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An Assessment of Angiosperm Taxa at the Village Jamtala Under Sadar Upazila of Capai Nawabganj District, Bangladesh

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Research

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ABSTRACT

The present paper focused on an assessment of angiosperm diversity at the village Jamtala under Sadar Upazila of Capai Nawabganj district, Bangladesh conducted during December 2013 to June 2015. A total of 151 species belonging to 131 genera under 64 families were recorded. Magnoliopsida (Dicotyledones) is represented by 51 families, 105 genera and 123 species, whereas Liliopsida (Monocotyledones) by 13 families, 26 genera and 28 species. These comprise of 59 herbs, 45 trees, 29 shrubs, 18 climbers belong to 64 families. For each species botanical name, local name, habit, voucher number and family were provided.

INTRODUCTION

Jamtala is a village under Nawabganj Sadar upazila of Chapai Nawabganj in the Division of Rajshahi Bangladesh. Nawabganj upazila area is 451.78 km2 located in between 24˚36′N 88˚16′E Coordinates: 24˚36′N 88˚16′E. It is bounded by Gomastapur upazila on the north, on the north-east Nachole, on the west Shibganj and on the south-east Rajshahi Zila. Population: Total 530592; male 254629, female 275963; Muslim 507483, Hindu 20644, Buddhist 3, Christian 1239 and others 1223. Literacy rate: Average literacy 46.3%; male 44.8%, female 47.7%. Main sources of income: Agriculture 40%, non-agricultural labourer 2.86%, Rice mils 62% and others mils 208%, commerce 16.87%, transport and communication 2.14%, service 26.26%, construction 5.80%, and others 12.65%. Ownership of agricultural land: Landowner 60.36%, landless 40.64%; agricultural landowner: urban 47.12% and rural 60.64%. Main Crops: Paddy, jute, sugarcane, wheat, betel leaf, oil seeds, pulses. Main Fruits: Mango, jackfruit, litchi, black berry, palm, coconut, watermelon and boroi. Water bodies Main River: Mohanonda. Manufacturing Industries: Silk mill, textile mill, cold storage and aluminium factory are different types of manufacturing industries are present. Main exports Mango, Sugar, jute hessian, banana, pineapple, onion, garlic, vegetables. Access to electricity all the wards and unions of the upazila are under rural electrification net-work. However 75% of the dwelling households have access to electricity. Sources of drinking water: Tube-well 83.72%, tap 10.37%, pond 0.23% and others 5.68%. Health centres Upazila hospital 2, health complex 1, satellite clinic and family welfare centre 4, maternity 1, dispensary more than 50, community clinic above 30. Operationally important NGOs are CARE, BRAC, ASA, Proshika, IDE, Dasco, Nijera Kari, Thengamara Mahila Sabuj Sangha (TMSS), Trinamul, Vision, Proyash, Manobic Unnayan Society, Swanirvar Artha-Samajik Unnayan Sangstha, Kolyani Mohila Sangsad, Amnura Santal Mission, BIKE, BISE, BIDOS, BARIO etc.1. at a glance.pdf "All about Chapai Nawabganj, Bangladesh Bureau of Statistics"(PDF).2. Bangladesh Bureau of Statistics (BBS) Statistics and Informatics Division (SID) Ministry of Planing Government of the People's Republic of Bangladesh [1].

The climate of this village 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 (90 to 97˚F) during the months of April, May, June and July and the minimum temperature recorded in January is about 7 to 16˚C (45 to 61˚F). The highest rainfall is observed during the months of monsoon.

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The annual rainfall in the district is about 1,448 millimeters (57.0 in).

A number of floristic works have been done in Bangladesh including [2-20]. But no floristic studies are found in the study area. Moreover, the area supports a large number of angiosperm species including herbs, shrubs, climbers and trees. Like other parts of the country, the floristic elements of this area is in risk because of various anthropogenic activities including irrigation and modern agriculture, population settlements and firewood collection and also habit degradation. In order to make a documentation of the angiosperm taxa of the area, an attempt has been made to prepare a preliminary assessment of the angiosperm plant species occurring in Jamtala village under Sadar Upazila of Capai Nawabganj district, Bangladesh.

MATERIALS AND METHODS

The research work is based on the fresh materials collected through twenty five field trips to the area during December 2013 to June 2015. Botanical specimens were collected, and field identification of the collected specimens was confirmed comparing with herbarium specimens at the Herbarium, Department of Botany, Rajshahi University. In some cases, standard literature, such as and were consulted for identification purposes. The specimens were mounted and deposited in the Herbarium, Department of Botany, Rajshahi University for future reference [21-51].

RESULTS AND DISCUSSION

The present paper focused on an assessment of angiosperm diversity at the village Jamtala under Sadar Upazila of Capai Nawabganj district, Bangladesh conducted during December 2013 to June 2015. A total of 151 species belonging to 131 genera under 64 families were recorded. *Magnoliopsida* (Dicotyledones) is represented by 51 families, 105 genera and 123 species, whereas Liliopsida (Monocotyledones) by 13 families, 26 genera and 28 species. These comprise of 59 herbs, 45 trees, 29 shrubs, 18 climbers belong to 64 families. *Asteraceae, Euphorbiaceae* and *Moraceae* are the largest family in Magnoliopsida represented by 8species in each and *Liliopsida, Areaceae, Poaceae* is the largest family with 5species **(Tables 1 and 2).** *Amaranthaceae, Acanthaceae, Asteraceae, Apocynaceae, Araceae, Arecaceae, Caesalpiniaceae, Cucurbitaceae, Euphorbiaceae, Fabaceae, Lamiaceae, Moraceae, Malvaceae, Mimosaceae, Myrtaceae, Poaceae, Rutaceae, Solanaceae, Verbenaceae* are the dominant families with high species diversity. For each species botanical name, local name, habit, voucher number and family were provided of 151 species recorded here, herbs are represented by 59 (39.07%), trees by 45 (29.80%), shrubs by 29 (19.05%), climber by 18 (11.92%) **(Figure 1).**

Table 1. Showing the families of the plant species recorded.

S/N	Family name	No. of the herb species	No. of the Shrub species	No. of the Climber species	No. of the Tree species
01	*Annonaceae*	-	-	-	1
02	*Piperaceae*	-	-	3	-
03	*Nelumbonaceae*	1	-	-	-
04	*Nymphaeaceae*	2	-	-	-
05	*Menispermaceae*	-	-	1	-
06	*Papaveraceae*	1	-	-	-
07	*Moraceae*	-	-	-	8
08	*Chenopodiaceae*	1	-	-	-
09	*Amaranthaceae*	5	-	-	-
10	*Portulacaceae*	1	-	-	-
11	*Basellaceae*	-	-	1	-
12	*Molluginaceae*	1	-	-	-
13	*Polygonaceae*	1	-	-	-
14	*Elaeocarpaceae*	-	-	-	1
15	*Tiliaceae*	-	1	-	-
16	*Sterculiaceae*	-	1	-	-
17	*Bombacaceae*	-	-	-	1
18	*Malvaceae*	1	2	-	-
19	*Caricaceae*	-	-	-	1
20	*Cucurbitaceae*	-	-	4	-
21	*Brassicaceae*	1	-	-	-
22	*Moringaceae*	-	-	-	1
23	*Sapotaceae*	-	-	-	1
24	*Ebenaceae*	-	-	-	1
25	*Crassulaceae*	1	-	-	-
26	*Mimosaceae*	-	-	1	2
27	*Caesalpiniaceae*	-	2	-	3
28	*Fabaceae*	1	1	1	1

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29	*Lythraceae*	-	-	-	2
30	*Trapaceae*	1	-	-	-
31	*Myrtaceae*	-	-	-	2
32	*Punicaeae*	-	-	-	1
33	*Combretaceae*	-	-	-	3
34	*Euphorbiaceae*	3	4	-	1
35	*Rhamnaceae*	-	-	-	1
36	*Anacardiaceae*	-	-	-	1
37	*Meliaceae*	-	-	-	1
38	*Rutaceae*	-	2	-	2
39	*Oxalidaceae*	1	-	-	1
40	*Apiaceae*	2	-	-	-
41	*Apocynaceae*	-	2	-	2
42	*Asclepiadaceae*	-	1	1	-
43	*Solanaceae*	1	5	-	-
44	*Convolvulaceae*	-	-	3	-
45	*Cuscutaceae*	-	-	1	-
46	*Boraginaceae*	1	-	-	-
47	*Verbenaceae*	1	2	-	1
48	*Lamiaceae*	4	-	-	-
49	*Acanthaceae*	1	3	-	-
50	*Rubiaceae*	-	-	1	1
51	*Asteraceae*	7	1	-	-
52	*Arecaceae*	-	-	-	4
53	*Araceae*	5	-	-	-
54	*Commelinaceae*	1	-	-	-
55	*Cyperaceae*	1	-	-	-
56	*Poaceae*	2	2	-	1
57	*Bromeliaceae*	1	-	-	-
58	*Musaceae*	1	-	-	-
59	*Zingiberaceae*	3	-	-	-
60	*Costaceae*	1	-	-	-
61	*Cannaceae*	1	-	-	-
62	*Pontederiaceae*	1	-	-	-
63	*Liliaceae*	2	-	1	-
64	*Aloeaceae*	1	-	-	-
	Total	59	29	18	45

Table 2. An Asessment of Angiosperm Taxa at the village Jamtala under Sadar Upazila of Chapai Nawabganj district, Bangladesh.

Sl. No.	Botanical name	Local name	Family	Habit	Voucher number
01	*Abelmoschus esculentus (L.) Moench.*	Dherosh	Malvaceae	Shrub	MJ-118
02	*Abroma augusta (L.) f.*	Ulat Kambal	Sterculiaceae	Shrub	MJ-04,
03	*Acacia nilotica(L.) Del.*	Babla	Mimosaceae	Tree	MJ-109
04	*Acalypha indicaL.*	Muktajuri	Euphorbiaceae	Herb	MJ-104
05	*Achyranthes aspera L.*	Apang	Amaranthaceae	Herb	MJ-28
06	*Adhatoda vasica Nees.*	Basak	Acanthaceae	Shrub	MJ-73
07	*Aegle marmelos (L.)Correa*	Bel	Rutaceae	Tree	MJ-112
08	*Albizia procera (Roxb.)Benth.*	Koroi	Mimosaceae	Tree	MJ-144
09	*Allium cepa L.*	Piaj	Liliaceae	Herb	MJ-15
10	*Allium sativumL.*	Rosun	Lilaceae	Herb	MJ-25
11	*Alocasia indica (Roxb.) Schott.*	Mankachu	Araceae	Herb	MJ-39
12	*Aloe vera(L) Burm.f.*	Gritakumari	Aloeaceae	Herb	MJ-55
13	*Alstonia scholaris (L.) R. Br.*	Chhatim	Apocynaceae	Tree	MJ-51
14	*Alternanthera philoxeroides (Mart.) Griseb.*	Helencha	Amaranthaceae	Herb	MJ-89
15	*Amaranthus spinosus L.*	Katanotey	Amaranthaceae	Herb	MJ-93
16	*Amaranthus viridis L.*	Notey	Amaranthaceae	Herb	MJ-98

17	*Amorphophallus campanulatus (Roxb.)Bl. ex. Decne.*	Olkachu	Araceae	Herb	MJ-27
18	*Andrographis paniculata Wall ex Nees*	Kalomegh	Acanthaceae	Herb	MJ-128
19	*Annanas sativus Schult.f.*	Anaras	Bromeliaceae	Herb	MJ-14
20	*Anthocephalus chinensis (Lamk.) Rich. ex Walp.*	Kadam	Rubiaceae	Tree	MJ-12
21	*Areca catechu L.*	Shupari	Arecaceae	Tree	MJ-24
22	*Argemone mexicana L.*	Shialkanta	Papaveraceae	Herb	MJ-80
23	*Artocarpus heterophyllus Lamk.*	Kathal	Moraceae	Tree	MJ-85
24	*Artocarpus lacuchaBuch.-Ham*	Deua	Moraceae	Tree	MJ-79
25	*Asparagus racemosusWilld.*	Shotomuli	Liliaceae	Climber	MJ-40
26	*Averrhoa carambola L.*	Kamranga	Oxalidaceae	Tree	MJ-134
27	*Azadirachta indica A. Juss.*	Neem	Meliaceae	Tree	MJ-09
28	*Bambusa arundinacea (Retz.) Willd*	Bamboo	Poaceae	Tree	MJ-19
29	*Basella alba L.*	Puishak	Basellaceae	Climber	MJ-96
30	*Benincasa hispida (Thunb.) Cogn.*	Chalkumra	Cucurbitaceae	Climber	MJ-06
31	*Bombax ceiba L.*	Shimul	Bombacaceae	Tree	MJ-05
32	*Borassus flabellifer L.*	Taal	Arecaceae	Tree	MJ-142
33	*Brassica napus L.*	Mustard	Brassicaceae	Herb	MJ-120
34	*Bryophyllum pinnatum (Lam.) Oken*	Pathorkuchi	Crassulaceae	Herb	MJ-121
35	*Cajanus cajan (L.) Huth.*	Arhor daal	Fabaceae	Shrub	MJ- 07
36	*Calotropis procera (Aiton) W. T. Aiton*	Shet Akand	Asclepiadaceae	Shrub	MJ- 69
37	*Canna indica L.*	Kolaboti	Cannaceae	Herb	MJ-50
38	*Capsicum frutescens L.*	Marich	Solanaceae	Herb	MJ-113
39	*Carica papaya L.*	Pepe	Caricaceae	Tree	MJ-83
40	*Carissa carandas L.*	Karomcha	Apocynaceae	Shrub	MJ-52
41	*Senna alata (L.) Roxb.*	Dadmardan	Caesalpiniaceae	Shrub	MJ-94
42	*Cassia fistula L.*	Bandar lathi	Caesalpiniaceae	Tree	MJ-110
43	*Senna sophera (L.) Roxb.*	Kalkasunde	Caeslpiniaceae	Shrub	MJ-101
44	*Celosia cristata L.*	Morogful	Amaranthaceae	Herb	MJ-91
45	*Centella asiatica (L.) Urban.*	Thankuni	Apiaceae	Herb	MJ-141
46	*Cestrum nocturnum L.*	Hasnahena	Solanaceae	Shrub	MJ-44
47	*Chenopodium album L.*	Batuashak	Chenopodiaceae	Herb	MJ-81
48	*Citrus aurantifolia (Christ.) Sw.*	Lebu	Rutaceae	Shrub	MJ-117
49	*Clerodendrum viscosum Vent.*	Bhat	Verbenaceae	Shrub	MJ-30
50	*Clitoria ternatea L.*	Oporajita	Fabaceae	Climber	MJ-145
51	*Coccinia grandis (L.) Voigt*	Telakucha	Cucurbitaceae	Climber	MJ-106
52	*Cocos nucifera L.*	Narikel	Arecaceae	Tree	MJ-140
53	*Colocasia esculenta (L.) Schott.*	Kochu	Araceae	Herb	MJ-151
54	*Commelina benghalensis L.*	Kanshira	Commelinaceae	Herb	MJ-43
55	*Corchorus capsularis L.*	Titapat	Tiliaceae	Shrub	MJ-119
56	*Coriandrum sativum L.*	Dhonepata	Apiaceae	Shrub	MJ- 58
57	*Costus speciosus (Koenig) Sm.*	Keu	Costaceae	Herb	MJ-16
58	*Croton bonplandianusBaill.*	Croton	Euphorbiaceae	Herb	MJ-139
59	*Curcuma longa L.*	Holud	Zingiberaceae	Herb	MJ-62
60	*Curcuma zedoaria Rosc.*	Sothi	Zingiberaceae	Herb	MJ-59
61	*Cuscuta reflexa Roxb.*	Shornolota	Cuscutaceae	Climber	MJ-10
62	*Cynodon dactylon (L.) Pers.*	Durbaghas	Poaceae	Herb	MJ-13
63	*Cyperus rotundus L.*	Mutha	Cyperaceae	Herb	MJ-53
64	*Datura metel L.*	Dhutura	Solanaceae	Shrub	MJ-23
65	*Diospyros malabarica (Desr.) Kostel*	Gaab	Ebenaceae	Tree	MJ-87
66	*Eclipta alba (L.) Hassk*	Kalokeshi	Asteraceae	Herb	MJ-66
67	*Eichhornia crassipes (Mart.) Sol.-Lau.*	Kochuripana	Pontederiaceae	Herb	MJ- 41
68	*Elaeocarpus robustus Roxb.*	Jolpai	Elaeocarpaceae	Tree	MJ-115
69	*Enhydra fluctuans Lour*	Helencha	Asteraceae	Herb	MJ-130
70	*Erythrina variegata L.*	Mother	Fabaceae	Tree	MJ-146
71	*Eupatorium triplinerve Vahl.*	Ayapan	Asteraceae	Shurb	MJ-29
72	*Euphorbia antiquorum L.*	Sibgach	Euphorbiaceae	Shrub	MJ-44
73	*Euphorbia hirta L.*	Dudhiya	Euphorbiceae	Herb	MJ-131
74	*Feronia limonia (L.) Swingle*	Kodbel	Rutaceae	Tree	MJ-56
75	*Ficus benghalensis L.*	Bot	Moraceae	Tree	MJ-74
76	*Ficus hispida L. f.*	Khoksha dumur	Moraceae	Tree	MJ-35
77	*Ficus racemosa L.*	Jagdumur	Moraceae	Tree	MJ-88

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78	*Ficus religiosa L.*	Pakur	Moraceae	Tree	MJ-26
79	*Glinus oppositifolius (L.) A. DC.*	Gima shak	Molluginaceae	Herb	MJ-33
80	*Heliotropium indicum L.*	Hatishur	Boraginaceae	Herb	MJ-37
81	*Hemidesmus indicus (L.) R. Br.*	Anantamul	Asclepiadaceae	Climber	MJ- 21
82	*Hibiscus rosa-sinensis L.*	Joba	Malvaceae	Shrub	MJ-99
83	*Ipomoea alba L.*	Dudh kolmi	Convolvulaceae	Climber	MJ-63
84	*Ipomoea aquatica Forssk.*	Kalmishak	Convolvulaceae	Climber	MJ-90
85	*Ipomoea batatas (L.) Lamk.*	Mistialu	Convolvulaceae	Climber	MJ-61
86	*Jatropha gossypifolia L.*	Lalkundu	Euphorbiceae	Shrub	MJ-136
87	*Justicia gendarussa L.*	Jagatmardan	Acanthaceae	Shrub	MJ-22
88	*Lablab purpureus (L.) Sweet.*	Shim	Fabaceae	Climber	MJ-138
89	*Lagenaria siceraria (Mol.) Stan.*	Lau	Cucurbitaceae	Climber	MJ-116
90	*Lagerstroemia speciosa (Linn.) Pres.*	Jarul	Lythraceae	Tree	MJ-32
91	*Lasia spinosa (L.) Thw.*	Kantakachu	Araceae	Herb	MJ- 70
92	*Lawsonia inermis Linn.*	Mehedi	Lythraceae	Shrub	MJ-147
93	*Leonurus sibiricus L.*	Raktodrone	Lamiaceae	Herb	MJ-64
94	*Leucas aspera (Willd.) Link.*	Setodrone	Laminaceae	Herb	MJ-38
95	*Leucas cephalotes(Roth.) Spreng.*	Dandakolos	Lamiaceae	Herb	MJ-31
96	*Mangifera indica L.*	Aam	Anacardiaceae	Tree	MJ-122
97	*Mimosa pudica L.*	Lojjaboti	Mimosaceae	Climber	MJ-95
98	*Mimusops elengi L.*	Bokul	Sapotaceae	Tree	MJ-100
99	*Momordica charantia L.*	Korolla	Cucurbitaceae	Climber	MJ-125
100	*Moringa oleifera Lam.*	Sojna	Moringaceae	Tree	MJ-108
101	*Morus indica L.*	Tut	Moraceae	Tree	MJ-82
102	*Murraya paniculata (L.) Jack*	Kamini	Rutaceae	Shrub	MJ-123
103	*Musa sapientum Linn.*	Kola	Musaceae	Shrub	MJ- 42
104	*Nelumbo nucifera Gaertn.*	Poddo	Nelumbonaceae	Herb	MJ-76
105	*Nerium indicum Mill.*	Rakta Karobi	Apocynaceae	Shrub	MJ-49
106	*Nyctanthes arbortristis L.*	Sheuli	Verbenaceae	Shrub	MJ-11
107	*Nymphaea nouchali Burm. f.*	Sapla	Nymphaeaceae	Herb	MJ-77
108	*Nymphaea stellata Willd.*	Chhoto Shaluk	Nymphaeaceae	Herb	MJ-78
109	*Ocimum sanctum L.*	Tulshi	Lamiaceae	Shrub	MJ-71
110	*Oryza sativa L.*	Dhan	Poaceae	Herb	MJ-45
111	*Oxalis corniculata L.*	Amrul	Oxalidaceae	Herb	MJ-133
112	*Paederia foetida L.*	Gandhavaduli	Rubiaceae	Shrub	MJ-129
113	*Phoenix sylvestris (L.) Roxb.*	Khajur	Arecaceae	Tree	MJ-150
114	*Phyla nodiflora (L.) Greene*	Bhui Okar	Verbenaceae	Herb	MJ-149
115	*Phyllanthus emblica L.*	Amloki	Euphorbiaceae	Tree	MJ-124
116	*Phyllanthus reticulatus Poir.*	Chitki	Euphorbiaceae	Shrub	MJ-57
117	*Piper betel L.*	Pan	Piperaceae	Climber	MJ-01
118	*Piper longum L.*	Pipul	Piperaceae	Climber	MJ-75
119	*Piper nigrum L.*	Golmarich	Piperaceae	Climber	MJ- 34
120	*Pistia stratiotes L.*	Topapana	Araceae	Herb	MJ-18
121	*Polyalthia longifolia (Sonn.) Thw.*	Debdaru	Annonaceae	Herb	MJ-02
122	*Persicaria hydropiper L.*	Pani Morich	Polygonaceae	Herb	MJ-97
123	*Portulaca oleracea L.*	Nunia shak	Portulacaceae	Herb	MJ-92
124	*Psidium guajava L.*	Peyara	Myrtaceae	Tree	MJ-126
125	*Punica granatum Linn.*	Dalim	Punicaeae	Tree	MJ-103
126	*Rauvolfia serpentina Benth.*	Sarpagandha	Apocynaceae	Herb	MJ-72
127	*Ricinus communis L.*	Bherenda	Euphorbiaceae	Shrub	MJ-54
128	*Ruellia suffruticosa Roxb.*	Chotpote	Acanthaceae	Shrub	MJ- 46
129	*Saccharum officinarum L.*	Aakh	Poaceae	Shrub	MJ-60
130	*Saraca indica L.*	Ashok	Caesalpinaceae	Tree	MJ- 84
131	*Sida cordifolia L.*	Berela	Malvaceae	Herb	MJ-105
132	*Solanum nigrum L.*	Titbegun	Solanaceae	Herb	MJ-65
133	*Solanum torvum Swartz.*	Hat Begun	Solanaceae	Shrub	MJ-127
134	*Streblus asper Lour.*	Sheora	Moraceae	Tree	MJ-86
135	*Syzygium cumini (L.) Skeel.*	Jam	Myrtaceae	Tree	MJ-107
136	*Tagetes erecta L.*	Gendaphul	Asteraceae	Herb	MJ-67
137	*Tamarindus indica L.*	Tetul	Caesalpiniaceae	Tree	MJ-102
138	*Terminalia arjuna (Roxb. ex DC.) Wight & Arn.*	Arjun	Combretaceae	Tree	MJ- 47
139	*Terminalia billirica (Gaertn.) Roxb.*	Bahera	Combretaceae	Tree	MJ-111

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140	*Terminalia chebula (Gaertn.) Retz.*	Haritaki	Combretaceae	Tree	MJ-08
141	*Tinospora cordifolia Willd.*	Guloncho	Menispermaceae	Climber	MJ-03
142	*Trapa bispinosa Roxb.*	Panifol	Trapaceae	Herb	MJ-135
143	*Tridax procumbens L.*	Tridhara	Asteraceae	Herb	MJ- 48
144	*Vernonia patula (Dryand.) Merr.*	Kukshim	Asteraceae	Hreb	MJ-20
145	*Vitex negundo L.*	Nisinda	Verbenaceae	shrub or small tree	MJ-148
146	*Wedelia chinensis (Osbeck) Merr.*	Mahavingoraj	Asteraceae	Herb	MJ-68
147	*Withania somnifera (L.) Dunal.*	Aswagandha	Solanaceae	Shrub	MJ-36
148	*Xanthium indicum J. Koenig ex Roxb.*	Hagra	Asteraceae	Herb	MJ-137
149	*Zea mays L.*	Vutta	Poaceae	Shurb	MJ-143
150	*Zingiber officinale Roscoe.*	Ada	Zingiberaceae	Herb	MJ-17
151	*Zizyphus mauritiana Lamk.*	Boroi	Rhamnaceae	Tree	MJ-132

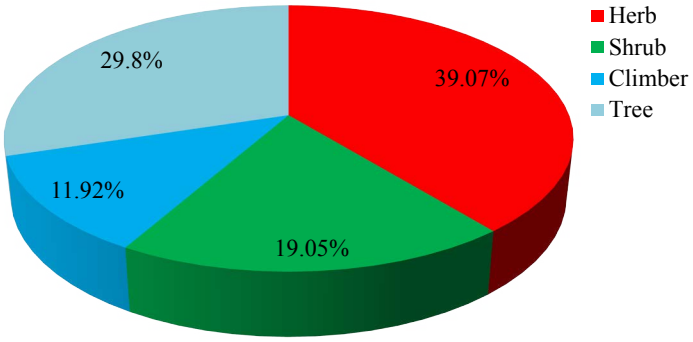

Figure 1. Analysis of data based on habit showed the Angiosperm Flora in Pie Chart.

Based on this study, a preliminary list of angiosperm flora in Jamtala Village under Sadar Upazila of Chapai Nawabganj district, Bangladesh was made that includes 151 angiosperm species under 131 genera and 64 families **(Table 1).** The collected information is comparable with the result of other studies in Bangladesh. A total of 243 species belonging to 195 genera under 95 families were recorded in Khagrachhari district [2]. A total of 535 species belonged to 370 genera and 103 families are documented in Tekhnaf Wildlife Sanctuary [19]. A total of 425 species belonging to 321 genera 108 families are recorded in Rajshahi district [52,53]. A total of 302 species belonging to 243 genera 84 families are recorded in Bangladesh Police Academy, Rajshahi [11]. No published information recorded on the diversity of angiosperm plant species in Jamtala Village under Sadar Upazila of Chapai Nawabganj district, Bangladesh **(Figure 2).**

Figure 2. Photographs of important angiosperm plant species in the study area.

Distribution of angiosperm species in the families shows variation. The family *Asteraceae, Euphorbiaceae* and Moraceae is represented by 8 species in each. Solanaceae is represented by 6 species. Each of *Amaranthaceae, Casalpinaceae, Arraceae and Poaceae* is represented by 5 species. *Acanthaceae, Apocynaceae, Cucurbitaceae, Fabaceae, Rutaceae, and Lamiaceae* are represented by 4 species. A single species in each was recorded by 34 families while two to six species in each was recorded by 26 families **(Table 1).**

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Medicinally important weeds: The important medicinal weed species at Jamtala village under Chapai Nawabganj district were highlighted. A total of 34 medicinal plant species belonging to 32 genera and 25 families were collected and recorded for their use in various ailments. Most of the local people in the study area are poor are illiterate. In one hand, these people are out of the reach of modern medicines and on other hand, the market price of most available medicines are very expensive. As a result, these medicinal plants are used by them to cure following the diseases, especially for abscess, asthma, abortion, cough, cold, small pox, dysentery, diarrhea, diabetes, eczema, fever, and itches, jaundice, menstrual disease, paralysis, piles, skin diseases, snake-bite, toothache, worm, wound and others **(Table 3).**

Table 3. Medicinal angiosperm weed species are used by local people at Jamtala village of Chapai Nawabganj District.

S/N	Plant species	Family name	Parts used	Diseases to be treated
1	*Achyranthes aspera L.*	*Amaranthaceae*	L, B, F	Sciatica, abortion, eczema and wound.
2	*Acalypha indica L.*	*Euphorbiaceae*	L	Skin disease
3	*Aloe vera L.*	*Aloeaceae*	L, M	Beautification, tonic, anthelmintic, wound and itches.
4	*Amaranthus spinosus L.*	*Amaranthaceae*	WP	Asthma and cold fever.
5	*Amaranthus viridis L.*	*Amaranthaceae*	L	Demulcent, diuretic, snake-bite
6	*Andrographis paniculata (Burm.f.) Wall. ex Nees*	*Acanthaceae*	L, WP	Wound, ring worm, itches, fever, dysentery, diarrhea and tonic.
7	*Argemone mexicana L.*	*Papaveraceae*	S, R, LA	Fever, cold, jaundice, diabetes, tonic, diuretic, pain killer, wound, skin disease and itches.
8	*Asparagus racemosus L.*	*Asparagaceae*	B, R	Tonics, blood dysentery, diabetes, jaundice, and diarrhea, promotes lactation in mother, wound and itches.
9	*Adhatoda vasica Nees.*	*Acanthaceae*	L, B	Cough, asthma, vomiting and worm
10	*Bryophyllum pinnatum (Lam.) Oken*	*Crassulaceae*	L	Cold, cough, diabetes, diuretic, blood dysentery and wound.
11	*Centella asiatica (L.) Urban*	*Apiaceae*	L, WP	Dysentery, headache, itches and eczema.
12	*Coccinia grandis L.*	*Cucurbitaceae*	L, R	Fever, diabetes, cough, asthma and dysentery.
13	*Calotropis procera Br.*	*Asclepiadaceae*	L, R, LA	Pain, dysentery and injury,
14	*Costus speciosus Sm.*	*Costaceae*	Rh	Diabetes, high fever
15	*Colocasia esculenta (L.) Schott.*	*Araceae*	L, T	Constipation, colic, digestive,
16	*Cuscuta reflexa L.*	*Cuscutaceae*	WP	Liver disease
17	*Datura metel L.*	*Solanaceae*	L	Wound and earache.
18	*Eclipta alba (L.) Hassk.*	*Asteraceae*	L, WP	Wound, itches, skin disease, colour of hairs, jaundice, asthma and gall bladder stone.
19	*Euphorbia hirta L.*	*Euphorbiaceae*	L	Bronchitis, cough
20	*Heliotropium indicum L*	*Boraginaceae*	L	Fever, skin disease
21	*Leucas aspera L.*	*Lamiaceae*	L	Fever, worm
22	*Leucas cephalotes (Roth.) Spreng*	*Lamiaceae*	L, R	Asthma, cough
23	*Mimosa pudica L.*	*Fabaceae*	L, R	Fever, snake-bite and dysentery
24	*Ocimum sanctum L.*	*Lamiaceae*	L, R	Cold, cough, itches, ringworm, earache, wound and fever.
25	*Oxalis corniculata L.*	*Oxalidaceae*	L	Cough, scabies, itches, dysentery, anemia, piles, dyspepsia and fever.
26	*Persicaria hydropiper L.*	*Polygonaceae*	L	Insects-bite
27	*Portulaca quadrifida L.*	*Portulacaceae*	WP	Diuretic, dysentery, diseases of liver, spleen, kidney, scurvy, piles
28	*Rauvolfia serpentina Benth.*	*Apocynaceae*	R	Blood pressure, tonic, diarrhea, dysentery, colic and fever.
29	*Stephania japonica (Thunb.) Miers.*	*Menispermaceae*	R, L	Astringent, fever, diarrhea, dyspepsia, abscess, vertigo, dysentery
30	*Solanum torvum Swartz.*	*Solanaceae*	R	Menstruation problems, diabetes
31	*Spilanthes calva DC.*	*Asteraceae*	I	Toothache
32	*Tinospora cordifolia Miers.*	*Menispermaceae*	WP, S	Stomachic, febrifuge, tonic, fever, skin disease, rheumatism, heart disease, jaundice, burning sensation, colic, dropsy

33	*Wedelia chinensis (Osbeck) Merr.*	*Asteraceae*	WP, L	Hair disease, jaundice, fevers, astringent, haemorrhages, toothache, asthma, bronchitis
34	*Xanthium indicum Koen ex Roxb*	*Asteraceae*	WP, S, F, R, L	Diabetes, bitter, tonic, cancer, small-pox, snake-bite, insect-bite, ulcers, boils, abscess, herpes

L: Leaf, S: Stem, R: Root, LA: Latex, WP: Whole plant, F: Fruit, B: Bark, T: Tuber, Rh: Rhizome, I: Inflorescence

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