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Research Paper

**ASSESSMENT OF MONOCOTYLEDONOUS PLANT SPECIES DIVERSITY
FROM KARJAT TAHSIL OF AHMEDNAGAR, MAHARASHTRA, INDIA**

**Suresh Palve¹, Suvrna Gaikwad², Dadasaheb Wadavkar³, Sauraj Torane⁴ and
Harshal Wangikar⁵**

¹⁻³Department of Botany,
Dada Patil Mahavidyalaya, Karjat. 41402,
Dist. Ahmednagar, (M.S.), India

⁴Department of Botany,
Tuljaram Chaturchand College of Arts,
Science & Commerce, Baramati, India.

⁵Bharati Vidyapeeth's Dr. Patangrao Kadam Mahavidyalaya,
Sangli 416416 Maharashtra,
India.

Abstract

The Present study was conducted to collect, identify and document the monocot flora of Karjat Tahsil of district Ahmednagar (MS) India. Karjat Tahsil is located within 18°19'86" N to 18°49'86" N latitude and 74°43' 20" E to 75°13'20" E longitude. Survey of monocot plants of the Karjat tahsil were carried out during June 2017 to March 2020. Plant materials have been collected for each of the species from all the study sites as per standard taxonomic procedure. The different species are collected during the surveys were identified with the help of some flora, taxonomic literature, taxonomy expert and Department of Botany Dada Patil Mahavidyalaya, Karjat. A total of 66 monocotyledonous plants belong to 19 families have been found in the investigation. Poaceae was the dominant family, followed by Commelinaceae and Araceae.

Key words: Monocotyledonous plants, Karjat Tahsil, Maharashtra.

INTRODUCTION

Floristic diversity is defined as the variety and variability of plants in a given region. The floristic diversity can be measured at any level from overall global diversity to ecosystem, community, populations, species and even to genes within a single individual. India is largest biodiversity in the world. India has 12 biogeographic zones, 5 biomes and 3 bioregion domains (Cox *et al.*, 1993). The country supports a diverse array of ecosystems or habitats such as forests, grasslands, desert, coastal, marine and

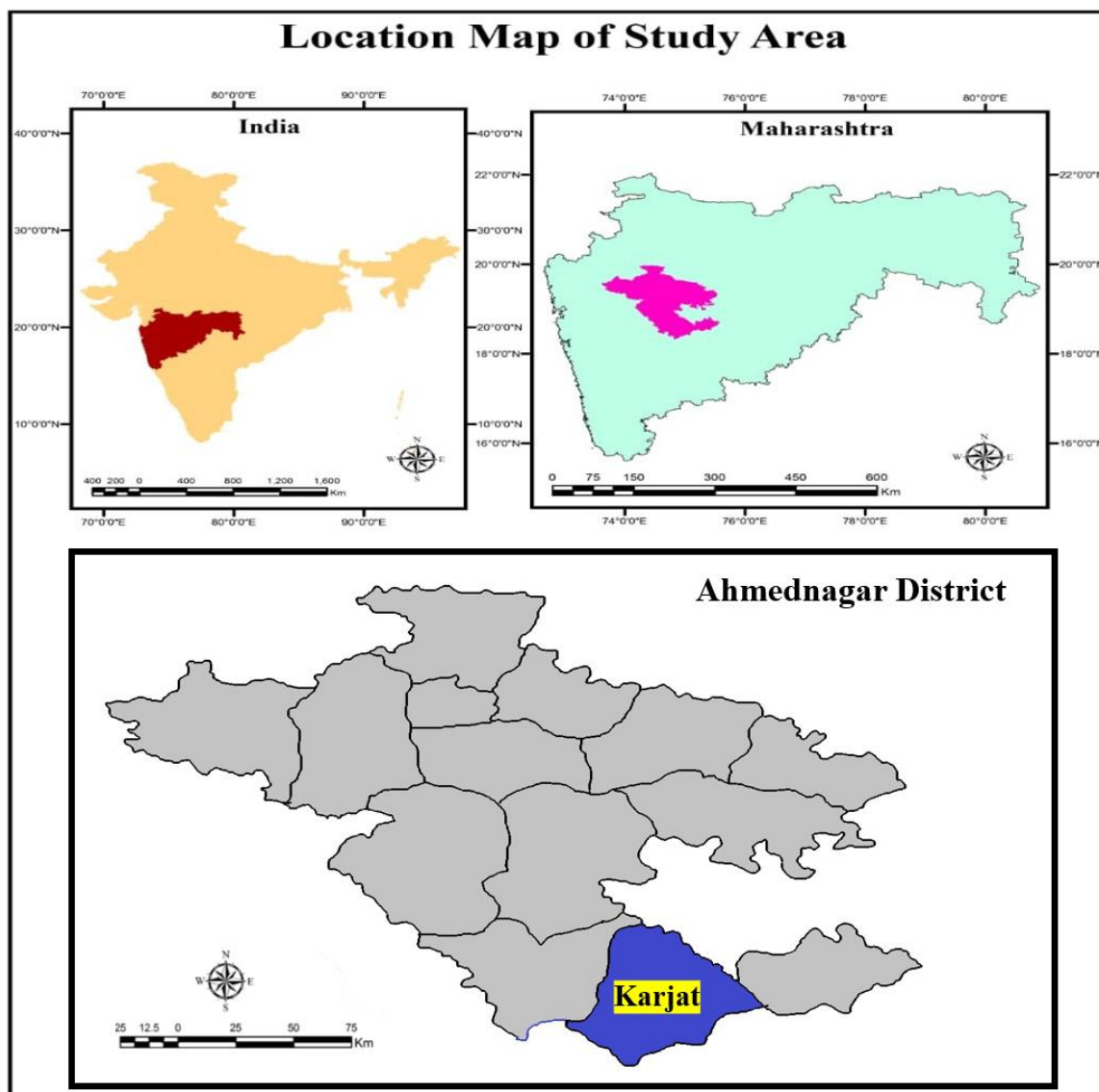
wetlands and each with rich and unique floristic diversity. The India Flora is consisting of 47513 plant species of all groups and 18117 flowering plant species (Arisdason *et al.*, 2016). The recent estimate accounts a total of 17926 species of angiosperms in the India (Singh *et al.*, 2014). The angiosperms have traditionally been divided into two groups, the monocotyledons and dicotyledons. Dicotyledons also display a number of other characteristics that distinguish them from Dicotyledons. These include differences in leaf venation, single cotyledon in embryo and various kinds of underground stems. Monocotyledon under Poaceae family is the largest in India being represented by 263 genera and 1291 species followed by Orchidaceae represented by 184 genera and 1229 species (Mohan,1984). The economically monocotyledon are most important organisms on earth. The majority of monocotyledon species used in agricultural field for our foods. These monocotyledon groups include some of the largest and most familiar groups of plants, including orchids, lilies, palms, agaves and grasses.

The present survey deals with the floristic diversity of Karjat tahsil of Ahmednagar district, i.e., enumeration of monocot species in the study area. The present study attempts to highlight the diversity of monocot plant resource in a conservation perspective has and to document the diversity of monocot flora in Karjat tahsil. The survey was focused on the only flowering plants of monocotyledonous of the Karjat tahsil, which form an important part of vegetation, food, fodder and contribute significantly to the diversity of monocot and no works have published on monocot flora in this area. So, the present work has been undertaken to invent the monocot plant diversity in Karjat tahsil of Ahmednagar district.

MATERIALS AND METHODS:

Collection and Identification: The present study was carried out in Karjat tahsil located as south region of Ahmednagar district at 18°19'86" N to 18°49'86" N latitude and 74°43' 20" E to 75°13'20" E longitude having a total area of 1,440 km². The Karjat tahsil is drought prone with less average rainfall. There is extreme temperature in summer around 40° and typically range between 38 and 45 °C. Lows during winter season are around 23 °C to 29 °C. Frequent Survey and exploration were undertaken covering the growth during rainy, winter & summer season in 2017 to 2020. The plant samples were collected on morphological and reproductive characters bases. List of monocotyledons specimens was identified and confirmed with help of The Flora of the

Presidency of Bombay Vol. III T. Cooke (1908 and 1958, Repr.ed.), Hooker's Flora of British India (1875), Flora of Kolhapur district (Yadav *et al*, 2002), Flora of Baramati (Bhagat, *et al* 2008), The flora of Khandala (Santapau, 1966) and referring all the available literature, and Department of Botany Dada Patil Mahavidyalaya, Karjat.



RESULTS:

In the present work, authors have provided information on the monocotyledonous plant species diversity from Karjat Tahsil of Ahmednagar, Maharashtra, India for the first time. A total of 66 monocotyledonous plant species have been recorded. A total number of 66 plant species under 20 families of monocotyledonous were reported from Karjat tahsil of Ahmednagar of Maharashtra. The dominant families of poaceae (21 species), Commelinaceae (10 species), Araceae (8

species), Asparagaceae (5 species), Arecaceae (4 species each), Zingiberaceae (3 species), Cyperaceae and Alliaceae (2 species each) and remaining eleven families contribute one species- Zannichelliaceae, Typhaceae, Strelitziaceae, Musaceae, Hydrocharitaceae, Heliconiaceae, Dioscoreaceae, Colchicaceae, Cannaceae, Asphodelaceae, Amaryllidaceae. Details of the recorded 66 plant species in the botanical name and their Family Table-1. Nowhere else in the study area poaceae and followed by Commelinaceae and Araceae family comprise a significant floristic component. Most of the families have only a single species in study area.

Table 1.: Checklist of monocot plant species in Karjat tahsil of Ahmednagar district (MH) India

Sr. No.	Botanical name	Family
1	<i>Agave sisalana</i> Perrine	Asparagaceae
2	<i>Aglaonema commutatum</i> Schott.	Araceae
3	<i>Allium cepa</i> L.	Alliaceae
4	<i>Allium sativum</i> L.	Alliaceae
5	<i>Alloteropsis cimicina</i> C. Pres.	Poaceae
6	<i>Alocasia cuculata</i> L.	Araceae
7	<i>Alove vera</i> (L.) burm. f.	Asphodelaceae
8	<i>Anthurium andraeanum</i> Linden.	Araceae
9	<i>Apluda mutica</i> L.	Poaceae
10	<i>Arachne racemosa</i> Wright & Arn.	Poaceae
11	<i>Aristida funiculate</i> L.	Poaceae
12	<i>Arthraxon hispidus</i> Thunb.	Poaceae
13	<i>Arundo donax</i> L.	Poaceae
14	<i>Asparagus racemosus</i> Willd.	Asparagaceae
15	<i>Bambusa arundinacea</i> L. (Voss.)	Poaceae
16	<i>Bulbosylis barbata</i> Sw.	Poaceae
17	<i>Caladium bicolor</i> Alton.	Araceae
18	<i>Canna indica</i> L.	Cannaceae
19	<i>Caryota urens</i> L.	Arecaceae
20	<i>Chloris barbata</i> Sw.	Poaceae
21	<i>Chrysopogon fulvus</i> Spreng.	Poaceae
22	<i>Cocos nucifera</i> L.	Arecaceae
23	<i>Colocasia esculenta</i> L.	Araceae
24	<i>Commelina benghalensis</i> L.	Commelinaceae
25	<i>Commelina diffusa</i> Burm. F.	Commelinaceae
26	<i>Commelina erecta</i> L.	Commelinaceae
27	<i>Crinum latifolium</i> L.	Amaryllidaceae
28	<i>Curcuma longa</i> L.	Zingiberaceae
29	<i>Cyanodon dactylon</i> L.	Poaceae
30	<i>Cyanotis cristata</i> L. D. don.	Commelinaceae
31	<i>Cyanotis fasciculata</i> Heyne ex Roth.	Commelinaceae

32	<i>Cyanotis tuberosa</i> (Roxb.) Schult.	Commelinaceae
33	<i>Cymbopogon citratus</i> (DC.) Stapf.	Poaceae
34	<i>Cyperus rotundus</i> L.	Poaceae
35	<i>Dioscoria alata</i> Schott	Dioscoreaceae
36	<i>Dieffenbachia seguine</i> (Jacq.) Schott.	Araceae
37	<i>Dracaena deremensis</i> Eng.	Asparagaceae
38	<i>Elettaria cardamomum</i> (Linnaeus) Maton	Zingiberaceae
39	<i>Fimbristylis dichotoma</i> . L. (Vahl.)	Cyperaceae
40	<i>Heliconia bihai</i> Burm. F.	Heliconiaceae
41	<i>Heteropogon contortus</i> L.	Poaceae
42	<i>Hydrilla verticillata</i> (L.F.) Royle	Hydrocharitaceae
43	<i>Iphigenia indica</i> L.	Colchicaceae
44	<i>Kyllinga bulbosa</i> Rottb.	Cyperaceae
45	<i>Monstera deliciosa</i> Liebm.	Araceae
46	<i>Musa paradisiaca</i> L.	Musaceae
47	<i>Pennisetum glaucum</i> (L) R. Br.	Poaceae
48	<i>Pennisetum purpureum</i> Schum. Beskr.	Poaceae
49	<i>Phoenix sylvestris</i> L. (Roxb.)	Arecaceae
50	<i>Polianthes tuberosa</i> L.	Asparagaceae
51	<i>Ravenala madagascariensis</i> Sonn.	Strelitziaceae
52	<i>Rhoeo discolor</i> L.	Commelinaceae
53	<i>Roystonea regia</i> Kunth.	Arecaceae
54	<i>Saccharum officinarum</i> L.	Poaceae
55	<i>Sansevieria portulacastrum</i> L.	Asparagaceae
56	<i>Sorghum vulgare</i> Moench.	Poaceae
57	<i>Sporobolus subtilis</i> R. Br.	Poaceae
58	<i>Syngonium auritum</i> Schott.	Araceae
59	<i>Tonningia axillaris</i> Roxb.	Commelinaceae
60	<i>Trachycarpus fortunei</i> H. Wendl.	Commelinaceae
61	<i>Tradescantia pallida</i> (Rose) D.R.Hunt.	Commelinaceae
62	<i>Triticum aestivum</i> L.	Poaceae
63	<i>Typha angustifolia</i> L.	Typhaceae
64	<i>Zannichellia palustris</i> L.	Zannichelliaceae
65	<i>Zea mays</i> L.	Poaceae
66	<i>Zinziber officinale</i> (Rose) D.R.Hunt.	Zingiberaceae

CONCLUSION:

1. The present survey is important to understand the monocot plants in Karjat tahsil of Ahmednagar district, which provides a preliminary checklist of plants
2. This data provides information about diversity and adaptability of the monocots of Karjat tehsil region.
3. It will also be helpful in suggesting suitable staple food providing monocots from the study area.
4. It will also be useful to government and nongovernment bodies for the proper conservation of flora and fauna present in the Karjat tahsil of Ahmednagar district.



Agave sisalana Perrine



Aloe vera (L.) burm. f.



Canna indica L.



Commelina erecta L.



Cyanotis cristata L. D. don.



Cyperus rotundus L.



Tradescantia pallida (Rose) D.R.Hunt.



Typha angustifolia L.

PHOTO PLATE: 1

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