

Angiospermic diversity of Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh, India

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Manuscript received: 06 September 2015

Accepted for publication: 14 September 2015

ABSTRACT

Tiwari A. P., Khanna K. K. & Dubey P. C. 2015. Angiospermic diversity of Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh, India. *Geophytology* 45(2): 139-151.

A list of angiospermic plants occurring in Gandhi Sagar Wildlife Sanctuary has been presented in the paper. Extensive collections were made in the area during different seasons from 2013 to 2014, and their subsequent identifications have revealed the occurrence of 502 species of angiosperms under 321 genera and 85 families in the sanctuary. Enumeration of each species along with the details of analysis of status of families, genera and species, dominant families, dominant genera, life forms and rare plants have been provided in the paper.

Key-words: Angiospermic diversity, Gandhi Sagar Wildlife, Madhya Pradesh.

INTRODUCTION

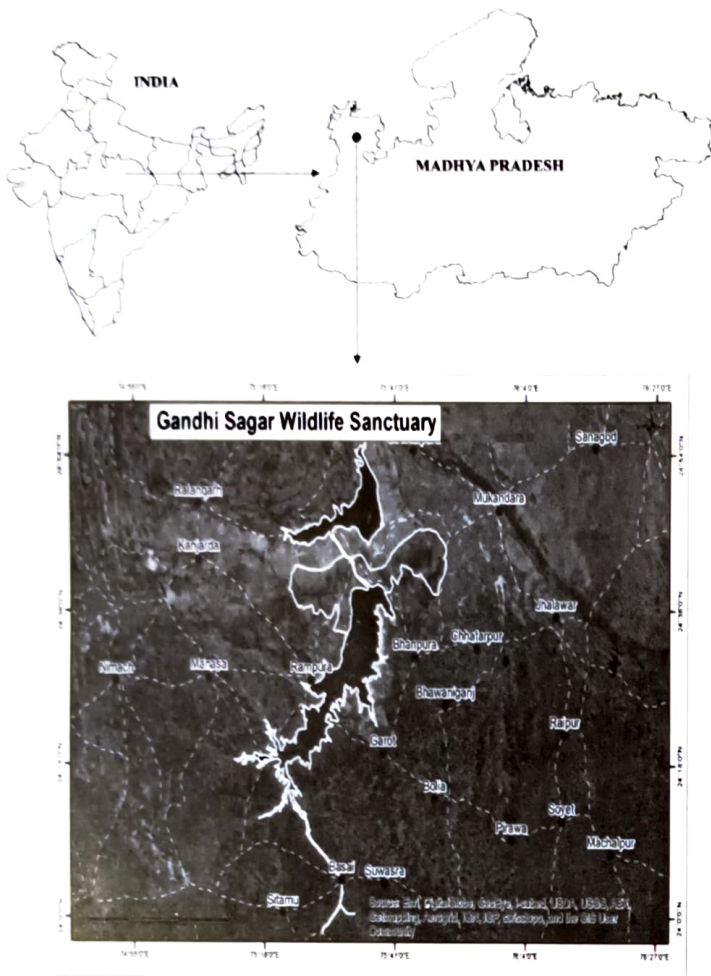
The protected areas are the important designated places for conservation of biodiversity in natural habitat indicating the richness of floristic composition. Gandhi Sagar Wildlife Sanctuary is located in Malwa plateau (Lat. 23°45'-25°2'N; Long. 74°42'-75°50'E) and covers an area of 368.62 km² in Mandsaur and Nimach districts of Madhya Pradesh (Text-figure 1). The Chambal River passes through the sanctuary and divides it into two parts; the western part is in Nimach district while eastern part is in Mandsaur district. Climate of the sanctuary is generally dry. There are three distinct seasons, viz., summer (March to June), winter (November to February) and rainy (July to September). During March to June, the average maximum temperature reaches up to 43°C and average minimum

temperature up to 27°C. November to February are the coldest months with 10°C as average minimum temperature.

FOREST TYPES OF THE SANCTUARY

The forests of the sanctuary can be broadly classified into three categories in accordance with Champion and Seth (1968).

1. Northern tropical dry mixed deciduous forests [5B/C2]: This type of forest occurs in the surrounding areas of Hinglaj Fort and some part of Rampur plateau of the sanctuary. The first storey of tree species include *Acacia catechu*, *Anogeissus latifolia*, *Albizia odoratissima*, *Boswellia serrata*, *Bridelia retusa*, *Buchanania lanzan*, *Butea monosperma*, *Diospyros melanoxylon*, *Haldina cordifolia*, *Kydia calycina*,



Text-figure 1. Location Map of Gandhi Sagar Wildlife Sanctuary

Lannea coromandelica, *Lagerstroemia parviflora*, *Phyllanthus emblica*, *Madhuca longifolia* var. *latifolia*, *Mitragyna parviflora*, *Soymida febrifuga*, *Sterculia urens*, *Terminalia alata*, etc. The second storey of small trees is dominated by plants such as *Acacia leucophloea*, *Bauhinia racemosa*, *Careya arborea*, *Cassia fistula*, *Gardenia latifolia*, *Flacourtia indica*, *Holarrhena pubescens*, *Wrightia tinctoria*, *Ziziphus mauritiana*, *Z. xylopyrus*, etc. The third storey consists of shrubs and undershrubs like *Desmodium velutinum*, *Flueggea virosa*, *Grewia flavescens*, *Helicteres isora*, *Indigofera cassioides*, *Nyctanthes arbor-tristis*, *Petalidium barlerioides*, *Urena lobata*, *Waltheria indica*, *Ziziphus nummularia*, etc. The undergrowth is sparse and mainly constituted by *Achyranthes aspera*, *Ageratum conyzoides*, *Alysicarpus hamosus*, *A. vaginalis*, *Blainvillea acmella*, *Blepharis maderaspatensis*, *Canscora diffusa*, *Corchorus aestuans*, *Cyanthillium cinereum*, *Desmodium gangeticum*,

Dicliptera paniculata, *Emilia sonchifolia*, *Elephantopus scaber*, *Hybanthus enneaspermus*, *Indigofera cordifolia*, *I. tinctoria*, *Lagascea mollis*, *Lindernia crustacea*, *Melochia corchorifolia*, *Pentanema indicum*, *Pupalia lappacea*, *Tephrosia purpurea*, *Zornia gibbosa*, etc. and a large varieties of sedges and grasses like *Apluda mutica*, *Arundinella pumila*, *Capillipedium assimile*, *Cyperus* spp., *Dichanthium annulatum*, *Eragrostis* spp., *Fimbristylis* spp., *Heteropogon contortus*, *Iseilema laxum*, *Oplismenus burmannii*, *Themeda quadrivalvis*, etc. Climbers are quite common in these forests and consist of *Abrus precatorius*, *Ampelocissus latifolia*, *Bauhinia vahlii*, *Cajanus scarabaeoides*, *Cryptolepis dubia*, *Cocculus hirsutus*, *Hemidesmus indicus*, *Ichnocarpus frutescens*, *Dioscorea bulbifera*, *Pergularia daemia*, *Millettia extensa*, *Mucuna pruriens*, *Ventilago denticulata*, *Ziziphus oenoplia*, etc. *Dendrophthoe falcata* is the most common parasite in this type of forest.

2. Dry Deciduous Scrub Forests [5/DS1]: The common plants recorded in this type of forests are *Acacia catechu*, *A. leucophloea*, *Anogeissus pendula*, *Balanites aegyptiaca*, *Butea monosperma*, *Dichrostachys cinerea*, *Dolichandrone falcata*, *Diospyros melanoxylon*, *Flacourtia indica*, *Holarrhena pubescens*, *Holoptelea integrifolia*, *Lagerstroemia parviflora*, *Mimosa himalayana*, *Ziziphus mauritiana*, etc. Common shrubs are *Carissa opaca*, *Calotropis procera*, *Capparis sepriaria*, *Woodfordia fruticosa*, *Ziziphus nummularia*, etc. Some of the common species growing as undergrowth are *Acanthospermum hispidum*, *Apluda mutica*, *Alysicarpus monilifer*, *Blepharis integrifolia*, *Bothriochloa glabra*, *Crotalaria prostrata*, *Cyanthillium cinereum*, *Digitaria ciliaris*, *Heteropogon contortus*, *Indigofera cordifolia*, *I. linifolia*, *Senna tora*, *Sida cordata*, *Triumfetta pentandra*, *Tridax procumbens*, *Oplismenus burmannii*, *Zornia gibbosa*, etc.

3. *Anogeissus pendula* forests [5/E1]: This type of forest is found in gentler slopes and top of low hills localities like Bagchach and Dhaga. The forests remain

leafless from March to May with a thin undergrowth of shrubs and grasses. These forests are dominated by *Anogeissus pendula* and other common members which include *Bauhinia recemosa*, *Butea monosperma*, *Dichrostachys cinerea*, *Diospyros melanoxylon*, *Lagerstroemia parviflora* and *Lannea coromandelica*. Undergrowth is mostly herbaceous and is conspicuous during the rainy season. Some of the common species growing as undergrowth are *Alysicarpus monilifer*, *Apluda mutica*, *Bothriochloa glabra*, *Cajanus scarabaeoides*, *Crotalaria prostrata*, *Cyanthillium cinereum*, *Digitaria ciliaris*, *Heteropogon contortus*, *Indigofera cordifolia*, *I. linifolia*, *Oplismenus burmannii*, *Senna tora*, *Sida cordata*, *Triumfetta pentandra*, *Tridax procumbens*, *Zornia gibbosa*, etc.

Apart from the above types of forests, grasslands are also found around Gandhi Sagar Dam of the sanctuary. Some of the common species found in these places are *Apluda mutica*, *Bothriochloa pertusa*, *Brachiaria ramosa*, *Capillipedium assimile*, *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Dichanthium annulatum*, *D. foveolatum*, *Digitaria ciliaris*, *Dinebra retroflexa*, *Eragrostis* spp., *Heteropogon contortus*, *Iseilema laxum*, *Melanocenchris jacquemontii*, *Pennisetum pedicellatum*, *Sacciolepis indica*, *Schoenefeldia gracilis*, *Setaria pumila*, *Sporobolus diandrus*, *S. tenuissimus*, *Themeda quadrivalvis*, *Vetiveria zizanioides*, etc.

The state of Madhya Pradesh has been botanically surveyed since 19th century and important contributions

have been made on the flora of the state by a number of workers (Pandeya 1952; Tiwari 1954, 1955, 1957, 1963; Maheshwari 1958; Tiwari & Maheshwari 1963; Sebastine & Balakrishnan 1963; Joseph 1963; Tiwari & Maheshwari 1965; Rao & Sastry 1965; Joseph & Vajravelu 1967; Balapure 1967; Kaushik 1971; Oommachan 1977; Tiwari 1979; Verma & Chandra 1981; Sharma & Mamgain 1983; Mukherjee 1984; Roy 1984; Lal et al. 1986; Khanna et al. 1991; Roy et al. 1992; Verma et al. 1993; Oommachan & Shrivastava 1996; Samvatsar 1996; Mudgal et al. 1997; Singh et al. 2001; Khanna et al. 2001) but no effort has been made to work out the floristic account of the Sanctuary separately. It is also worth mentioning here that the Convention on Biological Diversity (CBD) and the Biological Diversity Bill 2002 of India have also laid emphasis on inventorisation of the protected and rich biodiversity areas, so that fair assessment can be made for sustainable utilization of bioresources. Keeping these points in view, an attempt has been made by the authors to work out the plant wealth of Gandhi Sagar Wildlife Sanctuary. In order to have a complete inventory of angiospermic plants of Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh extensive and intensive field tours were undertaken during 2013-2014. All the plant specimens were correctly identified and the results have been presented in the paper under enumeration.

ENUMERATION

All the species have been enumerated in alphabetical order with the correct binomial, vernacular name if any, family, habit and status of plants (Table 1).

Table 1. Angiospermic plants of Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh.

S. N.	Botanical Name/ Vernacular Name	Family	Habit	Status		
				Frequent	Common	Rare
1	<i>Abelmoschus ficulneus</i> (L.) Wight & Arn. ex Wight/ Jangli Bhindi	Malvaceae	Shrub	-	+	-
2	<i>Abelmoschus manihot</i> (L.) Medik. subsp. <i>tetraphyllus</i> (Roxb. ex Hornem.) Borss./ Jangli Bhindi	Malvaceae	Shrub	-	+	-
3	<i>Abrus precatorius</i> L./ Ghughchi	Fabaceae	Climber	-	-	+
4	<i>Abutilon indicum</i> (L.) Sw./ Kanghi	Malvaceae	Shrub	-	+	-
5	<i>Acacia catechu</i> (L. f.) Willd./ Khair	Mimosaceae	Tree	+	-	-
6	<i>Acacia farnesiana</i> (L.) Willd.	Mimosaceae	Tree	-	+	-
7	<i>Acacia leucophloea</i> (Roxb.) Willd./ Reujha	Mimosaceae	Tree	+	-	-
8	<i>Acacia nilotica</i> (L.) Willd. ex Delile subsp. <i>indica</i> (Benth.) Brenan/ Babool	Mimosaceae	Tree	-	+	-
9	<i>Acacia pennata</i> (L.) Willd./ Ail	Mimosaceae	Climber	-	+	-
10	<i>Acacia torta</i> (Roxb.) Craib/ Ail	Mimosaceae	Shrub	-	+	-

11	<i>Acalypha ciliata</i> Forssk.	Euphorbiaceae	Herb	-	+	-
12	<i>Acalypha indica</i> L./ Kuppi	Euphorbiaceae	Herb	-	+	-
13	<i>Acanthospermum hispidum</i> DC.	Asteraceae	Herb	-	+	-
14	<i>Achyranthes aspera</i> L./ Chirchira	Amaranthaceae	Herb	-	+	-
15	<i>Acmella paniculata</i> (Wall. ex DC.) R.K.Jansen/ Van-akarkara	Asteraceae	Herb	-	+	-
16	<i>Adenostemma lavenia</i> (L.) Kuntze	Asteraceae	Herb	-	+	-
17	<i>Aegle marmelos</i> (L.) Correa/ Bel	Rutaceae	Tree	-	+	-
18	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	Herb	-	+	-
19	<i>Ageratum conyzoides</i> L.	Asteraceae	Herb	+	-	-
20	<i>Ageratum houstonianum</i> Mill.	Asteraceae	Herb	-	+	-
21	<i>Ailanthus excelsa</i> Roxb./ Arlu	Simaroubaceae	Tree	-	+	-
22	<i>Alangium salvifolium</i> (L. f.) Wang/ Ankol	Cornaceae	Tree	-	+	-
23	<i>Albizia lebeck</i> (L.) Benth./ Kala Shirash	Mimosaceae	Tree	-	+	-
24	<i>Albizia odoratissima</i> (L. f.) Benth./ Chichva	Mimosaceae	Tree	-	+	-
25	<i>Albizia procera</i> (Roxb.) Benth./ Safed Shirash	Mimosaceae	Tree	-	+	-
26	<i>Altermanthera sessilis</i> (L.) R. Br. ex DC./ Gudsakari	Amaranthaceae	Herb	+	-	-
27	<i>Alysicarpus hamosus</i> Edgew.	Fabaceae	Herb	-	+	-
28	<i>Alysicarpus monilifer</i> (L.) DC.	Fabaceae	Herb	+	-	-
29	<i>Alysicarpus pubescens</i> Law.	Fabaceae	Herb	-	-	+
30	<i>Alysicarpus rugosus</i> (Willd.) DC.	Fabaceae	Herb	+	-	-
31	<i>Alysicarpus vaginalis</i> (L.) DC.	Fabaceae	Herb	+	-	-
32	<i>Ampelocissus latifolia</i> (Roxb.) Planch./ Amraula	Vitaceae	Climber	-	+	-
33	<i>Andrographis echinoides</i> (L.) Nees	Acanthaceae	Herb	+	-	-
34	<i>Annona squamosa</i> L./ Sitaphal	Annonaceae	Shrub	-	+	-
35	<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. ex Bedd./ Dhawa, Daawada	Combretaceae	Tree	-	+	-
36	<i>Anogeissus pendula</i> Edgew./ Kardhai	Combretaceae	Tree	+	-	-
37	<i>Apluda mutica</i> L./ Rathar	Poaceae	Herb	+	-	-
38	<i>Arundinella pumila</i> (Hochst. ex A. Rich.) Steud.	Poaceae	Herb	+	-	-
39	<i>Arundo donax</i> L.	Poaceae	Herb	-	+	-
40	<i>Asparagus racemosus</i> Willd./ Satawar	Asparagaceae	Climber	-	-	+
41	<i>Azadirachta indica</i> A. Juss./ Neem	Meliaceae	Tree	-	+	-
42	<i>Bacopa monnieri</i> (L.) Wettst./ Bramhi	Scrophulariaceae	Herb	-	-	+
43	<i>Balanites aegyptiaca</i> (L.) Delile/ Ingudi	Balanitaceae	Tree	-	+	-
44	<i>Baliospermum solanifolium</i> (Burm.) Suresh/ Danti	Euphorbiaceae	Herb	-	-	+
45	<i>Barleria cristata</i> L.	Acanthaceae	Herb	-	+	-
46	<i>Barleria prionitis</i> L./ Katsariya	Acanthaceae	Shrub	-	+	-
47	<i>Bauhinia racemosa</i> Lam./ Kathmahula	Caesalpiniaceae	Tree	-	+	-
48	<i>Bauhinia vahlii</i> Wight & Arn./ Mahul	Caesalpiniaceae	Climber	-	-	+
49	<i>Bidens biternata</i> (Lour.) Merr. & Sherff.	Asteraceae	Herb	-	+	-
50	<i>Bidens pilosa</i> L.	Asteraceae	Herb	-	+	-
51	<i>Biophytum sensitivum</i> (L.) DC./ Lajalu	Oxalidaceae	Herb	+	-	-
52	<i>Blainvillea acmella</i> (L.) Philipson	Asteraceae	Herb	-	+	-
53	<i>Blepharis maderaspatensis</i> (L.) Heyne ex Roth	Acanthaceae	Herb	+	-	-
54	<i>Blepharis integrifolia</i> (L. f.) E. Mey. ex Schinz	Acanthaceae	Herb	-	+	-
55	<i>Blumea axillaris</i> (Lam.) DC.	Asteraceae	Herb	-	+	-
56	<i>Blumea lacera</i> (Burm. f.) DC./ Kukraudha	Asteraceae	Herb	-	+	-
57	<i>Blumea lacera</i> (Burm. f.) DC. var. <i>blumei</i> DC.	Asteraceae	Herb	-	+	-
58	<i>Blumea membranacea</i> DC.	Asteraceae	Herb	-	+	-
59	<i>Boerhavia diffusa</i> L./ Punarva	Nyctaginaceae	Herb	-	+	-
60	<i>Bombax ceiba</i> L./ Semal	Bombacaceae	Tree	-	+	-
61	<i>Boswellia serrata</i> Roxb. ex Colebr./ Semal	Burseraceae	Tree	-	+	-
62	<i>Brachiaria reptans</i> (L.) C.A.Gardner & C.E.Hubb.	Poaceae	Herb	-	+	-
63	<i>Bridelia retusa</i> (L.) Spreng./ Kasai	Euphorbiaceae	Tree	-	+	-
64	<i>Buchanania lanzan</i> Spreng./ Achaar, Chaar	Anacardiaceae	Tree	-	+	-
65	<i>Butea monosperma</i> (Lam.) Taub./ Palash	Fabaceae	Tree	-	+	-
66	<i>Butea superba</i> Roxb./ Palash-bel	Fabaceae	Climber	-	-	+
67	<i>Caesalpinia decapetala</i> (Roth) Alston	Caesalpiniaceae	Climber	-	+	-
68	<i>Caesulia axillaris</i> Roxb.	Asteraceae	Herb	+	-	-
69	<i>Cajanus scarabaeoides</i> (L.) Thouars/ Vankulthi	Fabaceae	Climber	+	-	-
70	<i>Calotropis gigantea</i> (L.) R. Br./ Madar	Asclepiadaceae	Shrub	-	+	-
71	<i>Calotropis procera</i> (Aiton) R. Br./ Madar	Asclepiadaceae	Shrub	-	+	-
72	<i>Canscora decussata</i> (Roxb.) Roem. & Schult.	Gentianaceae	Herb	-	+	-
73	<i>Canscora diffusa</i> (Vahl) R.Br. ex Roem. & Schult.	Gentianaceae	Herb	-	+	-

74	<i>Capillipedium assimile</i> (Steud.) A. Camus	Poaceae	Herb	-	+	-
75	<i>Capparis sepiaria</i> L.	Capparaceae	Shrub	-	+	-
76	<i>Capparis zeylanica</i> L./ Karerua	Capparaceae	Climber	-	+	-
77	<i>Cardiospermum halicacabum</i> L./ Kanphuti	Sapindaceae	Climber	-	-	+
78	<i>Careya arborea</i> Roxb./ Kumbhi	Lecythidaceae	Tree	-	-	+
79	<i>Carissa opaca</i> Stapf ex Haines/ Van-karanda	Apocynaceae	Shrub	-	+	-
80	<i>Carissa spinarum</i> L./ Van-karanda	Apocynaceae	Shrub	-	+	-
81	<i>Carvia callosa</i> (Nees) Bremek.	Acanthaceae	Shrub	-	-	+
82	<i>Casearia tomentosa</i> Roxb./ Berri	Flacourtiaceae	Tree	-	+	-
83	<i>Casearia graveolens</i> Dalzell/ Berri	Flacourtiaceae	Tree	-	+	-
84	<i>Cassia fistula</i> L./ Amaltas, Kirwar	Caesalpinaceae	Tree	-	+	-
85	<i>Cassine albens</i> (Retz.) Kosterm./ Jamrasi	Celastraceae	Tree	-	-	+
86	<i>Catunaregam spinosa</i> (Thunb.) Tirveng./ Mainhar	Rubiaceae	Shrub	-	-	+
87	<i>Cayaponia laciniosa</i> (L.) C. Jeffrey	Cucurbitaceae	Herb	-	+	-
88	<i>Cayratia auriculata</i> (Wall.) Gamble/ Van-angoor	Vitaceae	Climber	-	+	-
89	<i>Celastrus paniculatus</i> Willd./ Malkangni, Kharkhund	Celastraceae	Climber	-	-	+
90	<i>Celosia argentea</i> L.	Amaranthaceae	Herb	+	-	-
91	<i>Ceriscoides turgida</i> (Roxb.) Tirveng./ Kharhar	Rubiaceae	Tree	-	-	+
92	<i>Chamaecrista absus</i> (L.) Irwin & Barneby.	Caesalpinaceae	Herb	-	+	-
93	<i>Chamaecrista mimosoides</i> (L.) Greene	Caesalpinaceae	Herb	-	+	-
94	<i>Chamaecrista pumila</i> (Lam.) V. Singh	Caesalpinaceae	Herb	-	+	-
95	<i>Chlorophytum arundinaceum</i> Baker/ Safed Musli	Liliaceae	Herb	-	-	+
96	<i>Chlorophytum tuberosum</i> (Roxb.) Baker/ Safed Musli	Liliaceae	Herb	-	-	+
97	<i>Cissampelos pareira</i> L./ Padin	Menispermaceae	Climber	-	+	-
98	<i>Cissus repanda</i> (Wight & Arn.) Vahl/ Dokar-bel	Vitaceae	Climber	-	+	-
99	<i>Cleome viscosa</i> L./ Hurhur	Capparaceae	Herb	-	+	-
100	<i>Clerodendrum infortunatum</i> L.	Verbenaceae	Shrub	-	-	+
101	<i>Clerodendrum phlomidis</i> L. f./ Arni	Verbenaceae	Shrub	-	+	-
102	<i>Clerodendrum philippinense</i> Elmer	Verbenaceae	Shrub	-	-	+
103	<i>Coccinia grandis</i> (L.) Voigt/ Kundru	Cucurbitaceae	Climber	-	+	-
104	<i>Cocculus hirsutus</i> (L.) Diels/ Jaljamni	Menispermaceae	Climber	-	+	-
105	<i>Cochlospermum religiosum</i> (L.) Alston/ Gabdi	Cochlospermaceae	Tree	-	-	+
106	<i>Colebrookea oppositifolia</i> Sm.	Lamiaceae	Shrub	-	+	-
107	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Climber	-	+	-
108	<i>Convolvulus prostratus</i> Forssk./ Shankpushpi	Convolvulaceae	Herb	-	+	-
109	<i>Corchorus aestuans</i> L.	Tiliaceae	Herb	-	+	-
110	<i>Corchorus capsularis</i> L.	Tiliaceae	Herb	-	+	-
111	<i>Corchorus depressus</i> (L.) Christensen	Tiliaceae	Herb	-	+	-
112	<i>Corchorus fascicularis</i> Lam.	Tiliaceae	Herb	-	+	-
113	<i>Corchorus tridens</i> L.	Tiliaceae	Herb	-	+	-
114	<i>Corchorus trilocularis</i> L.	Tiliaceae	Herb	-	+	-
115	<i>Cordia dichotoma</i> G. Forst./ Lasoda	Boraginaceae	Tree	-	+	-
116	<i>Cordia macleodii</i> (Griff.) Hook. f. & Thomson/ Dahiman	Boraginaceae	Tree	-	-	+
117	<i>Crinum defixum</i> Ker-Gawl.	Amaryllidaceae	Herb	-	+	-
118	<i>Crotalaria epunctata</i> Dalzell	Fabaceae	Herb	-	+	-
119	<i>Crotalaria hirsuta</i> Willd.	Fabaceae	Herb	-	+	-
120	<i>Crotalaria orixensis</i> Rottler	Fabaceae	Herb	-	+	-
121	<i>Crotalaria prostrata</i> Rottler ex Willd.	Fabaceae	Herb	-	+	-
122	<i>Crotalaria ramosissima</i> Roxb.	Fabaceae	Herb	-	+	-
123	<i>Crotalaria spectabilis</i> Roth	Fabaceae	Herb	-	+	-
124	<i>Croton bonplandianus</i> Baill.	Euphorbiaceae	Herb	-	+	-
125	<i>Cyanthillium cinereum</i> (L.) H. Rob./ Sahdevi	Asteraceae	Herb	+	-	-
126	<i>Cryptolepis dubia</i> (Burm.f.) M.R. Almeida/ Dudhi	Asclepiadaceae	Climber	-	+	-
127	<i>Cucumis melo</i> L./ Pehi	Cucurbitaceae	Herb	-	+	-
128	<i>Cullen corylifolium</i> (L.) Medik.	Fabaceae	Herb	-	-	+
129	<i>Curculigo orchoides</i> Gaertn./ Kali Musli	Hypoxidaceae	Herb	-	+	-
130	<i>Curcuma amada</i> Roxb./ Ama-haldi	Zingiberaceae	Herb	-	-	+
131	<i>Curcuma aromatica</i> Salisb./ Van-haldi	Zingiberaceae	Herb	-	-	+
132	<i>Cuscuta reflexa</i> Roxb./ Amar-bel	Convolvulaceae	Parasite	-	+	-
133	<i>Cyathocline purpurea</i> (Buch.-Ham. ex D. Don) Kuntze	Asteraceae	Herb	-	+	-
134	<i>Cymbopogon martinii</i> (Roxb.) Wats.	Poaceae	Herb	-	-	+
135	<i>Cynodon dactylon</i> (L.) Pers./ Doob	Poaceae	Herb	+	-	-
136	<i>Cynoglossum lanceolatum</i> Forssk.	Boraginaceae	Herb	-	+	-

137	<i>Cynoglossum zeylanicum</i> Vahl ex Hornem.	Boraginaceae	Herb	-	-	+
138	<i>Cyperus bulbosus</i> Vahl	Cyperaceae	Herb	-	+	-
139	<i>Cyperus difformis</i> L.	Cyperaceae	Herb	-	+	-
140	<i>Cyperus esculentus</i> L.	Cyperaceae	Herb	-	+	-
141	<i>Cyperus michelianus</i> (L.) Delile	Cyperaceae	Herb	-	+	-
142	<i>Cyperus rotundus</i> L. subsp. <i>rotundus</i> /Nagar-motha	Cyperaceae	Herb	-	+	-
143	<i>Cyphostemma auriculatum</i> (Roxb.) P. Singh & B.V. Shetty	Vitaceae	Climber	-	+	-
144	<i>Dactyloctenium aegyptium</i> (L.) P. Beauv.	Poaceae	Herb	+	-	-
145	<i>Dalbergia latifolia</i> Roxb./ Sheesam	Fabaceae	Tree	-	-	+
146	<i>Dendrocalamus strictus</i> (Roxb.) Nees/ Baans	Poaceae	Tree	-	+	-
147	<i>Dendrophthoe falcata</i> (L. f.) Etting./ Banda	Loranthaceae	Parasite	-	+	-
148	<i>Desmodium dichotomum</i> (Willd.) DC.	Fabaceae	Herb	-	+	-
149	<i>Desmodium gangeticum</i> (L.) DC./ Salparni	Fabaceae	Herb	-	+	-
150	<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	Herb	+	-	-
151	<i>Desmodium velutinum</i> (Willd.) DC.	Fabaceae	Shrub	-	+	-
152	<i>Desmostachya bipinnata</i> (L.) Stapf/ Kusa	Poaceae	Herb	-	+	-
153	<i>Dichanthium annulatum</i> (Forssk.) Stapf	Poaceae	Herb	+	-	-
154	<i>Dichanthium aristatum</i> (Poir.) Hubb.	Poaceae	Herb	+	-	-
155	<i>Dichanthium caricosum</i> (L.) A. Camus	Poaceae	Herb	+	-	-
156	<i>Dichanthium foveolatum</i> (Delile) Roberty	Poaceae	Herb	-	+	-
157	<i>Dichrostachys cinerea</i> (L.) Wight & Arn./ Khejari	Mimosaceae	Tree	-	+	-
158	<i>Dicliptera paniculata</i> (Forssk.) I.Darbysh.	Acanthaceae	Herb	-	+	-
159	<i>Dicliptera verticillata</i> (Forssk.) C. Chr.	Acanthaceae	Herb	-	+	-
160	<i>Digera muricata</i> (L.) Mart.	Amaranthaceae	Herb	+	-	-
161	<i>Digitaria abludens</i> (Roem. & Schult.) Veldk.	Poaceae	Herb	-	+	-
162	<i>Digitaria bicornis</i> (Lam.) Roem. & Schult. ex Loud	Poaceae	Herb	-	+	-
163	<i>Digitaria ciliaris</i> (Retz.) Koeler	Poaceae	Herb	+	-	-
164	<i>Dimeria ornithopoda</i> Trin.	Poaceae	Herb	-	+	-
165	<i>Dinebra retroflexa</i> (Vahl) Paz.	Poaceae	Herb	-	+	-
166	<i>Dioscorea bulbifera</i> L./ Barahi-kand	Dioscoreaceae	Climber	-	+	-
167	<i>Dioscorea hispida</i> Dennst./ Baichadi	Dioscoreaceae	Climber	-	-	+
168	<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	Climber	-	+	-
169	<i>Dioscorea pubera</i> Blume/ Kesariya-kand	Dioscoreaceae	Climber	-	+	-
170	<i>Diospyros cordifolia</i> Roxb.	Ebenaceae	Tree	-	+	-
171	<i>Diospyros melanoxyton</i> Roxb./ Tendu	Ebenaceae	Tree	-	+	-
172	<i>Diospyros montana</i> Roxb./ Patwan	Ebenaceae	Tree	-	-	+
173	<i>Diplocyclos palmatus</i> (L.) Jeffery/ Shivlingi	Cucurbitaceae	Climber	-	+	-
174	<i>Dolichandrone falcata</i> (Wall. ex DC.) Seem./ Tamoli	Bignoniaceae	Tree	-	+	-
175	<i>Drimia indica</i> (Roxb.) Jessop/ Van-payaj	Liliaceae	Herb	-	+	-
176	<i>Echinops echinatus</i> Roxb./ Utkatara	Asteraceae	Herb	-	+	-
177	<i>Eclipta prostrata</i> (L.) L./ Ghamira	Asteraceae	Herb	-	+	-
178	<i>Ehretia laevis</i> Roxb./ Chamrol	Boraginaceae	Tree	-	+	-
179	<i>Elephantopus scaber</i> L.	Asteraceae	Herb	+	-	-
180	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Herb	-	+	-
181	<i>Elytraria acaulis</i> (L. f.) Lindau	Acanthaceae	Herb	+	-	-
182	<i>Embelia basaal</i> (Roem. & Schult.) A. DC./ Baibidang	Myrsinaceae	Shrub	-	-	+
183	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	Herb	-	+	-
184	<i>Eragrostiella bifaria</i> (Vahl) Bor	Poaceae	Herb	-	+	-
185	<i>Eragrostiella brachyphylla</i> (Stapf) Bor	Poaceae	Herb	-	+	-
186	<i>Eragrostis ciliaris</i> (L.) R. Br.	Poaceae	Herb	-	+	-
187	<i>Eragrostis ciliata</i> (Roxb.) Nees	Poaceae	Herb	-	+	-
188	<i>Eragrostis coarctata</i> Stapf	Poaceae	Herb	-	+	-
189	<i>Eragrostis diarrhena</i> (Schult.) Steud.	Poaceae	Herb	+	-	-
190	<i>Eragrostis gangetica</i> (Roxb.) Steud.	Poaceae	Herb	-	+	-
191	<i>Eragrostis japonica</i> (Thunb.) Trin.	Poaceae	Herb	-	+	-
192	<i>Eranthemum purpurascens</i> Wight ex Nees	Acanthaceae	Herb	-	+	-
193	<i>Eranthemum nervosum</i> (Vahl) R. Br.	Acanthaceae	Herb	-	-	+
194	<i>Eriocaulon quinquangulare</i> L.	Eriocaulaceae	Herb	-	+	-
195	<i>Eriolaena candollei</i> Wall./ Mothi	Sterculiaceae	Shrub	-	+	-
196	<i>Erythrina suberosa</i> Roxb./ Hadua, Gadha-palash	Fabaceae	Tree	-	-	+
197	<i>Euphorbia caducifolia</i> Haines/ Sehud	Euphorbiaceae	Tree	-	+	-
198	<i>Euphorbia chamaesyce</i> L./ Dudhi	Euphorbiaceae	Herb	-	+	-
199	<i>Euphorbia dracunculoides</i> Lam.	Euphorbiaceae	Herb	-	+	-

200	<i>Euphorbia heterophylla</i> L.	Euphorbiaceae	Herb	-	+	-
201	<i>Euphorbia hirta</i> L./ Dudhi	Euphorbiaceae	Herb	+	-	-
202	<i>Euphorbia hypericifolia</i> L.	Euphorbiaceae	Herb	-	+	-
203	<i>Euphorbia nerifolia</i> L./ Sehud	Euphorbiaceae	Shrub	-	+	-
204	<i>Euphorbia prostrata</i> Ait.	Euphorbiaceae	Herb	-	+	-
205	<i>Euphorbia thymifolia</i> L.	Euphorbiaceae	Herb	-	+	-
206	<i>Evolvulus alsinoides</i> (L.) L./ Neeli Shankhpushpi	Convolvulaceae	Herb	-	+	-
207	<i>Evolvulus nummularius</i> (L.) L.	Convolvulaceae	Herb	+	-	-
208	<i>Ficus mollis</i> Vahl	Moraceae	Tree	-	+	-
209	<i>Ficus benghalensis</i> L./ Bargad	Moraceae	Tree	-	+	-
210	<i>Ficus hispida</i> L. f./ Kathumar	Moraceae	Tree	-	+	-
211	<i>Ficus microcarpa</i> L. f.	Moraceae	Tree	-	-	+
212	<i>Ficus racemosa</i> L./ Gular	Moraceae	Tree	-	+	-
213	<i>Ficus religiosa</i> L./ Peepal	Moraceae	Tree	-	+	-
214	<i>Ficus virens</i> Dryander/ Pakar	Moraceae	Tree	-	+	-
215	<i>Fimbristylis bisumbellata</i> (Forssk.) Bubani	Cyperaceae	Herb	+	-	-
216	<i>Fimbristylis dichotoma</i> (L.) Vahl	Cyperaceae	Herb	+	-	-
217	<i>Flacourtia indica</i> (Burm. f.) Merr./ Kakai	Flacourtiaceae	Tree	+	-	-
218	<i>Flemingia nana</i> Roxb./ Maankand	Fabaceae	Shrub	-	+	-
219	<i>Flemingia strobilifera</i> (L.) R. Br.	Fabaceae	Shrub	-	+	-
220	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	Euphorbiaceae	Shrub	-	+	-
221	<i>Gamochaeta purpurea</i> (L.) Cabrera	Asteraceae	Herb	-	+	-
222	<i>Gardenia latifolia</i> Ait./ Papda	Rubiaceae	Tree	-	+	-
223	<i>Garuga pinnata</i> Roxb./ Kekar	Burseraceae	Tree	-	-	+
224	<i>Gloriosa superba</i> L./ Kalihari	Liliaceae	Climber	-	-	+
225	<i>Gmelina arborea</i> Roxb./ Khamer	Verbenaceae	Tree	-	-	+
226	<i>Gnaphalium polycaulon</i> Pers.	Asteraceae	Herb	-	+	-
227	<i>Gnomophalium pulvinatum</i> (Delile) Greuter	Asteraceae	Herb	-	+	-
228	<i>Gomphrena celosioides</i> Mart.	Asteraceae	Herb	-	+	-
229	<i>Grangea maderaspatana</i> (L.) Poir.	Asteraceae	Herb	-	+	-
230	<i>Grewia flavescens</i> Juss./ Sirali	Tiliaceae	Shrub	-	+	-
231	<i>Grewia hirsuta</i> Vahl/ Gudsakari	Tiliaceae	Shrub	-	+	-
232	<i>Grewia rothii</i> DC./ Gangeran	Tiliaceae	Shrub	-	+	-
233	<i>Grewia tiliifolia</i> Vahl/ Dhamin, Dhankat	Tiliaceae	Tree	-	-	+
234	<i>Gymnema sylvestre</i> (Retz.) R. Br. ex Schult./ Gudmar	Asclepiadaceae	Climber	-	-	+
235	<i>Haldina cordifolia</i> (Roxb.) Ridsd./ Haldu	Rubiaceae	Tree	-	+	-
236	<i>Helicteres isora</i> L./ Madorphali	Sterculiaceae	Shrub	+	-	-
237	<i>Heliotropium strigosum</i> Willd. subsp. <i>strigosum</i>	Boraginaceae	Herb	-	+	-
238	<i>Heliotropium zeylanicum</i> (Burm. f.) Lam.	Boraginaceae	Herb	-	+	-
239	<i>Hemidesmus indicus</i> (L.) R. Br./ Dudhi	Asclepiadaceae	Climber	-	+	-
240	<i>Heteropogon contortus</i> (L.) P.Beauv. ex Roem. & Schult.	Poaceae	Herb	+	-	-
241	<i>Hibiscus lobatus</i> (Murray) Kuntze	Malvaceae	Herb	-	+	-
242	<i>Hibiscus micranthus</i> L. f.	Malvaceae	Shrub	-	+	-
243	<i>Hibiscus panduriformis</i> Burm. f.	Malvaceae	Herb	-	+	-
244	<i>Hiptage benghalensis</i> (L.) Kurz	Malpighiaceae	Climber	-	+	-
245	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. ex G. Don/ Kurraya, Kurchi	Apocynaceae	Tree	-	+	-
246	<i>Holoptelea integrifolia</i> (Roxb.) Planch./ Chilbil	Ulmaceae	Tree	-	+	-
247	<i>Holostemma ada-kodien</i> Schult.	Asclepiadaceae	Climber	-	+	-
248	<i>Homonoia riparia</i> Lour.	Euphorbiaceae	Shrub	-	+	-
249	<i>Hoppea dichotoma</i> Heyne ex Willd.	Gentianaceae	Herb	-	+	-
250	<i>Hybanthus enneaspermus</i> (L.) F.v. Muell.	Violaceae	Herb	-	+	-
251	<i>Hydrilla verticillata</i> (L. f.) Royle	Hydrocharitaceae	Herb	+	-	-
252	<i>Hygrophila auriculata</i> (Schumach.) Heine/ Taalmakahana	Acanthaceae	Herb	-	+	-
253	<i>Hygrophila polysperma</i> (Roxb.) T. Anderson	Acanthaceae	Herb	+	-	-
254	<i>Hymenodictyon orixense</i> (Roxb.) Mabberley/ Bhudkut	Rubiaceae	Tree	-	-	+
255	<i>Hyptis suaveolens</i> (L.) Poit./ Janglee-tulsi	Lamiaceae	Herb	+	-	-
256	<i>Ichnocarpus frutescens</i> (L.) R. Br./ Dhimar-bel	Apocynaceae	Climber	+	-	-
257	<i>Impatiens balsamina</i> L.	Balsaminaceae	Herb	-	+	-
258	<i>Indigofera astragalina</i> DC.	Fabaceae	Herb	-	+	-
259	<i>Indigofera cassioides</i> Rottler ex DC./ Girgoli	Fabaceae	Herb	-	+	-
260	<i>Indigofera colutea</i> (Burm.f.) Merrill	Fabaceae	Herb	-	-	+
261	<i>Indigofera cordifolia</i> Heyne ex Roth	Fabaceae	Herb	-	+	-
262	<i>Indigofera linifolia</i> (L. f.) Retz.	Fabaceae	Herb	+	-	-

263	<i>Indigofera linnaei</i> Ali	Fabaceae	Herb	+	-	-
264	<i>Indigofera nummularifolia</i> (L.) Liv. ex Alston	Fabaceae	Herb	-	+	-
265	<i>Indigofera tinctoria</i> L./ Neel	Fabaceae	Shrub	-	+	-
266	<i>Indigofera trifoliata</i> L.	Fabaceae	Shrub	-	+	-
267	<i>Indigofera trita</i> L. f.	Fabaceae	Herb	-	+	-
268	<i>Ipomoea aquatica</i> Forssk./ Karemua	Convolvulaceae	Herb	-	+	-
269	<i>Ipomoea dichroa</i> (Roem. & Schult.) Choisy	Convolvulaceae	Herb	-	-	+
270	<i>Ipomoea eriocarpa</i> R. Br.	Convolvulaceae	Herb	-	+	-
271	<i>Ipomoea hederifolia</i> L.	Convolvulaceae	Climber	-	+	-
272	<i>Ipomoea nil</i> (L.) Roth/ Kala-dana	Convolvulaceae	Climber	-	+	-
273	<i>Ipomoea obscura</i> (L.) Ker-Gawl.	Convolvulaceae	Climber	-	+	-
274	<i>Ipomoea pes-tigridis</i> L. var. <i>capitellata</i> C.B. Clarke	Convolvulaceae	Climber	-	+	-
275	<i>Ipomoea pes-tigridis</i> L. var. <i>pes-tigridis</i>	Convolvulaceae	Climber	-	+	-
276	<i>Ipomoea sinensis</i> (Desr.) Choisy	Convolvulaceae	Herb	-	+	-
277	<i>Ipomoea turbinata</i> Lag./ Khotlaiya	Convolvulaceae	Climber	-	-	+
278	<i>Ischaemum indicum</i> (Houtt.) Merr.	Poaceae	Herb	-	+	-
279	<i>Ischaemum rugosum</i> Salisb.	Poaceae	Herb	-	-	+
280	<i>Iseilema laxum</i> Hack.	Poaceae	Herb	+	-	-
281	<i>Iseilema prostratum</i> (L.) Anderss.	Poaceae	Herb	-	+	-
282	<i>Ixora pavetta</i> Andrews/ Khujjha	Rubiaceae	Shrub	-	+	-
283	<i>Juncellus pygmaeus</i> (Rottb.) C.B. Clarke	Cyperaceae	Herb	-	+	-
284	<i>Juncus leschenaultii</i> Gay	Juncaceae	Herb	-	+	-
285	<i>Justicia diffusa</i> Willd. var. <i>diffusa</i>	Acanthaceae	Herb	-	+	-
286	<i>Justicia latispica</i> Gamble	Acanthaceae	Herb	-	+	-
287	<i>Justicia neesii</i> Raman.	Acanthaceae	Herb	-	+	-
288	<i>Justicia prostrata</i> (C.B. Clarke) Gamble	Acanthaceae	Herb	-	+	-
289	<i>Justicia quinqueangularis</i> K.D. Koenig ex Roxb.	Acanthaceae	Herb	-	+	-
290	<i>Kickxia ramosissima</i> (Wall.) Janchem	Scrophulariaceae	Herb	-	+	-
291	<i>Kydia calycina</i> Roxb./ Barga, Kapsia	Malvaceae	Tree	-	+	-
292	<i>Kyllinga brevifolia</i> Rottb.	Cyperaceae	Herb	-	+	-
293	<i>Kyllinga nemoralis</i> (J.R. Forst. & G. Forst.) Dandy ex Hutch. & Dalziel	Cyperaceae	Herb	-	+	-
294	<i>Lagascea mollis</i> Cav.	Asteraceae	Herb	-	+	-
295	<i>Lagerstroemia parviflora</i> Roxb./ Sendha	Lythraceae	Tree	+	-	-
296	<i>Laggera crispa</i> (Vahl) Hepper & Wood	Asteraceae	Herb	-	-	+
297	<i>Lannea coromandelica</i> (Houtt.) Merr./ Gurja, Jingan	Anacardiaceae	Tree	-	+	-
298	<i>Lantana camara</i> L.	Verbenaceae	Shrub	+	-	-
299	<i>Laphangium affine</i> (D. Don) Tzvelev.	Asteraceae	Herb	-	+	-
300	<i>Launaea procumbens</i> (Roxb.) Ramayya & Rajagopal	Asteraceae	Herb	-	+	-
301	<i>Leea asiatica</i> (L.) Rids./ Hansiadaphar	Leeaceae	Herb	-	-	+
302	<i>Leonotis nepetifolia</i> (L.) R. Br.	Lamiaceae	Herb	-	+	-
303	<i>Lepidagathis cristata</i> Willd./ Sherbaitthika	Acanthaceae	Herb	-	+	-
304	<i>Lepidagathis trinervis</i> Wall. ex Nees	Acanthaceae	Herb	-	+	-
305	<i>Leptadenia reticulata</i> (Retz.) Wight & Arn.	Asclepiadaceae	Climber	-	+	-
306	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Herb	-	+	-
307	<i>Leucas cephalotes</i> (Koenig ex Roth) Spreng.	Lamiaceae	Herb	-	+	-
308	<i>Leucas decemdentata</i> (Willd.) R.Br. ex Sm.	Lamiaceae	Herb	-	+	-
309	<i>Limnophila aromatica</i> (Lam.) Merr.	Scrophulariaceae	Herb	-	+	-
310	<i>Limnophila indica</i> (L.) Druce	Scrophulariaceae	Herb	-	+	-
311	<i>Limonia acidissima</i> L./ Kaitha	Rutaceae	Tree	-	+	-
312	<i>Lindenbergia indica</i> (L.) Vatke	Scrophulariaceae	Herb	-	+	-
313	<i>Lindernia anagallis</i> (Burm. f.) Pennell	Scrophulariaceae	Herb	-	+	-
314	<i>Lindernia antipoda</i> (L.) Alston	Scrophulariaceae	Herb	-	+	-
315	<i>Lindernia ciliata</i> (Colsm.) Pennell	Scrophulariaceae	Herb	-	+	-
316	<i>Lindernia crustacea</i> (L.) F.v. Muell.	Scrophulariaceae	Herb	+	-	-
317	<i>Litsea glutinosa</i> (Lour.) Robinson/ Meda	Lauraceae	Tree	-	-	+
318	<i>Lobelia alsinoides</i> Lam.	Campanulaceae	Herb	-	+	-
319	<i>Lobelia heyneana</i> Roem. & Schult.	Campanulaceae	Herb	-	+	-
320	<i>Ludwigia adscendens</i> (L.) Hara	Onagraceae	Herb	-	+	-
321	<i>Ludwigia hyssopifolia</i> (G. Don) Presl	Onagraceae	Herb	-	+	-
322	<i>Ludwigia octovalvis</i> (Jacq.) Raven	Onagraceae	Herb	-	+	-
323	<i>Ludwigia perennis</i> L.	Onagraceae	Herb	-	+	-
324	<i>Madhuca longifolia</i> (J. Koenig) Macbr. var. <i>latifolia</i> (Roxb.) Chevalier/ Mahua	Sapotaceae	Tree	-	+	-

325	<i>Mallotus philippensis</i> (Lam.) Muell. Arg./ Sinduri	Euphorbiaceae	Tree	-	+	-
326	<i>Malvastrum coromandelianum</i> (L.) Garcke	Malvaceae	Herb	+	-	-
327	<i>Manilkara hexandra</i> (Roxb.) Dubard/ Khimi	Sapotaceae	Tree	-	+	-
328	<i>Mariscus concinnus</i> Scharder ex Nees	Cyperaceae	Herb	-	+	-
329	<i>Mariscus squarrosus</i> (L.) C.B. Clarke	Cyperaceae	Herb	-	+	-
330	<i>Marsdenia tenacissima</i> (Roxb.) Moon/ Chinahur	Asclepiadaceae	Climber	-	-	+
331	<i>Martynia annua</i> L./ Bagnakha	Pedaliaceae	Herb	-	+	-
332	<i>Maytenus emarginata</i> (Willd.) Ding-Hou/ Baikai	Celastraceae	Shrub	-	-	+
333	<i>Maytenus senegalensis</i> (Lam.) Exell.	Celastraceae	Tree	-	-	+
334	<i>Mazus pumilus</i> (Burm. f.) Steenis	Scrophulariaceae	Herb	-	+	-
335	<i>Mecardonia procumbens</i> (Mill.) Small	Scrophulariaceae	Herb	-	+	-
336	<i>Melanocentris jacquemontii</i> Jaub. & Spach	Poaceae	Herb	+	-	-
337	<i>Melochia corchorifolia</i> L.	Sterculiaceae	Herb	-	+	-
338	<i>Merremia aegyptia</i> (L.) Urb.	Convolvulaceae	Climber	-	+	-
339	<i>Merremia emarginata</i> (Burm. f.) Hallier f.	Convolvulaceae	Herb	+	-	-
340	<i>Merremia tridentata</i> (L.) Hallier f.	Convolvulaceae	Herb	-	+	-
341	<i>Miliusa tomentosa</i> (Roxb.) Sinclair/ Kari	Annonaceae	Tree	-	+	-
342	<i>Milletia extensa</i> (Benth.) Baker/ Guhilari	Fabaceae	Climber	-	+	-
343	<i>Mimosa himalayana</i> Gamble/ Ail	Mimosaceae	Tree	-	+	-
344	<i>Mitragyna parvifolia</i> (Roxb.) Korth./ Kaima	Rubiaceae	Tree	-	+	-
345	<i>Mitreola petiolata</i> (J.F. Gmelin) Torr. & A.Gray	Loganiaceae	Herb	-	-	+
346	<i>Mollugo pentaphylla</i> L.	Molluginaceae	Herb	-	+	-
347	<i>Momordica dioica</i> Roxb. ex Willd./ Padora	Cucurbitaceae	Climber	-	-	+
348	<i>Moringa concanensis</i> Nimmo	Moringaceae	Tree	-	-	+
349	<i>Mukia maderaspatana</i> (L.) Roem.	Cucurbitaceae	Herb	-	+	-
350	<i>Mucuna pruriens</i> (L.) DC./ Van-kewach	Fabaceae	Climber	-	-	+
351	<i>Murdannia nudiflora</i> (L.) Brenan	Commelinaceae	Herb	+	-	-
352	<i>Murdannia spirata</i> (L.) Brückner	Commelinaceae	Herb	-	+	-
353	<i>Murdannia vaginata</i> (L.) Brückner	Commelinaceae	Herb	-	+	-
354	<i>Murraya paniculata</i> (L.) Jacq./ Hathil	Rutaceae	Shrub	-	-	+
355	<i>Naringi crenulata</i> (Roxb.) Nicolson/ Billi, Bilsena	Rutaceae	Tree	-	-	+
356	<i>Nelsonia canescens</i> (Lam.) Spreng./ Bijnauri	Acanthaceae	Herb	-	+	-
357	<i>Nelumbo nucifera</i> Gaertn.	Nymphaeaceae	Herb	-	+	-
358	<i>Nothosaerva brachiata</i> (L.) Wight	Amaranthaceae	Herb	-	+	-
359	<i>Nyctanthes arbor-tristis</i> L./ Khirsali	Oleaceae	Shrub	-	+	-
360	<i>Nymphaea nouchali</i> Burm. f.	Nymphaeaceae	Herb	-	+	-
361	<i>Nymphaea pubescens</i> Willd.	Nymphaeaceae	Herb	-	+	-
362	<i>Nymphoides hydrophylla</i> (Lour.) Kuntze	Menyanthaceae	Herb	-	+	-
363	<i>Ocimum canum</i> Sims/ Mahri	Lamiaceae	Herb	-	+	-
364	<i>Oldenlandia affinis</i> (Roem. & Schult.) DC.	Rubiaceae	Herb	-	+	-
365	<i>Oldenlandia corymbosa</i> L. var. <i>corymbosa</i>	Rubiaceae	Herb	-	+	-
366	<i>Oldenlandia corymbosa</i> var. <i>linearis</i> (DC.) Verdc.	Rubiaceae	Herb	-	+	-
367	<i>Oldenlandia ovatifolia</i> (Cav.) DC.	Rubiaceae	Herb	-	+	-
368	<i>Oldenlandia pumila</i> (L.f.) DC.	Rubiaceae	Herb	-	+	-
369	<i>Operculina turpethum</i> (L.) Manso/ Nisoth	Convolvulaceae	Climber	-	-	+
370	<i>Ophiuros exaltatus</i> (L.) Kuntze	Poaceae	Herb	-	+	-
371	<i>Oplismenus burmannii</i> (Retz.) P. Beauv.	Poaceae	Herb	+	-	-
372	<i>Oplismenus compositus</i> (L.) P. Beauv.	Poaceae	Herb	-	+	-
373	<i>Oroxylum indicum</i> (L.) Venten./ Sonpatha	Bignoniaceae	Tree	-	-	+
374	<i>Orthosiphon pallidus</i> Royle ex Benth.	Lamiaceae	Herb	-	+	-
375	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr./ Tinsa	Fabaceae	Tree	-	+	-
376	<i>Oxalis corniculata</i> L.	Oxalidaceae	Herb	+	-	-
377	<i>Paspalidium flavidum</i> (Retz.) A. Camus	Poaceae	Herb	-	+	-
378	<i>Paspalum vaginatum</i> Sw.	Poaceae	Herb	-	+	-
379	<i>Pavonia odorata</i> Willd.	Malvaceae	Herb	-	+	-
380	<i>Pavonia zeylanica</i> (L.) Cav.	Malvaceae	Herb	-	+	-
381	<i>Pennisetum pedicellatum</i> Trin.	Poaceae	Herb	-	+	-
382	<i>Pentanema indicum</i> (L.) Ling	Asteraceae	Herb	-	+	-
383	<i>Pergularia daemia</i> (Forssk.) Chiov./ Dudhi-bel, Utran	Asclepiadaceae	Climber	-	+	-
384	<i>Persicaria barbata</i> (L.) H. Hara	Polygonaceae	Herb	-	+	-
385	<i>Persicaria glabra</i> (Willd.) M. Gómez	Polygonaceae	Herb	-	+	-
386	<i>Petalidium barlerioides</i> (Roth) Nees	Acanthaceae	Shrub	-	+	-
387	<i>Phoenix sylvestris</i> (L.) Roxb./ Chind, Khajoor	Areaceae	Tree	-	+	-

388	<i>Phragmites vallatoria</i> (Pluk. ex L.) Veldkamp	Poaceae	Herb	-	+	-
389	<i>Phyla nodiflora</i> (L.) E. Greene	Verbenaceae	Herb	-	+	-
390	<i>Phyllanthus amarus</i> Schumach. & Thonn./ Bhui-amlā	Euphorbiaceae	Herb	-	+	-
391	<i>Phyllanthus emblica</i> L./ Amlā	Euphorbiaceae	Tree	-	-	+
392	<i>Phyllanthus maderaspatensis</i> L.	Euphorbiaceae	Herb	-	+	-
393	<i>Phyllanthus reticulatus</i> Poir.	Euphorbiaceae	Shrub	-	+	-
394	<i>Phyllanthus urinaria</i> L./ Bhui-amlā	Euphorbiaceae	Herb	-	+	-
395	<i>Phyllanthus virgatus</i> G. Forst./ Bhui-amlā	Euphorbiaceae	Herb	-	+	-
396	<i>Phyllodium pulchellum</i> (L.) Desv.	Fabaceae	Shrub	-	+	-
397	<i>Physalis minima</i> L./ Chirpota	Solanaceae	Herb	-	+	-
398	<i>Pithecellobium dulce</i> (Roxb.) Benth./ Jangal-jalebee	Mimosaceae	Tree	-	+	-
399	<i>Plumbago zeylanica</i> L./ Chitrak	Plumbaginaceae	Shrub	-	-	+
400	<i>Polycarpon prostratum</i> (Forssk.) Asch. & Schweinf.	Caryophyllaceae	Herb	-	+	-
401	<i>Polygala arvensis</i> Willd.	Polygalaceae	Herb	-	+	-
402	<i>Polygala erioptera</i> DC.	Polygalaceae	Herb	-	+	-
403	<i>Polygonum plebeium</i> R. Br.	Polygonaceae	Herb	-	+	-
404	<i>Polypogon monspeliensis</i> (L.) Desf.	Poaceae	Herb	-	+	-
405	<i>Pongamia pinnata</i> (L.) Pierre/ Karanj	Fabaceae	Tree	-	+	-
406	<i>Porana paniculata</i> Roxb.	Convolvulaceae	Climber	-	+	-
407	<i>Potamogeton crispus</i> L.	Potamogetonaceae	Herb	+	-	-
408	<i>Potamogeton nodosus</i> Poir.	Potamogetonaceae	Herb	-	+	-
409	<i>Potamogeton pectinatus</i> L.	Potamogetonaceae	Herb	-	+	-
410	<i>Pterocarpus marsupium</i> Roxb./ Boeja	Fabaceae	Tree	-	-	+
411	<i>Pueraria tuberosa</i> (Roxb. ex Willd.) DC./ Patal-kumhda	Fabaceae	Climber	-	-	+
412	<i>Pulicaria angustifolia</i> DC.	Asteraceae	Herb	-	+	-
413	<i>Pupalia lappacea</i> (L.) Juss.	Amaranthaceae	Herb	+	-	-
414	<i>Pycreus diaphanus</i> (Schrad. ex Roem. & Schult.) S.S. Hooper & T. Koyama	Cyperaceae	Herb	-	+	-
415	<i>Pycreus flavidus</i> (Retz.) Koyama	Cyperaceae	Herb	-	+	-
416	<i>Rhynchosia capitata</i> DC.	Fabaceae	Herb	-	-	+
417	<i>Rhynchosia minima</i> (L.) DC.	Fabaceae	Herb	-	+	-
418	<i>Rivea hypocrateriformis</i> (Desr.) Choisy	Convolvulaceae	Climber	-	+	-
419	<i>Rorippa indica</i> (L.) Hiern	Brassicaceae	Herb	-	+	-
420	<i>Rotala indica</i> (Willd.) Koehne	Lythraceae	Herb	-	+	-
421	<i>Rotala rotundifolia</i> (Roxb.) Koehne	Lythraceae	Herb	-	+	-
422	<i>Rothea serrata</i> (L.) Steane & Mabb./ Bharangi	Lamiaceae	Shrub	-	-	+
423	<i>Ruellia prostrata</i> Poir.	Acanthaceae	Herb	-	+	-
424	<i>Rungia pectinata</i> (L.) Nees	Acanthaceae	Herb	+	-	-
425	<i>Saccharum spontaneum</i> L./ Kaas	Poaceae	Herb	-	+	-
426	<i>Sacciolepis indica</i> (L.) Chase	Poaceae	Herb	-	+	-
427	<i>Sacciolepis interrupta</i> (Willd.) Stapf	Poaceae	Herb	-	+	-
428	<i>Schoenefeldia gracilis</i> Kunth	Poaceae	Herb	-	-	+
429	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Herb	-	+	-
430	<i>Semecarpus anacardium</i> L. f./ Bhilama	Anacardiaceae	Tree	-	-	+
431	<i>Senna obtusifolia</i> (L.) Irwin & Barneby	Caesalpiniaceae	Herb	-	+	-
432	<i>Senna occidentalis</i> (L.) Link/ Kasaudhi	Caesalpiniaceae	Shrub	-	+	-
433	<i>Senna tora</i> (L.) Roxb./ Chakauda	Caesalpiniaceae	Herb	+	-	-
434	<i>Setaria glauca</i> (L.) P. Beauv.	Poaceae	Herb	-	+	-
435	<i>Setaria intermedia</i> Roem. & Schult.	Poaceae	Herb	-	+	-
436	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Poaceae	Herb	+	-	-
437	<i>Setaria verticillata</i> (L.) P. Beauv.	Poaceae	Herb	-	+	-
438	<i>Sida acuta</i> Burm. f./ Bariyari	Malvaceae	Herb	+	-	-
439	<i>Sida cordata</i> (Burm. f.) Bors.	Malvaceae	Herb	-	+	-
440	<i>Sida cordifolia</i> L./ Khareti	Malvaceae	Herb	-	+	-
441	<i>Sida rhombifolia</i> L.	Malvaceae	Herb	-	+	-
442	<i>Sigesbeckia orientalis</i> L.	Asteraceae	Herb	-	+	-
443	<i>Smilax zeylanica</i> L./ Ramdatoun	Smilacaceae	Climber	-	+	-
444	<i>Smithia conferta</i> Sm.	Fabaceae	Herb	-	+	-
445	<i>Solena amplexicaulis</i> (Lam.) Gandhi	Cucurbitaceae	Herb	-	+	-
446	<i>Solanum incanum</i> L./ Van-bhanta	Solanaceae	Shrub	-	+	-
447	<i>Solanum nigrum</i> L./ Makoy	Solanaceae	Herb	-	+	-
448	<i>Solanum virginianum</i> L./ Bhatkatiya	Solanaceae	Herb	-	+	-
449	<i>Sopubia delphinifolia</i> (L.) G. Don	Scrophulariaceae	Herb	-	+	-
450	<i>Soymida febrifuga</i> (Roxb.) A. Juss./ Rohina	Meliaceae	Tree	-	-	+

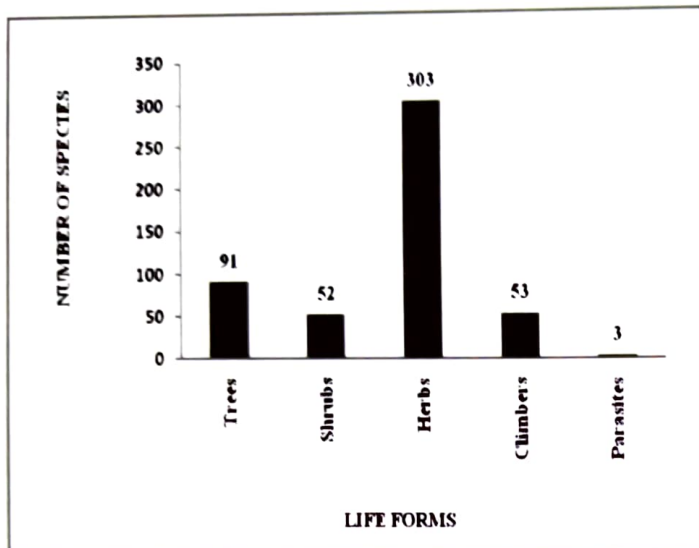
451	<i>Spermacoce hispida</i> L.	Rubiaceae	Herb	-	+	-
452	<i>Spermacoce pusilla</i> Wall.	Rubiaceae	Herb	-	+	-
453	<i>Sphaeranthus indicus</i> L./ Gorakhmundi	Asteraceae	Herb	-	+	-
454	<i>Sporobolus diandrus</i> (Retz.) P. Beauv.	Poaceae	Herb	-	+	-
455	<i>Sporobolus fertilis</i> (Steud.) Clayton	Poaceae	Herb	-	+	-
456	<i>Sporobolus tenuissimus</i> (Schränk.) Kuntze	Poaceae	Herb	-	+	-
457	<i>Sterculia urens</i> Roxb./ Kullu	Sterculiaceae	Tree	-	-	+
458	<i>Stereospermum chelonoides</i> (L. f.) DC./ Ardhkapari	Bignoniaceae	Tree	-	-	+
459	<i>Streblus asper</i> Lour.	Moraceae	Tree	-	-	+
460	<i>Strychnos potatorum</i> L. f./ Nirmali	Loganiaceae	Shrub	-	-	+
461	<i>Syzygium cumini</i> (L.) Skeels/ Jamun	Myrtaceae	Tree	-	+	-
462	<i>Tamarindus indica</i> L./ Imli	Caesalpiniaceae	Tree	-	+	-
463	<i>Tamilnadia uliginosa</i> (Retz.) Tirveng. & Sastre/ Bhadar	Rubiaceae	Tree	-	-	+
464	<i>Tephrosia pumila</i> (Lam.) Pers.	Fabaceae	Herb	-	+	-
465	<i>Tephrosia purpurea</i> (L.) Pers./ Sarpunkha	Fabaceae	Herb	+	-	-
466	<i>Tephrosia villosa</i> (L.) Pers.	Fabaceae	Herb	-	+	-
467	<i>Teramnus labialis</i> (L. f.) Spreng.	Fabaceae	Climber	-	+	-
468	<i>Teramnus mollis</i> Benth.	Fabaceae	Herb	-	+	-
469	<i>Terminalia alata</i> Heyne ex Roth/ Saja	Combretaceae	Tree	-	+	-
470	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn./ Arjun, Kahu	Combretaceae	Tree	-	+	-
471	<i>Terminalia bellirica</i> (Gaertn.) Roxb./ Baheda	Combretaceae	Tree	-	+	-
472	<i>Terminalia chebula</i> Retz./ Harra	Combretaceae	Tree	-	-	+
473	<i>Thelepogon elegans</i> Roth ex Roem. & Schult.	Poaceae	Herb	-	+	-
474	<i>Themeda quadrivalvis</i> (L.) Kuntze	Poaceae	Herb	+	-	-
475	<i>Themeda triandra</i> Forssk.	Poaceae	Herb	+	-	-
476	<i>Thespesia lampas</i> (Cav.) Dalzell & Gibs./ Ban-kapas	Malvaceae	Shrub	-	+	-
477	<i>Thysanolaena latifolia</i> (Roxb. ex Hornem.) Honda	Poaceae	Herb	-	+	-
478	<i>Tiliacora acuminata</i> (Lam.) Miers	Menispermaceae	Climber	-	+	-
479	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. f. & Thoms./ Giloy	Menispermaceae	Climber	-	+	-
480	<i>Tragus roxburghii</i> Panigrahi	Poaceae	Herb	-	+	-
481	<i>Tridax procumbens</i> L./ Ghavpala	Asteraceae	Herb	-	+	-
482	<i>Triumfetta pentandra</i> A. Rich./ Bala	Tiliaceae	Herb	+	-	-
483	<i>Triumfetta rhomboidea</i> Jacq.	Tiliaceae	Herb	+	-	-
484	<i>Triumfetta rotundifolia</i> Lam.	Tiliaceae	Shrub	-	+	-
485	<i>Uraria picta</i> (Jacq.) Desv./ Pithwan	Fabaceae	Herb	-	-	+
486	<i>Urena lobata</i> L.	Malvaceae	Shrub	-	+	-
487	<i>Vallisneria spiralis</i> (L.) Kuntze/ Dudhi-bel	Apocynaceae	Climber	-	+	-
488	<i>Vanda tessellata</i> (Roxb.) Hook. ex G. Don/ Band	Orchidaceae	Parasite	-	+	-
489	<i>Ventilago denticulata</i> Willd./ Kevti	Rhamnaceae	Climber	-	+	-
490	<i>Vetiveria zizanioides</i> (L.) Nash/ Khas	Poaceae	Herb	-	+	-
491	<i>Vigna umbellata</i> (Thunb.) Ohwi & Ohashi	Fabaceae	Herb	-	+	-
492	<i>Vitex negundo</i> L./ Nirgundi	Verbenaceae	Shrub	-	+	-
493	<i>Waltheria indica</i> L.	Sterculiaceae	Herb	-	+	-
494	<i>Woodfordia fruticosa</i> (L.) Kurz/ Dhawai	Lythraceae	Shrub	+	-	-
495	<i>Wrightia tinctoria</i> R. Br. subsp. <i>rothii</i> (G. Don) P.T. Ngan/ Dudhi	Apocynaceae	Tree	-	+	-
496	<i>Xanthium indicum</i> Koen./ Gochhhuru	Asteraceae	Herb	+	-	-
497	<i>Zingiber purpureum</i> Roscoe/ Van-adrak	Zingiberaceae	Herb	-	-	+
498	<i>Ziziphus mauritiana</i> Lam./ Ber	Rhamnaceae	Tree	-	+	-
499	<i>Ziziphus nummularia</i> (Burm. f.) Wight & Arn./ Jharberi	Rhamnaceae	Shrub	-	+	-
500	<i>Ziziphus oenoplia</i> (L.) Mill./ Barari	Rhamnaceae	Shrub	-	+	-
501	<i>Ziziphus xylopyra</i> (Retz.) Willd./ Ghothar	Rhamnaceae	Tree	-	+	-
502	<i>Zornia gibbosa</i> Span.	Fabaceae	Herb	-	+	-

DISCUSSION

The present study reveals that 502 species of angiosperms under 321 genera belonging to 85 families are found in Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh. Out of these 98 species in 60 genera and 15 families belong to Monocotyledons and 404 species in 261 genera and 70 families belong to Dicotyledons.

Ten dominant families with maximum number of species found in the sanctuary are Poaceae (59 spp.), Fabaceae (52 spp.), Acanthaceae and Asteraceae (34 spp. each), Euphorbiaceae (23 spp.), Convolvulaceae (21 spp.), Malvaceae (16 spp.), Rubiaceae (15 spp.), Cyperaceae (14 spp.) and Scrophulariaceae (13 spp.).

The data further indicates that ten dominant genera



Text-figure 2. Habit-wise distribution of plants in Gandhi Sagar Wildlife Sanctuary.

with maximum number of species in the district are *Ipomoea* (10 spp.), *Euphorbia*, *Indigofera* (9 spp. each), *Ficus* (7 spp.), *Acacia*, *Corchorus*, *Crotalaria*, *Eragrostis*, *Phyllanthus* (6 spp. each) and *Alysicarpus* (5 spp.).

An analysis of life forms (Text-figure 2) has further pointed out that out of a total number of 502 species of angiosperms, 303 species are herbs, 52 species are shrubs, 91 species are trees, 53 species are climbers and 3 species are parasites.

The data of field observations have pointed out that 73 species are rare in the sanctuary as their population is represented by few individuals only. These are *Abrus precatorius*, *Alysicarpus pubescens*, *Asparagus racemosus*, *Bacopa monnieri*, *Baliospermum solanifolium*, *Bauhinia vahlii*, *Butea superba*, *Cardiospermum halicacabum*, *Careya arborea*, *Carvia callosa*, *Cassine albens*, *Catunaregam spinosa*, *Celastrus paniculatus*, *Ceriscoides turgida*, *Chlorophytum arundinaceum*, *C. tuberosum*, *Clerodendrum philippinense*, *C. infortunatum*, *Cochlospermum religiosum*, *Cordia macleodii*, *Curcuma amada*, *C. aromatica*, *Cymbopogon martinii*, *Cynoglossum zeylanicum*, *Cullen corylifolium*, *Dalbergia latifolia*, *Dioscorea hispida*, *Diospyros montana*, *Embelia basaal*, *Eranthemum nervosum*, *Erythrina suberosa*, *Ficus microcarpa*, *Garuga pinnata*, *Gloriosa superba*,

Gmelina arborea, *Grewia tiliifolia*, *Gymnema sylvestri*, *Hymenodictyon orixense*, *Indigofera colutea*, *Ipomoea dichroa*, *I. turbinata*, *Ischaemum rugosum*, *Laggera crispa*, *Leea asiatica*, *Litsea glutinosa*, *Marsdenia tenacissima*, *Maytenus emarginata*, *M. senegalensis*, *Mitreola petiolata*, *Momordica dioica*, *Moringa concanensis*, *Mucuna pruriens*, *Murraya paniculata*, *Naringi crenulata*, *Operculina turpethum*, *Oroxylum indicum*, *Phyllanthus emblica*, *Plumbago zeylanica*, *Pterocarpus marsupium*, *Pueraria tuberosa*, *Rhynchosia capitata*, *Rothea serrata*, *Schoenefeldia gracilis*, *Semecarpus anacardium*, *Soymida febrifuga*, *Sterculia urens*, *Stereospermum chelonoides*, *Streblus asper*, *Strychnos potatorum*, *Tamilnadia uliginosa*, *Terminalia chebula*, *Uraria picta* and *Zingiber purpureum*. Thus, the present findings are highly significant as these provide the latest status of angiospermic plant wealth of the sanctuary which will be useful to botanists, foresters and planners. The results also fulfil the point given in chapter IX of the Biological Diversity Bill 2000 as well as article 7 of Convention on Biological Diversity.

ACKNOWLEDGEMENTS

The authors are thankful to forest staff of Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh for providing help during field survey.

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