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Dicotyledonous herbaceous plant biodiversity of Balaghat City (M.P.) and Surrounding Area

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Abstract
Herbaceous plant species are important components of ecosystems which form groundcover of area most of them are dicotyledonous. These are a major source of medicine, aroma, food and fodder. Floristic studies evaluate the floral diversity. Balaghat is rich in its floral biodiversity. In the following survey which was carried out from June 2019 to May 2021, 285 dicot plant species related to174 genus 57 families are recorded. Asteraceae, Fabaceaeand Acanthaceae are dominating families with 40, 40, 23 spp. sequentially. Euphorbiaceae (17 spp.), Amaranthaceae & Solanaceae (16 spp.) and Lamiaceae & Malvaceae (14 spp.) are sub-dominating families. 21 families were monotypic. Documenting indigenous knowledge through ethno-botanical studies is important for the conservation of biological and cultural diversities.

Keywords: biodiversity, Balaghat, floristic, dicotyledonous, ethno-botanical

Introduction
Herbaceous plants, according to Hornby (2001) [9], are usually small tender vascular plants, lacking woody stems above ground and including many perennials and nearly all annuals and biennials. They are broadleaved flowering plants and are not grass-like (www.Wikipedia). These plant species are important components of ecosystems and make up a major portion of plant diversity and play an important role in sustainable growth of global biodiversity. These are present in a wide range and form groundcover of area. These are a major source of medicine, aroma, food and fodder for human beings (Kaur and Sidhu 2021) [20]. According to the climate conditions and land use the composition of herbaceous vegetation is widely diverse (Kensa *et al* 2018) [15]. Due to diverse nature, herbaceous plants serve as habitats for a wide range of animals and are involved in the stabilization of topsoil, improving soils quality by improving water penetration and water holding capacity of the soil (Abba and Timothy 2021) [26].
In recent years floristic studies have acquired increasing importance in response to the need of different countries to assess their plant wealth in future prospects (Faria *et al* 2021) [25]. The regional floristic studies are very helpful to evaluate the flora diversity of local areas and it can be achieved by exploration of smaller areas. This is useful to understand the existing flora (Bagal 2020) [16]. This gives adequate knowledge about the plants which is important for planning sustainable development of any region; as well it promotes conservation and preservation of floral diversity as an important social, moral and economic issue where documentation of plants is necessary for such a program. Therefore, the current research focuses on the documentation of herbal diversity at the Balaghat city and its surroundings. The study was undertaken to explore the commonly growing vegetation which is beneficial to identify local biodiversity and to make local people aware for their environment, also usable for students of botany, agriculture, horticulture, pharmacy and for environmentalists.

Material and methods
Description of the survey area
Balaghat is situated at the Wainganga River valley of Makal hilly Satpura range. Climate of Balaghat: (sub-tropical region, the southeast part of M.P., India). Rain/temperature - 1440 mm / 30°C-45°C. Geographical position - 21°48′N 80°11′E (www.Wikipedia). Average elevation - 288 meters (944 feet).

Floristic survey
Balaghat is rich in its floral biodiversity but it is mostly untouched yet present. Only a few workers have conducted floral operations here. Following survey was conducted in the plant species growing in their natural wild habitats like grounds, roadsides, agriculture land, river bank, open land, garden etc. from June 2019 to May 2021. In this survey only dicotyledonous plants are focused. Specimens were collected from the investigation area (according availability). These specimens were identified and photographed. Maximum plants have been photographed in their natural habitat whereas others in laboratory conditions. Species have been assigned to their

equaling families. Herbarium sheets were prepared and documented. Identification was done with the help of different floras and online app Google lens. (Kensa, Chinnu and Lekshmi 2018) [15]

The survey area

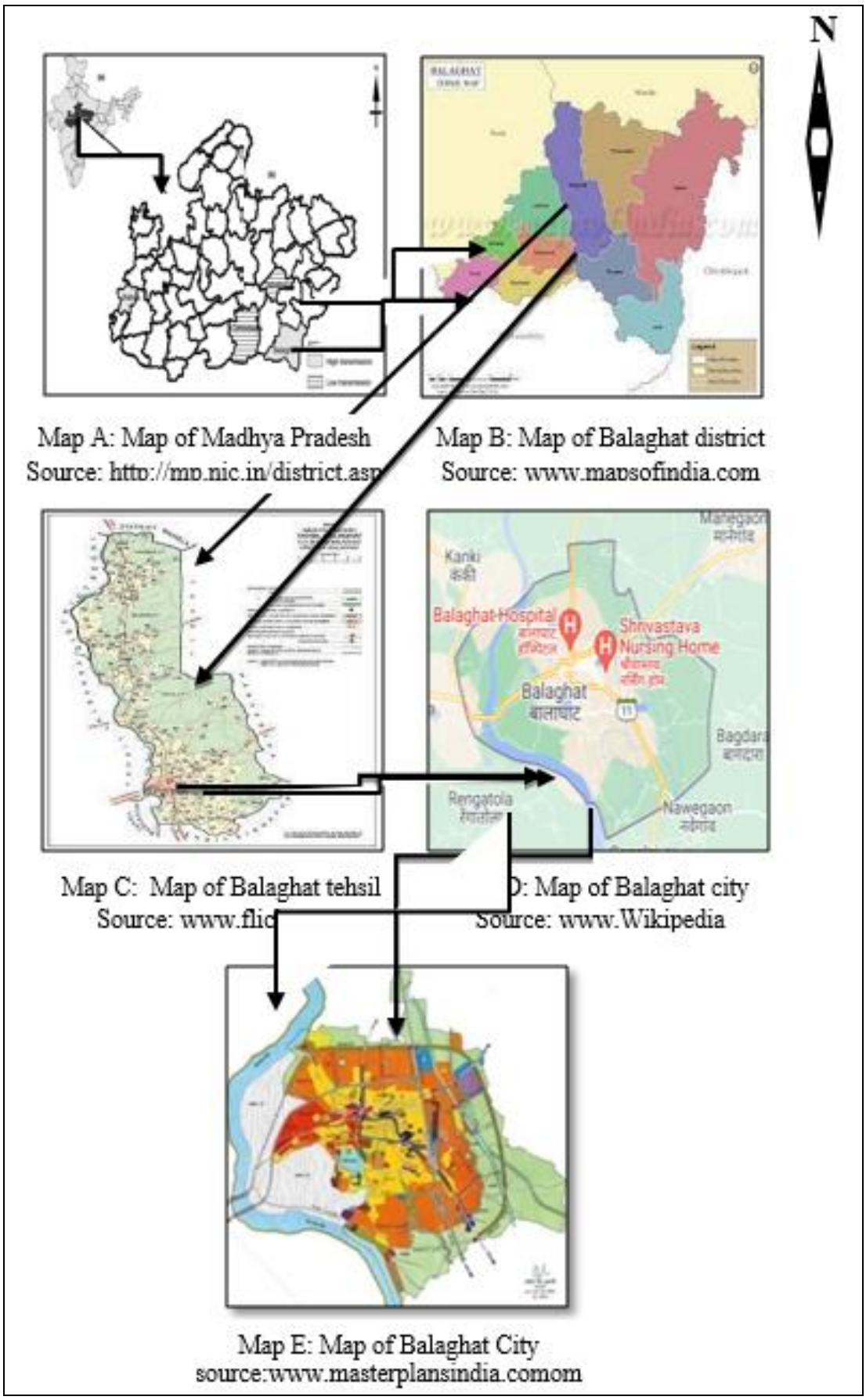


Fig 1

Result and Discussion

The present study was aimed to assess the only dicot herbaceous plants diversity of area. This study shows that 285 dicot plant species present in this area are related to 174 genus 57 families. All the plants are shown in Table 1. Prominent families are Asteraceae, Fabaceae and Acanthaceae. The maximum diversity of species were come from the family Asteraceae (40 spp.), Fabaceae (40 spp.), Acanthaceae (23 spp.), Euphorbiaceae (17 spp.), Amaranthaceae & Solanaceae (16 spp.),and Lamiaceae & Malvaceae (14 spp.),followed by Brassicaceae (7 spp.), Convolvulaceae and Tiliaceae (6 spp.), Caesalpiniaceae and Linderniaceae (5 spp), Onagraceae, Oxalidaceae and Polygonaceae (4 spp), Apocynaceae, Boraginaceae, Chenopodiaceae, Cleomaceae, Leeaceae, Loranthaceae, Portulacaceaeand Scrophulariaceae (3 species each). Apiaceae, Droseraceae, Gentianaceae, Lythraceae, Molluginaceae, Nyctaginaceae, Papaveraceae, Rubiaceae, Sterculiaceae and Verbenaceae had (2) species each, whereas 21 families were monotypic with single species (Table 1). All the species available here are useful for domestic, ethno-botanical and economical purposes.

Previously Gwalwanshi *et al* (2017) [14] recorded 46 plant species belonging to 37 genera of 37 families in Balaghat in which Leguminosae (Fabaceae, Caesalpiniaceae and Mimosaceae) family was dominant. Similarly, 210 genera and 281 species from 86 families in the area of Bargi hills were revealed by Shrivastava *et al* (2005) in their project. The dominant family was Poaceae with 54 species, followed by Papilionaceae 21 and Cyperaceae with 17. 692 species of angiosperms under 469 genera belonging to 115 families are found in Jhabua district of M.P. with 374 species of dicot herbaceous plants (Wagh *et al* 2013) [11]. Similar floristic works were done by Kaur (2015) [13] in Ramdas village (Punjab), Kensa *et al* (2018) [15] in Veerani Aloor (Kanyakumari, Tamilnadu), Fasna *et al* (2020) [18] in Manjeri (Kerala), Bagal (2020) [16] in Pune (Maharashtra), Dulare *et al* (2021) in Nagpur city (Maharashtra), Kamble *et al* (2021) [19, 20] wetland flora of Nagpur (Maharashtra), Kaur *et al* (2021) [20] in Bathinda (Punjab), Bhat (2021) in Shankaracharya forest (Kashmir), Modi *et al* (2021) [21] in Kalyana (Karnataka) in India and out of India Faria *et al* (2021) [25] in Bangladesh, Nodza *et al* (2021) [23] in Nigeria and Kurata *et al* (2021) [24] in Japan.

Table 1: List of plant species recorded from the study area

S. No.	Family	Botanical Name of Plant (Local Name)
1.	Acanthaceae	*Andrographis paniculata* (Burm. *f.*) Wallich *ex* Nees.(Bhuin neem)
2.		*Barleria cristata* L. (Tandralu)
3.		*Barleria prionitis* L. (Piyabans)
4.		*Barleria strigosa* Willd. (Neelakusumaa)
5.		*Blepharis asperrima* Nees
6.		*Blepharis repens* (Vahl) Roth.
7.		*Crossandra infundibuliformis* (L.) Nees (Priya darsa)
8.		*Dipterocanthus patulus* (Jacq.) Nees
9.		*Haplanthodes tentaculatus* (Nees) Majumdar (Katsula)
10.		*Hemigraphis reptans* (G.Forst.) T.Anderson ex Hemsl.(Morpankhi/ Bhangara)
11.		*Hygrophila auriculata* (Schumach.) Heine (Talmakhana)
12.		*Indoneesiella echioides* (L.) Sreemadh. (Ranchimani)
13.		*Justicia adhatoda* L. (Adulasa/ Vasaka)
14.		*Justicia diffusa* Willd. (Makandar)
15.		*Justicia pectinata* L. (Mashi/Sut)
16.		*Justicia procumbens* L. (Kalmashi)
17.		*Justicia simplex* D. Don Thunb (Bansa)
18.		*Nelsonia canescens* (Lam.) Spreng. (Chhota aandhi /Bada Rasna)
19.		*Peristrophe paniculata* (Forssk.) Brummitt (Atrilal)
20.		*Ruellia tuberosa* L.(chatpati)
21.		*Rungia repens* (L.) Nees (Kharmor)
22.		*Rungia muralis* Royle ex Nees (Kharmor/Ghati-pitpapra)
23.		*Lepidagathis fasciculata* (Retz.) Nees (Rasna)
24.	Amaranthaceae	*Achyranthes aspera* Linn. (Apamarg / Chidchida)
25.		*Aerva lanata* (L.) Juss. *ex* Schult. (Gorakhganja)
26.		*Alternanthera denticulata* (L.) DC.(Matsyakshi/ Giojihra/Putturah)
27.		*Alternanthera sessilis* (L.) R.Br. *ex* DC. (Guroo/Garundi)
28.		*Alternanthera pungens* Kunth (Gurrosag/ kante vali santi)
29.		*Amaranthus dubius* Mart. *ex* Thell. (Jangali chaulai)
30.		*Amaranthus spinosus* L. (Kanta chaulai)
31.		*Amaranthus viridis* L. (Chaulai)
32.		*Celosia argentea* L. (Murga phool)
33.		*Celosia cristata* Linn. (Lalmurga phool)
34.		*Celosia spicata* Spreng. (Murga phool/ Garkha/Morachendya)

35.		*Digera muricata* (L.) Mart. (Lesua)
36.		*Gomphrena celosioides* Mart.
37.		*Gomphrena globosa* L.(Supaaree Phool)
38.		*Gomphrena serrata*L. (Supaaree Phool)
39.		*Pupalia lappacea* (L.) Juss. (Kala liptiya / Chirchitta)
40.	Apiaceae	*Coriandrum sativum* L. (Dhaniya)
41.		*Centella asiatica* (L.) Urban (Mandukparni)
42.	Apocynaceae	*Rauvolfia serpentine* (L.) Benth. *ex* Kurz (Sarpgandh)
43.		*Catharanthus roseus* (L.) G. Don (Sada-bahar)
44.		*Hemidesmus indicus* (L.) R. Br. ex Schult.(Anantamul, Dudhli)
45.	Asteraceae	*Acanthospermum hispidum* DC. (Chota Gokhru)
46.		*Ageratum conyzoides* L. (Kobhi)
47.		*Bidens biternata* (Lour.) Merr. & sherff. (Chewada)
48.		*Blainvillea acmella* (L.) Philipson
49.		*Blumea lacera* (Burm.) *f.* DC.
50.		*Blumea obliqua* (L.) Druc
51.		*Calendula officinalis* L. (Zergul)
52.		*Chromolaena odorata* L. R.M.King & H.Rob.
53.		*Chrysanthemum indicum* L. (Sevanti)
54.		*Chrysopsis mariana* L. elliott (wild aster)
55.		*Conyza canadensis* (L.) Cronquist.
56.		*Cosmos sulphureus* (Cav.) Willd. (Jangli genda)
57.		*Cyathocline purpurea* (Ham. ex D. Don) O. Ktze
58.		*Echinops echinatus* Roxb. (Oontakata)
59.		*Eclipta alba* (L.) Hassk.(Bhringraj)
60.		*Eclipta prostrata* (L.) L. (Ghamara)
61.		*Elephantopus scaber* L. (Samdudri, Ban-tambakhu)
62.		*Erigeron sublyratus* Roxb. ex DC.
63.		*Erigeron asteroides* Roxb.
64.		*Erigeron canadensis*L. (Makkhivish)
65.		*Glossocardia bidens* (Retz.) Veldkamp
66.		*Gnaphalium polycaulon* Pers.
67.		*Lactuca serriola* L.
68.		*Lagascea mollis* Cav.
69.		*Launaea acaulis* (Roxb.) Babc. *ex* Ker. (Jangali gobi)
70.		*Parthenium hysterophorus* L. (Gajarghas)
71.		*Pentanema cernua* (Dalz.) Ling (Jangali surajmukhi/Sonsari)
72.		*Pentanema indica* (L.) Ling (Bichhloo/ Sonkadi)
73.		*Sonchus asper* (L.) Hill.
74.		*Sphaeranthus indicus* L. (Gorakhmundi/gurmundi)
75.		*Spilanthes calva* DC. (Akalkara)
76.		*Spilanthes ciliata* H.B.K. (Charka)
77.		*Synedrella nodiflora* (L.) Gaertn.
78.		*Tagetes erecta* L. (Bada pila Genda)
79.		*Tagetes patula* L. (Lal chhota Genda)
80.		*Tridax procumbens* L.(Dimajare/ ghavpala)
81.		*Vernonia anthelmintica* (L.) Willd. (Ghodajira)
82.		*Vernonia cinerea* (Linn.) Less. (Sahdevi)
83.		*Xanthium indicum* Koen. (Bada Gokhru/ Korsa Kanta)
84.		*Zinnia elegans* Jacq. (Supadi phool/ Zenia)
85.	Balsaminaceae	*Impatiens balsamina* L. (Jangali Tilli)
86.	Boraginaceae	*Heliotropium indicum* L. (Hathisunda)
87.		*Trichodesma indicum* (Linn.) R. Br. *ex* Lehm. (Ghamara)
88.		*Trichodesma zeylanicum* Boiss.
89.	Brassicaceae	*Brassica campestris* L. (Rai)
90.		*Brassica juncea* (L.) Czern (Sarson)
91.		*Brassica nigra* (L.) W.D.J.Koch (Kali Sarson)
92.		*Cardamine flexuosa* With.
93.		*Iberis amara* L.
94.		*Lepidium didymum* L. (Pitpapra)
95.		*Raphanus sativus* L. (Muli)

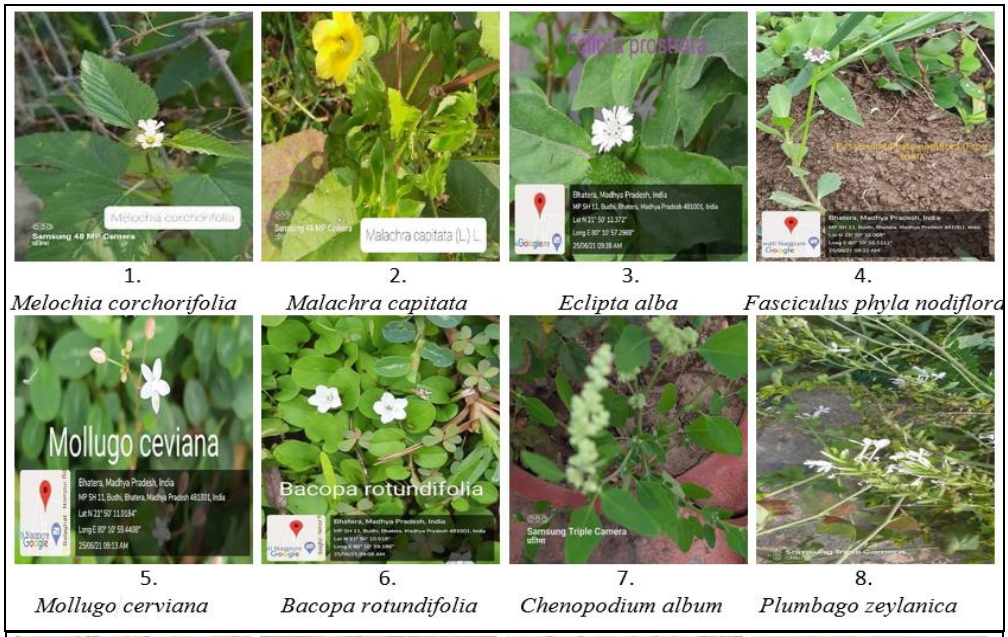
96.	Buddlejaceae	*Buddleja asiatica* Lour. (Bhati/Neemada)
97.	Cactaceae	*Opuntia dillenii* Haw. (Nagfani)
98.	Caesalpiniaceae	*Cassia absus* L. (Chakasu)
99.		*Cassia kleinii* Wight & Arn.
100.		*Cassia tora* L. (Chirota)
101.		*Cassia auriculata* (CA) Linn
102.		*Cassia occidentalis* L.
103.	Caryophyllaceae	*Polycarpaea corymbosa* (L.) Lamk. (Chiriya)
104.	Chenopodiaceae	*Chenopodium album* L. (Bathua)
105.		*Chenopodium berlandieri* Moq. (Badi Bathua)
106.		*Chenopodium murale* L. (Bathua)
107.	Cleomaceae	*Cleome gynandra* L. (Hulhul)
108.		*Cleome scaposa* DC.
109.		*Cleome viscosa* L. (Kuslya)
110.	Convolvulaceae	*Convolvulus arvensis* L. (Grachi)
111.		*Convolvulus prostratus* Forssk (Shankhpushpi)
112.		*Evolvulus alsinoides* (L.) L. (Shankhpushpi)
113.		*Evolvulus nummularius* (L.) L.
114.		*Ipomoea aquetica* Forsskal (Karmata bhaji)
115.		*Ipomoea hederifolia*(L.)
116.	Crassulaceae	*Kalanchoe pinnata* (Lamk.) Pers. (Patharchatta)
117.	Droseraceae	*Drosera burmannii.* Vahl. *(*Mukhjali)
118.		*Drosera spatulata* Labill. *(*Mukhjali)
119.	Euphorbiaceae	*Acalypha indica* L. (Kuppi)
120.		*Baliospermum montanum* (Willd.) Muell-Arg (Danti)
121.		*Chrozophora prostrata* Dalzell & A.Gibson
122.		*Chrozophora rottleri* (Geiseler) A.Juss. ex Spreng. (suryavarti)
123.		*Croton bonpalndianus* Baill.
124.		*Euphorbia dracunculoides* Lam. (Chagal putputi)
125.		*Euphorbia heterophylla* L. (Dudhi)
126.		*Euphorbia heyneana* Spreng (Choti Dudhaly)
127.		*Euphorbia hirta* L. (Kali dudhi)
128.		*Euphorbia milli* Desmoul. (Dudhi)
129.		*Euphorbia nerifolia* L. (Thuvar)
130.		*Euphorbia hypericifolia* L.
131.		*Euphorbia thymifolia* L. (Lal dudh, chhoti dudhi)
132.		*Phyllanthus amarus* Schumach. & Thonn. (Bhuin aonla)
133.		*Phyllanthus maderaspatensis* L. (Hajarmani/Ranavali/bada bhui aonla)
134.		*Phyllanthus virgatus* G. Forster (Lal Bada Bhui Amla)
135.		*Phyllanthus niruri* L.(Bhui aonla)
136.	Elatinaceae	*Bergia ammannioides* Roxb. ex Roth
137.	Fabaceae	*Aeschynomeme indica* L. Phulan/ Badi chhuimui
138.		*Alysicarpus bupleurifolius* (L.) DC. Galiya
139.		*Alysicarpus monilifer* (L.) DC. Katkhairi
140.		*Alysicarpus rugosus* (Willd.) DC. Jaingali gailiya
141.		*Alysicarpus vaginalis* (L.) DC.
142.		*Atylosia platycarpa* Benth. (Bankultha)
143.		*Atylosia rugosa Wight & Arn.*(Badi kulthi)
144.		*Cajanus cajan* (L.) Huth (Arhar)
145.		*Cajanus scarabaeides* (L.) Thouars(kultha)
146.		*Cicer arietinum* L. (Chana)
147.		*Crotolaria filipes* Benth. (Bhuinkhod)
148.		*Crotolaria juncea* L. (Sanai)
149.		*Crotolaria medicaginea* Lamk. (Gulabi)
150.		*Crotolaria ramossissima* Roxb. (Harduli)
151.		*Cyamopsis tetragonoloba* (L.) Taub. (Gwarphali)
152.		*Desmodium heterocarpon* (L.) DC.
153.		*Desmodium pulchellum*(L.) Benth.(Jatsalpan, Lodhrah, Lodram)
154.		*Desmodium trifolium* (L.)DC
155.		*Flemingia strobilifera* (L.) J.St.-Hil.(kanphuta)
156.		*Flamingia macrophylla* (Willd.) Merr.(bhalia)

157.		*Indigofera cordifolia* Heyne *ex* Roth. (Nilawari)
158.		*Indigofera linifolia* (L. *f.*) Retz. (Torki)
159.		*Indigofera linnaei* Ali (Bhuiguli)
160.		*Lathyrus odoratus* L. ·
161.		*Lathyrus aphaca* L. (Jangali matar)
162.		*Lathyrus sativus* L. (lakhodi/tivda)
163.		*Macrotyloma uniflorum* L. (Kulthi)
164.		*Medicago sativa* L. (Ranmetho)
165.		*Melilotus indica* (L.) Ali. (Jangali methi)
166.		*Stylosanthes fruticosa* (Retz.) Mohlenbr.
167.		*Tephrosia purpurea* (L.) Pers. (Sarpunkha)
168.		*Tephrosia villosa* (L.) Pers. (Bhamasia)
169.		*Trifolium pratense* L. (Lusan)
170.		*Trigonella foenum-graecum* L. (Methi)
171.		*Uraria picta* (Jacq.) Desv. (Dabra)
172.		*Vicia sativa* L. (Matari / batari)
173.		*Vigna mungo* (L.) Hepper (Urd)
174.		*Vigna radiata* (L.) Wilczek (Moog)
175.		*Vigna sublobata* (Roxb.) Babu & Sharma (Jangali moog/ Bahi moog)
176.		*Zornia gibbosa* Span. (landgu)
177.	Gentianaceae	*Canscora decussata* (Roxb.) Roem. & Schult (Sankhphuli)
178.		*Centarium meyeri* (Bunge) Druce
179.	Hydrophyllaceae	*Hydrolea zeylanica* (L.) Vahl (Koliary/Keriti/Popti)
180.	Lamiaceae	*Anisomeles indica* (L.) Kuntze. (Karahi)
		Clinopodium brownei (Sw.) Kuntze
181.		*Hyptis suaveolens* (L.) Poit. (Vilayati tulsi)
182.		*Leonotis nepetifolia* (L.)R.Br. (Bada or lal guma/ mahadrona)
183.		*Leucas aspera* (Willd.) Link (Gophaa)
184.		*Leucas cephalotes* (Koeing *ex* Roth) Spreng. (Dronapushpi/ Dhurpi sag)
185.		*Mentha arvensis* L.(Pudina)
186.		*Ocimum basilicum* L. (Jangali Tulsi /Ram Tulsi)
187.		*Ocimum canum* Sims (Kali tulasi/Ran tulsi)
188.		*Ocimum sanctum* L.(Shyma tulasi)
189.		*Ocimum gratissimum* (Badi Tulsi/Ban tulsi)
190.		*Ocimum kilimandscharicum* Gürke (Kapur tulsi)
191.		*Salvia elegans* Vahl
192.		*Salvia aegyptiaca* L. (sabja/ Tukh malanga)
193.	Leeaceae	*Leea asiatica* (L.) Ridsdale (banchalita)
194.		*Leea macrophylla* Roxb. *ex* Hornem.(Motali Danhi)
195.		*Leea indica* Burm.f. (Kukur jihwa /Chatri)
196.	Linaceae	*Linum usitatissimum* L. (Alsi)
197.	Linderniaceae	*Lindernia ciliata* (Colsm.) Pennell
198.		*Lindernia crustatacea* (L.) F. Muell.
199.		*Lindernia dubia* (L.) Pennell.
200.		*Lindernia procumbent* (Krock.) Borbá
201.		*Lindernia antipoda* (L.) Alston
202.	Loganiaceae	*Spigelia anthelmia* L. (Gudari)
203.	Loranthaceae	*Dendrophthoe falcta* (L. *f.*) Etting. (Banda Parasite)
204.		*Loranthus philippensis* Cham. & Schlechtend. (Parasite on woody plant)
205.		*Viscum articulatum* Burm. *f.* (Banda Parasite)
206.	Lythraceae	*Ammannia baccifera* L. Nay
207.		*Ammannia multiflora* Robx.
208.	Malvaceae	*Abelmoschus crinitus* Wall. Kamlya
209.		*Abelmoschus esculentus* (Linn.) Moench. Bhindi
210.		*Abelmoschus ficulneus* (L.) Wight & Arn. ex Wight.(Ran bhendi)
211.		*Abutilon indicum* (L.) Kanghi
212.		*Hibiscus cancellatus* Wall. (Kamlya)
213.		*Hibiscus mutabilis* L.(Sthalkamal / radha gulab)
214.		*Hibiscus subdariffa* L. (Amadi bhaji)
215.		*Hibiscus vitifolius* L. (Jangali kapas)
216.		*Malachra capitata* (L.) L.

217.		*Pavonia zeylanica* (L.) Cav.
218.		*Sida acuta* Burm. *f*. (Bala/mirchi khareta)
219.		*Sida alba* L. (Aribala)
220.		*Sida cordifolia* L. (Barilal)
221.		*Sida rhombifolia* L. (Bhuinguli)
222.	Martyniaceae	*Martynia annua* L. (Bicchu/Baghanakha)
223.	Mimosaceae	*Mimosa pudica* L. (Lajwanti)
224.	Molluginaceae	*Glinus lotoides* L. (Gandhi buti)
225.		*Mollugo cerviana* (L.) Seringe (Chiri-ghas)
226.	Nyctaginaceae	*Boerhavia diffusa* L. (Punarnava)
227.		*Mirabilis jalapa* L. (Gulbas/ Sandhya-malati)
228.	Onagraceae	*Ludwigia octovalvis* (Jacq.) Raven (Jangali lavang)
229.		*Ludwigia repens* L.
230.		*Ludwigia perennis L.*
231.		*Ludwigia adscendens* (L.) H.Hara(Kessara)
232.	Oxalidaceae	*Biophytum sensitivum* (L.) DC. (Lajwanti)
233.		*Biophytum reinwardtii* (Zucc.) Klotzsch
234.		*Oxalis corniculata* L.(Khatti buti)
235.		*Oxalis corymbosa* DC.(badi Khatti buti)
236.	Papaveraceae	*Argemone mexicana* L. (Satyanashi/Peelikateli)
237.		*Fumaria indica* (Hassk.) Pugsley (Pitpapda)
238.	Pedaliaceae	*Sesamum indicum* L. (Til)
239.	Piperaceae	*Peperomia pellucida* (L.) Kunth (Varshabhoo)
240.	Plumbaginaceae	*Plumbago zeylanica* L. (Chitrak)
241.	Polygalaceae	*Polygala chinensis* L. (Kanphuta)
242.	Polygonaceae	*Polygonum glabrum* Willd. (Sheral)
243.		*Rumex dentatus* L. subsp. Klotzschianus (Meisn.) Rchb. *f*.(Amrule/ Jangli palak)
244.		*Rumex acetosella* L. (Chuk)
245.		*Rumex obtusifolius* L.
246.	Portulacaceae	*Portulaca oleracea* L. (Nonia/Kulfa)
247.		*Portulaca pilosa* L. ssp. *grandiflora* (Hook.) Geesink (Chhota Dupaharia gulab)
248.		*Portulaca grandiflora* Hook.(Dupaharia gulab)
249.	Primulaceae	*Anagalis arvensis* L.(Neel/Dharti Dhak/ Krishnaneel)
250.	Rubiaceae	*Oldenlandia corymbosa* L. (Khet papra/ Parpata)
251.		*Spermacoce articularis* L.f. (Guthari/ Madanaghanti)
252.	Sapindaceae	*Cardiospermum halicacabum* L. (Kanphuta)
253.	Scrophulariaceae	*Bacopa monnieri* (L.) Wettst. (Brahmi)
254.		*Bacopa rotundifolia* (Michx.) Wettst
255.		*Mecardonia procumbens* (Mill.) Small (Makardana)
256.	Solanaceae	*Capsicum annuum* L. (Mirch)
257.		*Datura alba* (White datura)
258.		*Datura innoxia* Mill. (Chhota safed Dhatura)
259.		*Datura metel* L. (bada baigni Datura)
260.		*Datura stramonium* L. (kala datura)
261.		*Lycopersicon esculentum* Mill. (Tamatar)
262.		*Lycopersicon peruvianum* (L.) Mill. (chhota jangli tamater/bhedri)
263.		*Nicandra physalodes* (L.) Scop. (Ranpopati)
264.		*Nicotiana plumbaginifolia* Viv. (Jangali tamakhu)
265.		*Physalis minima* L. (Rasbhari, Ban Tipariya, Poptiya)
266.		*Solanum indicum* (Bari kateri)
267.		*Solanum melongena* L. (Bhanta)
268.		*Solanum nigrum* L. (Makoi)
269.		*Solanum torvum* Sw. (Bhurat/ Bhankatiya)
270.		*Solanum virginianum* L. (Kateri)
271.		*Solanum xanthocarpum Schrad & Wendl.* (Kateri/ Bhatkatii)
272.	Sterculiaceae	*Melochia corchorifolia* L. (Tikiokra/ Bilpat/Chitrabeez)
273.		*Waltheria indica* L. (Khain)
274.	Tiliaceae	*Corchorus capsularis* L. (Cheja)
275.		*Corchorus olitorius* L. (Rajan ki bhaji)

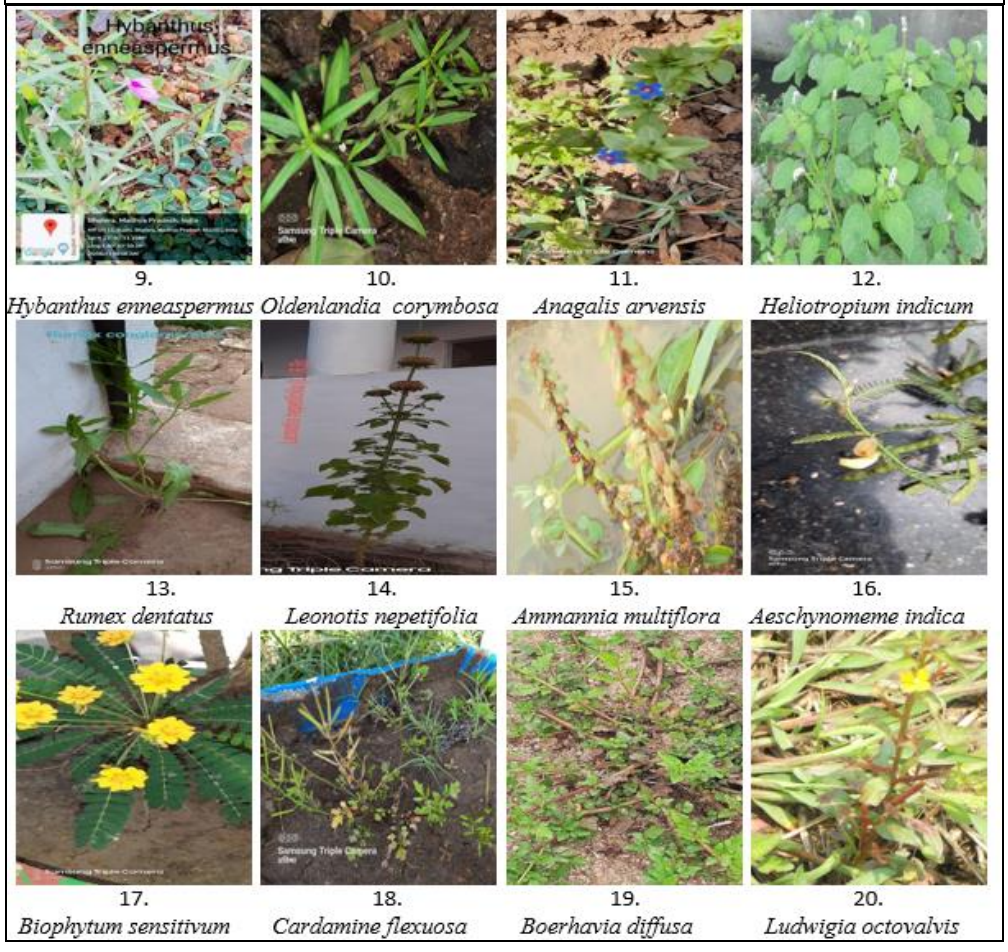
276.		*Corchorus tridens* L.
277.		*Corchorus trilocularis* L.
278.		*Triumfetta pentandra* A. Rich. (Liptiya)
279.		*Triumfetta rhomboidea* Jacq. (Kalaliptiya)
280.	Urticaceae	*Laportea interrupta* (L.) Chew. (bichua)
281.	Verbenaceae	*Fasciculus phyla nodiflora* (L.) E.(bhu okra/ jal buti/ jal pippali)
282.		*Verbena bipinnatifida* Schauer
283.	Violaceae	*Hybanthus enneaspermus* (L.) *f. v.* Muell. (Ratnpurus)
284.	Zygophyllaceae	*Tribulus terrestris* L. (Gokhru)

Photographs: Photos of some dicotyledonous herbaceous plants



1. *Melochia corchorifolia* 2. *Malachra capitata* 3. *Eclipta alba* 4. *Fasciculus phyla nodiflora*

5. *Mollugo cerviana* 6. *Bacopa rotundifolia* 7. *Chenopodium album* 8. *Plumbago zeylanica*



9. *Hybanthus enneaspermus* 10. *Oldenlandia corymbosa* 11. *Anagalis arvensis* 12. *Heliotropium indicum*

13. *Rumex dentatus* 14. *Leonotis nepetifolia* 15. *Ammannia multiflora* 16. *Aeschynomeme indica*

17. *Biophytum sensitivum* 18. *Cardamine flexuosa* 19. *Boerhavia diffusa* 20. *Ludwigia octovalvis*

Fig 2

Conclusion

Studied area possesses a wide range of floral diversity which belongs to different families and habits. The indigenous knowledge is an important tool for study of natural resources that has enormous potential to facilitate the development process in cost-effective and sustainable ways. Ethno-botanical studies of indigenous knowledge through documentation are an important factor for the cultural diversities and conservation of ecosystems.

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