariaceae	H	Char	76
<i>Adenostemma lavenia</i> (L.) O. Kuntze	Borokesuti	Asteraceae	H	Road side	176
<i>Aegle marmelos</i> (L.) Corr.	Bel	Rutaceae	T	Homestead	222
<i>Ageratum conyzoides</i> L.	Fulkuri	Asteraceae	H	Road side	7
<i>Albizia lebeck</i> (L.) Benth.	Siris	Fabaceae	S	Road side	20
<i>Allium cepa</i> L.	Piaj	Amaryllidaceae	H	Cultivated	39
<i>Allium sativum</i> L.	Rosun	Amaryllidaceae	H	Cultivated	26
<i>Alocasia cucullata</i> (Lour.) G. Don	Bishkachu	Araceae	H	Homestead	174
<i>Aloe vera</i> (L.) Brum. f.	Gritokumari	Aloeaceae	H	Homestead	40
<i>Alstonia scholaris</i> (L.) R. Br.	Chatim	Apocynaceae	T	Road side	180
<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Helencha	Amaranthaceae	H	Riparian	168
<i>Alternanthera sessilis</i> (L.) R. Br. ex. Roem. & Schult.	Sachi shak	Amaranthaceae	H	Char	1
<i>Amaranthus blitum</i> L.		Amaranthaceae	H	Cultivated	233
<i>Amaranthus spinosus</i> L.	Kanta nutia	Amaranthaceae	S	Cultivated	30
<i>Amaranthus tricolor</i> L.	Lal shak	Amaranthaceae	H	Cultivated	240
<i>Amaranthus viridis</i> L.	Note shak	Amaranthaceae	T	Cultivated	46
<i>Annona reticulata</i> L.	Ataphal	Annonaceae	T	Homestead	83
<i>Annona squamosa</i> L.	Sharifa	Annonaceae	T	Homestead	279
<i>Areca catechu</i> L.	Supari	Arecaceae	T	Homestead	152
<i>Artocarpus heterophyllus</i> Lamk.	Kathal	Moraceae	T	Homestead	192
<i>Artocarpus lakucha</i> Buch.-Ham.	Dewa	Moraceae	T	Homestead	163
<i>Averrhoa carambola</i> L.	Kamranga	Oxalidaceae	H	Homestead	215
<i>Azadirachta indica</i> A. Juss.	Nim	Meliaceae	T	Homestead	64

Contd.

Scientific Name	Local Name	Family Name	Habit	Habitat	Coll. No.
<i>Barringtonia acutangula</i> (L.) Gaertn.	Hijol	Lecythidaceae	H	Riparian	290
<i>Basella alba</i> L.	Puishak	Basellaceae	H	Homestead	213
<i>Bauhinia variegata</i> L.	Lal kanchon	Caesalpiniaceae	T	Homestead	242
<i>Blumea lacera</i> (Burm. f.) DC.	Shialmdra	Asteraceae	H	Road side	266
<i>Boehmeria nivea</i> (L.)Gaudich.	-	Utricaceae	H	Road side	87
<i>Bombax ceiba</i> L.	Shimul	Bombacaceae	H	Road side	49
<i>Borassus flabellifer</i> L.	Tal	Arecaceae	T	Road side	50
<i>Bougainvillea glabra</i> Choisy.	Baganbilas	Nyctaginaceae	H	Homestead	288
<i>Cajanus cajan</i> (L.) Millsp.	Arhor dal	Fabaceae	T	Road side	194
<i>Calamus tenuis</i> Roxb.	Bet	Arecaceae	T	Riparian	73
<i>Calotropis gigantea</i> (L.) R. Br.	Akondo	Asclepiadaceae	S	Road side	200
<i>Capsicum frutescens</i> L.	Morich	Solanaceae	H	Cultivated	185
<i>Cardiospermum helicacabum</i> L.	Vat	Sapindaceae	H	Road side	61
<i>Carica papaya</i> L.	Pepe	Caricaceae	T	Homestead	220
<i>Carissa carandas</i> L.	Koromcha	Apocynaceae	T	Homestead	283
<i>Caryota urens</i> L.	Fish tail palm	Arecaceae	H	Road side	287
<i>Cassia javanica</i> L.	Java sonalu	Caesalpiniaceae	T	Road side	179
<i>Cassia nodosa</i> Buch.-Ham. ex Roxb.	Bansonalu	Caesalpiniaceae	H	Road side	60
<i>Casuarina equisetifolia</i> Forst.	Jhaw	Casuarinaceae	H	Char	286
<i>Catharanthus roseus</i> (L.) G. Don	Noyon tara	Apocynaceae	H	Homestead	70
<i>Cayratia trifolia</i> (L.) Domin.	Gowalialata	Vitaceae	C	Road side	265
<i>Celosia argentea</i> L.	Morog ful	Amaranthaceae	H	Homestead	71
<i>Centella asiatica</i> (L.) Urban.	Thankune	Apiaceae	H	Homestead	165
<i>Cestrum nocturnum</i> L.	Hasna hena	Solanaceae	S	Homestead	246
<i>Chamaecrista mimosoides</i> (L.) Greene.	-	Caesalpiniaceae	H		21
<i>Chenopodium album</i> L.	Bothua shak	Chenopodiaceae	T	Char	295
<i>Chloris gayana</i> Kunth.	-	Poaceae	C		10
<i>Chromolaena odorata</i> (L.) King & Robinson.	Assamlata	Asteraceae	H	Road side	19
<i>Chylocalyx perfoliatus</i> (L.) Hassk.ex Miq.	Kantatok pata	Polygonaceae	H	Char	53
<i>Citrus limon</i> (L.) Burm.	Lebu	Rutaceae	S	Homestead	45
<i>Citrus maxima</i> (Burm.) Merr.	Batabi lebu,Jambura	Rutaceae	S	Homestead	150
<i>Cleome gynandra</i> L.	Hurhuria	Capparaceae	H	Road side	136
<i>Cleome rutidosperma</i> DC.	-	Capparaceae	T	Riparian	32
<i>Coccinia grandis</i> (L.) Voigt.	Telakucha	Cucurbitaceae	C	Road side	43
<i>Cocos nucifera</i> L.	Narikel	Arecaceae	T	Homestead	88
<i>Codiaeum variegatum</i> (L.) A. Juss.	-	Euphorbiaceae	H	Homestead	172
<i>Coix lacryma-jobi</i> L.	Kunch,Tasbi	Poaceae	H	Rice field	128
<i>Commelina benghalensis</i> L.	Kanailota	Commelinaceae	H	Road side	82
<i>Conyza aegyptiaca</i> (L.) W. Ait	-	Asteraceae	H	Road side	11
<i>Corchorus capsularis</i>	Deshi pat	Tiliaceae	H	Cultivated	97
<i>Crateva magna</i> (Lour.) DC.	Bannya,barun	Capparaceae	T	Riparian	297

Contd.

Scientific Name	Local Name	Family Name	Habit	Habitat	Coll. No.
<i>Croton bonplandianus</i> Baill.	Bondhone	Euphorbiaceae	H	Road side	8
<i>Cucumis sativus</i> L.	Shasa, Khira	Cucurbitaceae	C	Cultivated	126
<i>Cucurbita maxima</i> Duch. ex Lamk.	Mistialu	Cucurbitaceae	C	Cultivated	65
<i>Cucurbita moschata</i> Duch. Ex Poir.	Safra kumra	Cucurbitaceae	H	Cultivated	143
<i>Cuscuta reflexa</i> Roxb.	Swarnalata	Cuscutaceae	Epiphyte	Epiphyte, Roadside	284
<i>Cyclea barbata</i> Miers.	Patalpur	Menispermaceae	H	Road side	5
<i>Cynodon dactylon</i> L.	Durba	Poaceae	H	open field	79
<i>Cyperus iria</i> L.	-	Cyperaceae	H	Cultivated land	167
<i>Cyperus rotundus</i>	Mutha gash	Cyperaceae	H	Cultivated land	13
<i>Dactyloctenium aegyptium</i> (L.) P. Beauv.	Makra	Poaceae	H	Road side	80
<i>Dalbergia sisso</i> Roxb.	Shisu	Fabaceae	S	Road side	48
<i>Datura metel</i> L.	Dhuttra	Solanaceae	H	Road side	267
<i>Dendrocalamus strictus</i> Roxb. Nees.	Karail	Poaceae	H	Rice field	89
<i>Digitaria bicornis</i> (Lamk.) Roem. & Schult. ex Loud.	-	Poaceae	H	Road side	14
<i>Digitaria stricta</i> Roth ex Roem. & Schult.	Ghash	Poaceae	H	Road side	18
<i>Digitaria ternata</i> (A. Rich.) Stapf ex Dyer.	Ghash	Poaceae	H	Road side	91
<i>Dillenia indica</i> L.	Chalta	Dilleniaceae	T	Homestead	93
<i>Dioscorea alata</i> L.	Chupri alu	Dioscoriaceae	T	Homestead	92
<i>Diospyros discolor</i> Willd. nom illeg. Verheij & Coronel.	Bilatigab	Ebenaceae	T	Homestead	119
<i>Diospyros malabarica</i> (Desr.) Kostel.	-	Ebenaceae	T	Homestead	42
<i>Duranta repens</i> L.	Duranta	Verbenaceae	H	Homestead	271
<i>Echinochloa colonum</i> (L.) Link.	Buno Dhan	Poaceae	H	Road side	158
<i>Eichhornia crassipes</i> (Mart.) Solms.	Kochuripana	Pontederiaceae	H	Aquatic	161
<i>Elaeocarpus tectorius</i> (Lour.) Poir.	Jolpai	Elaeocarpaceae	H	Homestead	182
<i>Eucalyptus camaldulensis</i> Dehnhardt.	Eucalyptus	Myrtaceae	T	Road side	107
<i>Euphorbia hirta</i> L.	Dudhia	Euphorbiaceae	H	Road side	37
<i>Euphorbia thymifolia</i> L.	Dudhiya	Euphorbiaceae	H	Road side	260
<i>Ficus benghalensis</i> L.	Bot	Moraceae	T	Road side	124
<i>Ficus heterophylla</i>	Bot	Moraceae	T	Road side	162
<i>Ficus hispida</i> L. f.	Kak dumur	Moraceae	T	Road side	177
<i>Ficus racemosa</i> L.	Dumur	Moraceae	T	Road side	35
<i>Ficus religiosa</i> L.	Ashok	Moraceae	T	Road side	101
<i>Ficus rumphii</i> Blume.	Gaiaswathwa	Moraceae	T	Road side	59
<i>Fioria vitifolia</i> (L.) Mattei.	-	Malvaceae	H	Road side	110
<i>Glinus oppositifolius</i> (L.) A. DC.	Gimashak	Molluginaceae	H	Char	296
<i>Glycosmis pentaphylla</i> (Retz.) A. DC.	Matkila, Datmajoni	Rutaceae	S	Road side	131
<i>Heliotropium indicum</i> L.	Hatishur	Boraginaceae	H	Cultivated	78
<i>Hibiscus fragrans</i> Roxb.	Joba	Malvaceae	S	Homestead	99
<i>Hibiscus rosa-sinensis</i> L.	Joba	Malvaceae	S	Homestead	285
<i>Hibiscus schizopetalus</i> (Mast.) Hook. f.	Jhumko Joba	Malvaceae	S	Homestead	291

Contd.

Scientific Name	Local Name	Family Name	Habit	Habitat	Coll. No.
<i>Hibiscus surattensis</i> L.	Joba	Malvaceae	S	Road side	210
<i>Hydrocotyle sibthorpioides</i> Lamk.	Unknown	Apiaceae	H	Aquatic	121
<i>Hygrophila schulli</i> (Buch.-Ham.) M. R. & S. N. Almeida.	Talmakhna	Acanthaceae	H	Aquatic	171
<i>Indigofera tinctoria</i> L.	Nil	Fabaceae	S	Cultivated	90
<i>Ipomea indica</i> (Burm.f.) Merr.	Kolmi	Convolvulaceae	H	Aquatic	135
<i>Ipomoea aquatica</i> Forssk.	Kolmi	Convolvulaceae	H	Aquatic	145
<i>Ipomoea batatas</i> (L.) Lamk.	Mistialu	Convolvulaceae	H	Cultivated	303
<i>Ipomoea fistulosa</i> Mart. ex Choisy.	-	Convolvulaceae	H	Aquatic	311
<i>Ixora coccinea</i> L.	Rongon	Rubiaceae	S	Homestead	300
<i>Justicia gendarussa</i> Burm. f.	Jogotmordon	Acanthaceae	H	Homestead	103
<i>Kyllinga brevifolia</i> Rottb.	-	Cyperaceae	T	Road side	146
<i>Lagenaria siceraria</i> (Molina) Standl.	Lau	Cucurbitaceae	C	Cultivated	209
<i>Lasia spinosa</i> (L.) Thw.	Kanta kachu	Araceae	H	Riparian	151
<i>Lawsonia inermis</i> L.	Mehedi	Lythraceae	S	Homestead	140
<i>Lepidagathis incurva</i> Buch-Ham. ex D. Don.	-	Acanthaceae	H	Homestead	142
<i>Leucas cephalotes</i> (Roth.) Spreng.	Bara halkus	Lamiaceae	H	Homestead	276
<i>Limonia acidissima</i> L.	Kotbel	Rutaceae	T	Homestead	123
<i>Lippia alba</i> (Mill.) Briton et Wilson.	Lippia	Verbenaceae	H	Char	211
<i>Litchi chinensis</i> Sonn.	Lichu	Sapindaceae	T	Homestead	138
<i>Ludwigia adscendens</i> (L.) Hara.	Mulsi	Onagraceae	h	Aquatic	72
<i>Ludwigia hyssopifolia</i> (G. Don) Exell.	-	Onagraceae	H	Aquatic	51
<i>Ludwigia perennis</i> L.	-	Onagraceae	H	Aquatic	313
<i>Malvaviscus arboreus</i> Cav.	Joba	Malvaceae	S	Homestead	195
<i>Mangifera indica</i> L.	Aam	Anacardiaceae	T	Homestead	187
<i>Melia azedarach</i> L.	Goranim	Meliaceae	T	Road side	69
<i>Melocanna baccifera</i> (Roxb.) Kurz.	Muli bash	Poaceae	H	Cultivated	147
<i>Mikania cordata</i> (Burm.f.) Robinson.	Asamlata, Tarulata	Asteraceae	C	Road side	148
<i>Mirabilis jalapa</i> L.	Shondha moni	Nyctaginaceae	S	Homestead	157
<i>Mollugo pentaphylla</i> L.	Khetpapra	Molluginaceae	H	Char	56
<i>Momordica charantia</i> L.	Uchchhe	Cucurbitaceae	C	homestead	235
<i>Monochoria hastata</i> (L.) Solms.	-	Pontederiaceae	H	Aquatic	17
<i>Moringa oliefera</i> Lamk.	Sajina	Moringaceae	T	Homestead	57
<i>Morus macroura</i> Miq.	Tute	Moraceae	T	Road side	183
<i>Murraya paniculata</i> (L.) Jack.	Kamini	Rutaceae	S	Homestead	141
<i>Musa paradisiaca</i> L.	Kola	Musaceae	H	Homestead	203
<i>Mussaenda erythrophylla</i> Schum. & Thonn.	Macchenda	Rubiaceae	S	Homestead	129
<i>Neolamarckia cadamba</i> (Roxb.) Bosser.	Kokom	Rubiaceae	T	Road side	125
<i>Nymphaea nouchali</i> Burm. f.	Nil shapla	Nymphaeaceae	H	Aquatic	149
<i>Nymphaea pubescens</i> Willd	Shapla	Nymphaeaceae	H	Aquatic	160
<i>Ocimum basilicum</i> L.	Babui tulsi	Lamiaceae	S	Homestead	38
<i>Ocimum gratissimum</i> L.	Pantulsi	Lamiaceae	T	Homestead	75
<i>Oryza sativa</i> L.	Dhan	Poaceae	H	cultivated	159
<i>Oxalis corniculata</i> L.	Amrul	Oxalidaceae	T	open field	241

Contd.

Scientific Name	Local Name	Family Name	Habit	Habitat	Coll. No.
<i>Oxalis corymbosa</i> DC.	-	Oxalidaceae	H	Char	47
<i>Panicum milliaceum</i> L.	Cheena chaul	Poaceae	H	Rice field	164
<i>Parthenium hysterophorus</i>	-	Asteraceae	H	Char	166
<i>Paspalum distichum</i> L.	-	Poaceae	H	Cultivated	170
<i>Passiflora foetida</i> L.	Passiflora	Passifloraceae	H	Road side	184
<i>Pedilanthus tithymaloides</i> Poit.	Rangchita	Euphorbiaceae	H	Homestead	199
<i>Peperomia pellucida</i> (L.) H. B. & K.	Luchipata	Piperaceae	H	Road side	95
<i>Persicaria glabra</i> (Willd.) Gomez de la Maza.	Lal kukri	Polygonaceae	H	Riparian	36
<i>Persicaria hydropiper</i> (L.) Spach.	Panimorich	Polygonaceae	H	Char	28
<i>Persicaria lanata</i> (Roxb.) Hassan.	Shet panimorich	Polygonaceae	H	Riparian	29
<i>Persicaria lapathifolia</i> (L.) S. F. Gray.	Panimorich	Polygonaceae	H	Aquatic	231
<i>Phoenix sylvestris</i> Roxb.	Khejur	Arecaceae	T	Road side	186
<i>Phyla nodiflora</i> (L.) Greene.	Bhuiokra	Verbenaceae	H	Road side	308
<i>Phyllanthus emblica</i> L.	Amloki	Phyllanthaceae	H	Cultivated	307
<i>Phyllanthus niruri</i> L.	Bhuiamla	Euphorbiaceae	S	Road side	81
<i>Phyllanthus reticulatus</i> Poir.	Chitki	Phyllanthaceae	T	open field	278
<i>Physalis angulata</i> L.	Fotka	Solanaceae	H	Road side	3
<i>Physalis minima</i> L.	Fotka	Solanaceae	H	Road side	41
<i>Piper sylvaticum</i> Roxb.	Pan	Piperaceae	H	Homestead	44
<i>Pistia stratiotes</i> L.	Topapana	Araceae	H	Aquatic	178
<i>Polyalthia longifolia</i> (Sonn.) Thw.	Debdaru	Annonaceae	T	Road side	86
<i>Porana paniculata</i> Roxb.	-	Convolvulaceae	H	Road side	312
<i>Portulaca grandiflora</i> Hook.	Time ful	Portulacaceae	H	Homestead	181
<i>Portulaca oleracea</i> L.	Nunta shak	Portulacaceae	H	Char	156
<i>Psidium guajava</i> L.	Peara	Myrtaceae	S	Homestead	139
<i>Punica granatum</i> L.	Dalim	Punicaceae	S	Homestead	239
<i>Raphanus sativus</i> L.	Mula	Brassicaceae	H	Homestead	202
<i>Ricinus communis</i> L.	Bherenda	Euphorbiaceae	T	Road side	24
<i>Ruellia tuberosa</i> L.	Chatpoty	Acanthaceae	H	Road side	94
<i>Saccharum officinarum</i> L.	Akh	Poaceae	H	Cultivated land	223
<i>Saccharum spontaneum</i> L.	Kash	Poaceae	H	Riparian	133
<i>Scoparia dulcis</i> L.	Bondhone	Scrophulariaceae	H	Road side	299
<i>Senna hirsuta</i> (L.) Irwin & Barneby.	-	Caesalpiniaceae	H	Road side	106
<i>Senna obtusifolia</i> (L.) Irwin & Barneby.	-	Caesalpiniaceae	H	Road side	304
<i>Senna occidentalis</i> Roxb.	Bora chalkesunda	Caesalpiniaceae	H	Road side	113
<i>Senna tora</i> (L.) Roxb.	Kalkasam	Caesalpiniaceae	T	Homestead	98
<i>Sesamum indicum</i> L.	Til	Pedaliaceae	C	Cultivated land	257
<i>Sesbania bispinosa</i>	Dhaincha	Fabaceae	H	Cultivated land	169
<i>Setaria barbata</i> (Lamk.) Kunth.	-	Poaceae	H	Cultivated	9
<i>Sida acuta</i> Burm.	Kureta	Malvaceae	H	Road side	2
<i>Solanum americanum</i> Mill.	Titbegun	Solanaceae	H	Road side	293
<i>Solanum melongena</i> L.	Begun	Solanaceae	H	Cultivated	188

Contd.

Scientific Name	Local Name	Family Name	Habit	Habitat	Coll. No.
<i>Solanum nigrum</i> L.	Titbegun	Solanaceae	H	Road side	114
<i>Solanum tuberosum</i>	Alu	Solanaceae	H	Cultivated	189
<i>Spilanthes calva</i> DC.	Surja kannya	Asteraceae	H	Char	6
<i>Streblus asper</i> Lour.	Sheora	Moraceae	T	Road side	175
<i>Swietenia mahagoni</i> Jacq.	Mehogoni	Meliaceae	T	Homestead	153
<i>Synedrella nodiflora</i> (L.) Gaertn.	-	Asteraceae	H	open field	34
<i>Syzygium cumini</i> (L.) Skeels	Jam	Myrtaceae	T	Homestead	55
<i>Syzygium samarangense</i>	Jamrul	Myrtaceae	T	Homestead	207
<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schult.	Togor	Apocynaceae	S	Homestead	298
<i>Tagetes erecta</i> L.	Gadha	Asteraceae	H	homestead	193
<i>Tamarindus indica</i> L.	Tentul	Caesalpiniaceae	H	Road side	132
<i>Tectona grandis</i> L. f.	Segun	Dipterocarpaceae	T	Homestead	54
<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun	Combretaceae	H	Road side	250
<i>Thevetia peruviana</i> (Pers.) K. Schum.	Halde karabi	Apocynaceae	S	Homestead	281
<i>Tinospora crispa</i> (L.) Hook. f. & Thoms.	Gulantha	Menispermaceae	C	Homestead	196
<i>Trema orientalis</i> (L.) Blume.	-	Cannabaceae	H	Road side	204
<i>Triticum aestivum</i> L.	Gom	Poaceae	H	Cultivated	197
<i>Typhonium trilobatum</i> (L.) Schott.	Ghet kachu	Araceae	H	Homestead	208
<i>Urena lobata</i> L.	Ban okra	Malvaceae	H	Road side	4
<i>Vigna adenantha</i> (Meyer) Marechal et al.	Bonborboti	Fabaceae	C	Cultivated	155
<i>Vigna unguiculata</i> (L.) Walp.	Borboti	Fabaceae	H	Road side	191
<i>Wedelia trilobata</i> (L.) A. S. Hitchc.	-	Asteraceae	H	Road side	31
<i>Xanthium indicum</i> Koen ex Roxb.	Gagra	Asteraceae	C	Road side	27
<i>Zea mays</i> L.	Vutta	Poaceae	H	cultivated	198
<i>Ziziphus oenoplia</i> (L.) Mill.	Boroi	Rhamnaceae	T	Homestead	104

(T= tree, S =shrub, H= herb, C= climber)

In the study area, *Barringtonia acutangula* (Hijol), *Crateva magna*, *Persicaria lanata* (Panimorich), *Saccharum spontaneum* are commonly found in bank of rivers and canals. Paddy (*Oryza sativa*), potato (*Solanum tuberosum*), wheat (*Triticum aestivum*), sweet pumpkin (*Cucurbita pepo*) and maize (*Zea mays*) are the main cultivated crops which are exposed during dry season. In the rainy season the land is mainly used for cultivation of dhaincha (*Sesbania bispinosa*) and jute (*Corchorus capsularis*).

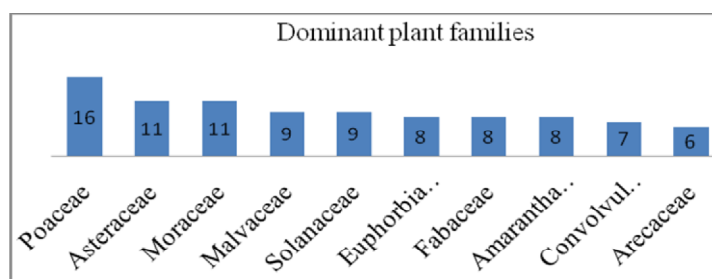


Fig. 2. Top ten dominant families along with the number of species.

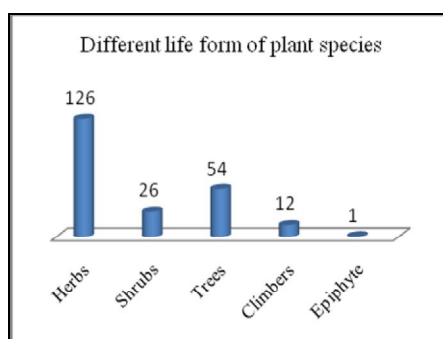


Fig. 3. Different life forms of plant species in Sreenagar Upazila.

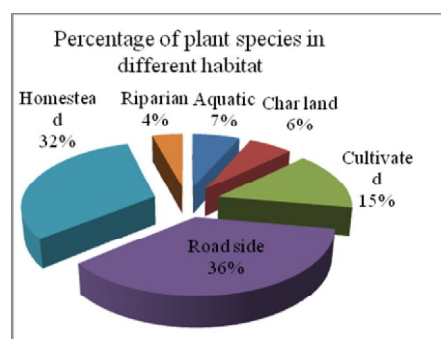


Fig. 4. Percentage of plant species in different habitats in Sreenagar upazila.

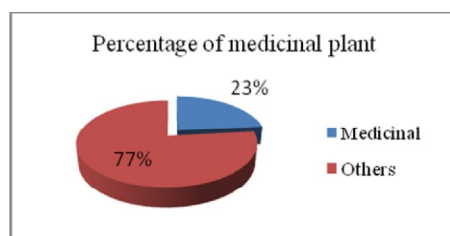


Fig. 5. Percentage of medicinal and non medicinal plant species.

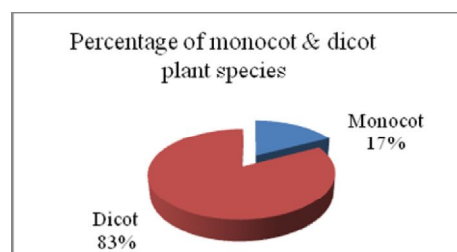


Fig. 6. Percentage of monocot and dicot plant species

The remarkable wild species of the study area are *Persicaria lanata*, *Lippia alba*, *Streblus asper*, *Synedrella nodiflora*, *Trema orientalis*, *Typhonium trilobatum*, *Xanthium indicum* etc. *Alternanthera sessilis*, *Chenopodium album*, *Glinus oppositifolius*, *Phyla nodiflora*, *Portulaca oleracea*, *Synedrella nodiflora*, *Oxalis corniculata* are commonly found to form the vegetation in char land. Some common aquatic angiosperms are *Eichhornia crassipes*, *Enhydra fluctuans*, *Ipomoea aquatica*, *Ludwigia adscendens*, *Ludwigia hyssopifolia*, *Nymphaea nouchali* and *Pistia stratiotes*.

Crateva magna (Bannya,barun), *Barringtonia acutangula* (Hijol), *Alstonia scholaris*, *Azadirachta indica*, *Persicaria lanata*, *Lippia alba*, *Phyllanthus reticulatus*, *Ruellia tuberosa*, *Sida acuta* are more available in the study area.

Calamus tenuis, *Coix lacryma-jobi*, *Lasia spinosa*, *Tinospora crispa* and *Passiflora foetida* are rarely found in study area. The number of these species is decreasing day by day. *Tinospora crispa* is a threatened species (Khan *et al.* 2001) which is a popular medicinal plant used by the local people.

Most common exotic plants of the study area were *Acacia auriculiformis* (Akashmoni), *Acacia nilotica* (Babla) and *Eucalyptus camaldulensis*. *Parthenium hysterophorus* was recorded as the poisonous exotic plant from Sreenagar. The invasive alien species at aquatic habitats namely *Eichhornia crassipes*, *Alternanthera philoxeroides*, *Ipomoea aquatica* and *Pistia stratiotes* were found to prohibit the growth and dispersal of other aquatic species of the study area destroying the aquatic vegetation. During the field works some threats like destruction of natural habitats by the local people, lack of awareness, unsustainable collection, and river degradation were identified as active in the study area. The wetlands in the study area are brought under cultivating process during the dry season. As a result the aquatic vegetation of these wetlands seems to be diminished. Uses of excessive amount of fertilizers, insecticides, pesticides as well as herbicides are the other reasons for diminishing the natural aquatic vegetation of the study area. Several discussions with local people have been conducted on the conservation issues of angiosperm flora. A number of suggestions came out from such discussion are presented below: (A) Native plants should be selected for plantation. (B) Conservation of the threatened plant species by *in-situ* methods should be undertaken. The local people should be involved in this activity. (C) Awareness among the local people should be created. (D) Nursery should be developed for the propagation of threatened plants. (E) Government and local NGOs can act jointly for the conservation of angiosperm flora.

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References

- Ahmed, Z.U., Z.N.T. Begum, M.A. Hassan, M. Khondker, S.M.H. Kabir, M. Ahmad, A.T.A. Ahmed, A.K.A. Rahman and E.U. Haque (Eds) 2008a. *Encyclopedia of Flora and Fauna of Bangladesh*, Vol. 6. Angiosperms: Dicotyledons (Acanthaceae – Asteraceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-408.
- Ahmed, Z.U., M.A. Hassan, Z.N.T. Begum, M. Khondker, S.M.H. Kabir, M. Ahmad, A.T.A. Ahmed, A.K.A. Rahman and E.U. Haque, (Eds)2008b. *Encyclopedia of Flora and Fauna*

- of Bangladesh, Vol. 12. Angiosperms: Monocotyledons (Orchidaceae – Zingiberaceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-552.
- Ahmed, Z.U., Z.N.T. Begum, M.A., Hassan, M. Khondker, S.M.H. Kabir, M. Ahmad, A.T.A. Ahmed, A.K.A. Rahman and E.U. Haque (Eds) 2009b. *Encyclopedia of Flora and Fauna of Bangladesh* Vol. 7. Angiosperms: Dicotyledons (Balsaminaceae – Euphorbiaceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-546.
- Ahmed, Z.U., Z.N.T. Begum, M.A., Hassan, M. Khondker, S.M.H. Kabir, M. Ahmad, A.T.A. Ahmed, A.K.A. Rahman and E.U. Haque (Eds) 2009c. *Encyclopedia of Flora and Fauna of Bangladesh* Vol. 8. Angiosperms: Dicotyledons (Fabaceae – Lythraceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-478.
- Ahmed, Z.U., Z.N.T., Begum, M.A., Hassan, M., Khondker, S.M.H., Kabir, M., Ahmad, A.T.A., Ahmed, A.K.A. Rahman and E.U. Haque (Eds) 2009d. *Encyclopedia of Flora and Fauna of Bangladesh* Vol. 9. Angiosperms: Dicotyledons (Magnoliaceae – Punicaceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-488.
- Ahmed, Z.U., Z.N.T., Begum, M.A., Hassan, M., Khondker, S.M.H., Kabir, M., Ahmad, A.T.A., Ahmed, A.K.A. Rahman and E.U. Haque (Eds) 2009e. *Encyclopedia of Flora and Fauna of Bangladesh*, Vol. 10. Angiosperms: Dicotyledons (Ranunculaceae – Zygophyllaceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-580.
- Alexiades, M. N. (ed.). 1996. *Selected Guidelines for Ethno botanical Research: A Field Manual*. The New York Botanical Garden, New York.
- Ara, H., B. Khan and S. N. Uddin. (eds.) 2013. *Red data book of vascular plants of Bangladesh*, Vol 2. Bangladesh National Herbarium, Dhaka, Bangladesh. 280 pp
- Bangladesh Bureau of Statistics 2011. Monthly Statistical Bulletin, December 2011. Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- Cronquist, A. 1981. *An integrated system of classification of flowering plants*. Columbia University Press, New York, pp. 1262
- Hooker, J.D. 1872-1897. *The flora of British India*. Vol. 1-7, London.
- Hyland, B.P.M. 1972. A technique for collecting botanical specimens in rain forest. *Flora Malesiana Bulletin*, 26: 2038-2040.
- Khan, M.S., M.M. Rahman, A.M. Huq, M.M.K. Mia, and M. A. Hassan. 1994. Assessment of biodiversity of Teknaf game reserve in Bangladesh focusing on economically and ecologically important plants species. *Bangladesh J. Plant. Taxon.* 1(1): 21-33.
- Khan, M.S. and A.M. Huq 2001. The vascular flora of Chunati wildlife sanctuary in south Chittagong, Bangladesh. *Bangladesh J. Plant. Taxon.* 8(1): 47-64.
- Khan M.S., M.M. Rahman and M.M. Ali (eds.). 2001. *Red Data Book of Vascular Plants of Bangladesh*. Bangladesh National Herbarium. pp. 179
- Khan, M.S., M.M. Rahman, A.M. Huq, M.M.K. Mia and M. A. Hassan. 1994. Assessment of biodiversity of Teknaf game reserve in Bangladesh focusing on economically and ecologically important plants species. *Bangladesh J. Plant. Taxon.* 1(1): 21-33.
- Prain, D. 1903. *Bengal Plant*. First Indian Reprint 1963, Bishen Singh Mahendra Pal Singh Dehra Dun. Vol. 1-2: 1-1013 pp.
- Rahman, M.A. and S.B. Uddin 1998. Some anti-rheumatic plants used by tribal people of Hill Tracts district. *Biodiversity Newsletter*, University of Chittagong. 2(2): 4.
- Rahman, M.O. and M. Begum, M.W. Ullah. 2013. Angiosperm flora of Sadar upazila of Munshiganj District Bangladesh. *Bangladesh J. Plant Taxon.* 20(2): 213-231.
- Rahman, M.O. and M.A. Hassan 1995. Angiospermic flora of Bhawal Narional Park, Gazipur, Bangladesh. *Bangladesh J. Plant Taxon.* 2(1&2): 47-79
- Rahman, M.O. and M.A. Hassan. 1995. Angiospermic flora of Bhawal Narional Park, Gazipur, Bangladesh. *Bangladesh J. Plant Taxon.* 2(1&2): 47-79.
- Sarker M. H. 2012. "Sreenagar Upazila" in Sirajul Islam and Ahmed A. Jamal, *Banglapedia: National Encyclopedia of Bangladesh* (Second ed), Asiatic society of Bangladesh.

- Siddiqui, K.U., M.A. Islam, Z.U. Ahmed, Z.N.T. Begum, M.A. Hassan, M. Khondker, M.M. Rahman, S.M.H. Kabir, M. Ahmad, A.T.A. Ahmed, A.K.A. Rahman and E.U. Haque (Eds) 2007c. *Encyclopedia of Flora and Fauna of Bangladesh*, Vol. **11**. Angiosperms: Monocotyledons (Agavaceae -Najadaceae). Asiatic Society of Bangladesh, Dhaka, pp. 1-399.
- Uddin, M.Z., M.F. Alam, A.S.M. Rahman and M.A. Hassan. 2011. Plant Biodiversity of Fashiakhali Wildlife Sanctuary, Bangladesh. Accepted for publication in First Bangladesh Forestry Congress Proceeding.
- Uddin, M.Z. and M.A. Hassan. 2004. Flora of Rema-Kalenga Wildlife Sanctuary. IUCN Bangladesh Country Office, Dhaka, Bangladesh, vi+120 pp.
- Uddin, M.Z. and M.A. Hassan. 2010. Angiosperm diversity of Lawachara National Park (Bangladesh): a preliminary assessment. *Bangladesh J. Plant Taxon.* **17** (1): 9-22.
- Uddin, S.B. and M.A. Rahman. 1999. Angiospermic flora of Himchari National Park, Cox's Bazar, *Bangladesh. J. Plant Taxon.* **6**(1): 31-68
- Uddin, M.Z., M. F. Alam, M. A. Rahman and M. A. Hassan. 2013. Diversity in angiosperm flora of Teknaf Wildlife Sanctuary, Bangladesh. *Bangladesh J. Plant Taxon.* **20**(2): 145-162.
- Uddin, S.N., M.S. Khan, M.A. Hassan and M.K. Alam 1998. An annotated checklist of angiospermic flora of Sitapahar at Kaptai in Bangladesh. *Bangladesh J. Plant Taxon.* **5**(1): 13-46.
- Uddin, M. Z. and M. A. Hassan. 2010. Angiosperm diversity of Lawachara National Park (Bangladesh): a preliminary assessment. *Bangladesh J. Plant Taxon.* **17**(1): 9-22.
- Uddin, M. Z. and Md. Abiabdullah. 2016. Taxonomic study on the angiosperms of char kukri mukri wildlife sanctuary, Bhola district. *J. Asiat. Soc. Bangladesh, Sci.* **42**(2): 153-168.

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