

Survey of Members of Family Asteraceae in Daund Tahsil from Pune District (M.S.), India.

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ABSTRACT

The regional floristic studies are very important and it can be achieved by exploration of smaller areas. This is useful in the revision of existing flora. The present work based upon the exploration and survey of members of family Asteraceae in Daund Tahsil from Pune district. Daund Tahsil lies in Pune district of Maharashtra state, India.. This region extent from 18° 18' to 18 ° 41' North Latitude and 74 ° 07' to 74 ° 51' East Longitude, covering an area of 1289.86 Sq. Km. (128986 ha.) according to 2011 census. The average height of the study area is 554 meters from mean sea level. This region experience semi-arid climate. Frequent study tours were conducted within the study area during the year 2012-2015 for the collection and documentation of members of family Asteraceae. Plant exploration was conducted to determine plant species of family Asteraceae . The present paper deals with the 43 species belonging to 35 genera of family Asteraceae recorded from Daund Tahsil. Majority of the members are herbs.

Key words: Asteraceae, Survey, Daund Tahsil.

INTRODUCTION:-

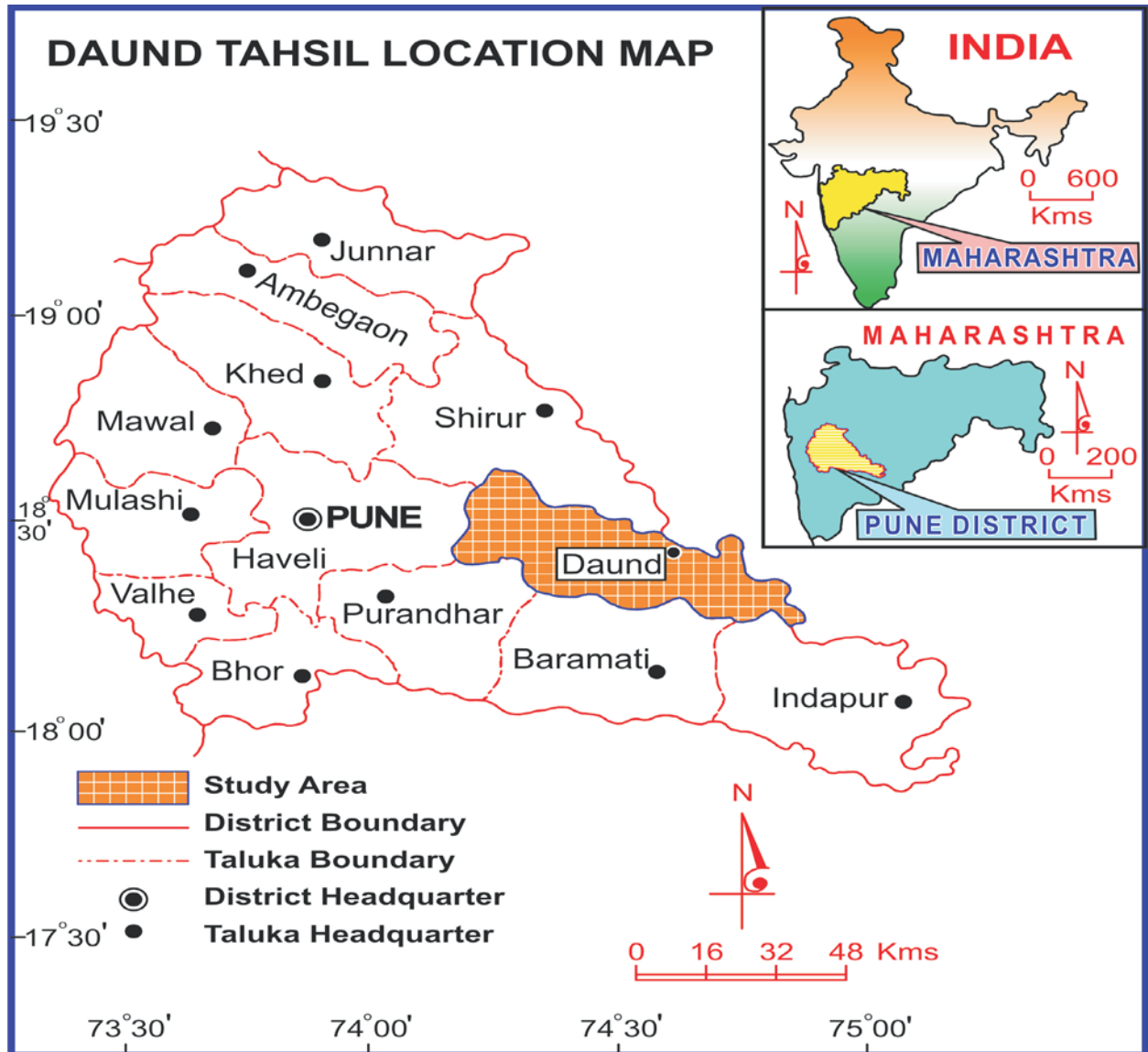
Asteraceae or Compositae family is also known as daisy family, sunflower family or thistle family. This is the largest family of the flowering plants with more than 24000 - 30000 species and 1600 - 1700 genera (Funk *et. al*, 2005) worldwide and inhabit almost every environment and continent except Antarctica. In India the family is represented by 900 species under 167 genera. Asteraceae taxa can assume almost every life-form viz. annual, biennial or perennial herbs, undershrubs, shrubs, a few trees, some scramblers and aquatics. The name Asteraceae is derived from the term Aster means *composite* and refers to the characteristic inflorescence – have flower heads composed of many small flowers, called florets, and are surrounded by bracts. Asteraceae are cosmopolitan, but most common in the temperate regions and tropical mountains.

Daund Tahsil lies in Pune district of Maharashtra state (India), situated on the margins of Bhima River. Daund Tahsil consists of 102 villages and one urban centre. Geographically this region extends from 18° 18' to 18 ° 41' North Latitude and 74 ° 07' to 74 ° 51' East Longitude, covering an area of 1289.86 Sq. Km. (128986 ha.) according to 2011 census (Map-1). The average height of study area is 554 meters from mean sea level. East –West distance is 75 Km. and 45 Km. wide .The river Bhima and its tributary rivers Mula-Mutha are dominating drainage pattern in study region.

The earlier studies, on the survey of members of family Asteraceae have been made by different workers (Gajen Chandra Sarma, & R. C. Borah., 2012, Hajra P.K., Rao R.R., Singh D.K. and Uniyal B.P. (1995), Maitreya, B.B., 2015, Patil, M.B., 2015. , Rao, R.R. *et al*.1988. , Vinod Kumar Bisht & Veenit Purohit., 2010) from different parts of India.

Map-1

Geographical location of Pune District in Maharashtra State (India) and Daund Tahsil Pune district.



MATERIAL AND METHODS:-

The exploration of the area under study includes the planned study tours to various places for collection of different members of family Asteraceae. It was carried out during 2012-2015. The random sampling method was adopted for this study to note down the presence of various species of Asteraceae throughout the study area. Several field tours were made to cover the entire Daund Tahsil during monsoon, winter and summer seasons. Collections were made from wide range of agricultural fields, marshy places, forest areas, waste places etc. Notes were written on Habit, Habitat, flower color, flowering and fruiting period, uses if any and general distribution.

After completing the plant specimen collection from study area, herbariums of collected specimens were prepared (Jain, S. K. & Rao, R. 1960). The specimens were identified by comparing with the authentic specimens of Botanical survey of India. Western circle, Pune; Herbarium of

Department of Botany, Savitribai Phule Pune University Pune. Later these identifications were checked with the help of flora's, monographs and relevant published literature. Each specimen was studied and identified using the 'Flora of British India'. (Hooker, J. D. 1872-1897); 'Flora of Presidency of Bombay' (Cooke, T. 1901-1908; Repr.1958.); 'The Grasses of Burma, Ceylon, India and Pakistan' (Bor, N.L.1960); Flora of Maharashtra State – Dicotyledones (Vol-1) (Singh, N. P. *et al.* 2000); Flora of Maharashtra State – Dicotyledons Vol-2. (Singh, N. P. *et al.*, 2001); 'Flora of Maharashtra State – Monocotyledons'. (Sharma, B. D. 1996); 'Flora of Baramati' (Bhagat, R.B.*et al.*, 2008); 'Flora of Purandhar' (H. Santapau, 1961) etc. Herbarium specimens are deposited in the Department of Botany, Savitribai Phule Pune University, Pune.

RESULTS AND DISCUSSION:

The present investigation revealed that the total 43 species belonging to 35 genera of family Asteraceae are recorded in Daund Tahsil from Pune district, Maharashtra State, India. (Table-1). During the work genus *Tagetus* is dominant genus among members consisting three species followed by (*Ageratum*, 02 species) and (*Vernonia* , 02 species). The diversity in Asteraceae members are also analyzed with respect to habit diversity. The results revealed that the members are dominated by herbaceous habit with 42 species (97.67 %) and only one species *Parthenium hysterophorus* Linn. is undershrub. The dominant species among all the members of family Asteraceae of the study area is *Parthenium hysterophorus* Linn. which is common weed in cultivated as well as waste lands and marshy places. The other common and aggressive weed species are *Ageratum conyzoides* L., *Emilia sonchifolia* (L.) DC, *Flaveria trinervia* (Spreng.) C, *Lagascea mollis* Cav, *Launaea procumbens* (Roxb.) Ramayya & Rajgopal, *Sonchus asper* (L.) Hill., *Vernonia divergens* (Roxb.) Edg., *Xanthium indicum* Koen. in Roxb. etc.

Some members of family Asteraceae like *Launaea procumbens* (Roxb.) Ramayya & Rajgopal, *Tridax procumbens* L., *Vernonia cinerea* (L.) Less etc. are having medicinal utilities. The plant species *Helianthus annuus* L, *Carthamus tinctorius* L are cultivated as oil yielding crops by the farmers while *Aster amellus* L., *Cosmos bipinnatus* Cav, *Tagetus* species, *Dahlia pinnata* Cav., *Solidago canadensis* L, *Gaillardia aristata* Pursh, etc are also cultivated for its flowers. The plants species *Caesulia axillaries* Roxb. and *Synedrella vialis* (Less.) A. Gray are common in marshy places.

Parthenium hysterophorus Linn. is distinctively found along roadsides and railway tracks, and becoming an obnoxious weed. One of the important features of the plants under the family in the study area is that, they are mostly found outside the forest areas. The species mostly found in the forests of the tahsil are *Ageratum conyzoides* and *Blumea lacera* , but they are also found outside the forests. Therefore, all the members under Asteraceae in the study area are encountered outside the forests and mostly they are in open areas at the margins of forests, wetlands, waste places and river banks, also as weeds in the cultivated areas.

The present information of survey of members from family Asteraceae in Daund Tahsil from Pune district (M.S.), India is an important investigation and has applied significance in effective weed management and crop yield improvement process. The survey of members of family Asteraceae work at regional level would be a good source of importance on technical and taxonomic data. There is need to conduct proper study on the control of the population of some weed species within a plant population of family Asteraceae as well as their medicinal utilities.

TABLE-1 -LIST OF SURVEYED PLANT SPECIES OF FAMILY ASTERACEAE -

Sr. No	Botanical Name	Local Name (In Marathi)	Habit	Flower color	Fl.& Fr. Period
1	<i>Acanthospermum hispidum</i> DC.	---	H	Y	Aug-Feb.
2	<i>Ageratum conyzoides</i> L.	Sahdevi,Osadi	H	B/P	Aug-apr
3	<i>Ageratum houstonianum</i> Mill.,	---	H	B/P	Aug.-Apr.
4	<i>Aster amellus</i> L.	---	H	B/PR/Y	Aug.-Dec
5	<i>Bidens biternata</i> (Lour.) Merr. & Scherif.	Chikta	H	W/Y	Aug.-Oct
6	<i>Blumea lacera</i> (Burm.f.) DC.	---	H	Y	Dec.-May
7	<i>Blumea solidaginoides</i> (Poir.)DC.	---	H	PR	Dec.-Jan.
8	<i>Caesulia axillaries</i> Roxb.	'Maka.'	H	W/PR	Aug.-Feb.
9	<i>Carthamus tinctorius</i> L	'Kardai,Kardi'	H	Y/O/R	Nov.-Feb
10	<i>Cosmos bipinnatus</i> Cav	---	H	P	Aug.-Nov.
11	<i>Cyathocline purpurea</i> (Buch.-Ham. ex D. Don.) O. Ktze.	---	H	P/PR/W	Nov.-Mar.
12	<i>Dahlia pinnata</i> Cav.	---	H	Y	Aug.-Dec
13	<i>Echinops echinatus</i> Roxb.	Utkatari'	H	W	Nov.-Mar
14	<i>Eclipta prostrata</i> (L.) L.	'Maka'	H	W	Throughout year.
15	<i>Emilia sonchifolia</i> (L.) DC	'Sadmandi'	H	PR	Aug.-Dec.
16	<i>Flaveria trinervia</i> (Spreng.) C	'Bajirao'	H	Y	Mar.-Apr.
17	<i>Gaillardia aristata</i> Pursh,	---	H	Y/R	Nov.-Mar.
18	<i>Gaillardia pulchella</i> Foug.	---	H	Y	Nov.-Mar.
19	<i>Glossocardia bosvallea</i> (L.f.) DC.	'Pittapapada.	H	W	July-Dec.
20	<i>Gnaphalium luteo-album</i> L.	---	H	W	Jan.-Mar.
21	<i>Guizotia abyssinica</i> (L.f.) Cass.	Karale	H	Y	Sept.-Dec.
22	<i>Helianthus annuus</i> L	'Suryaphul'	H	Y	Sept.-Jan.
23	<i>Lagascea mollis</i> Cav	---	H	W	Throughout year.
24	<i>Laggera alata</i> (D. Don.) Sch.	---	H	W	Dec.-Feb.
25	<i>Launaea intybacea</i> (Jacq.) Beauv.	---	H	Y	Nov.-Jan.
26	<i>Launaea procumbens</i> (Roxb.) Ramayya & Rajgopal	Pathri.	H	Y	Oct.-Feb
27	<i>Parthenium hysterophorus</i> L	Congress, Gajar-gavat.'	US	W	Sept.-Feb.
28	<i>Pulicaria wightiana</i> (DC.) Cl.	---	H	Y	Oct.-Nov.
29	<i>Senecio bombayensis</i> Balakr.	'Sonki.'	H	Y	Aug.-Dec.
30	<i>Solidago canadensis</i> L	Sonkadi'	H	Y	Nov.-Dec.
31	<i>Sonchus asper</i> (L.) Hill.	'Mhatari.'	H	W	June-Oct
32	<i>Sonchus oleraceus</i> L.	'Mhatari.'	H	W	Sept.-Feb.

33	<i>Spheranrhus indicus</i> L.	'Gorakhmundi.	H	PR	Nov.-Mar.
34	<i>Acmella paniculata</i> (Wall. Ex DC.) R.K.	Akkalkara'	H	Y	Aug.-Feb.
35	<i>Synedrella vialis</i> (Less.) A.Gray	---	H	W	Throughout year.
36	<i>Tagetes erecta</i> L	Zendu'	H	Y	Aug.-Feb.
37	<i>Tagetes tenuifolia</i> Cav.,	Zendu'	H	Y	Aug.-Dec.
38	<i>Tagetes patula</i> L	Zendu'	H	Y	Aug. -Jan.
39	<i>Tricholepis amplexicaulis</i> DC	---	H	BR	Oct.-Feb.
40	<i>Tridax procumbens</i> L.	'Ekdandi, Kutkuti, Dagadi Pala	H	W/Y	Throughout year.
41	<i>Vernonia cinerea</i> (L.) Less	Sahadevi.	H	P/PR	Throughout year.
42	<i>Vernonia divergens</i> (Roxb.) Edg.	---	H	PR	Sept.-May
43	<i>Xanthium indicum</i> Koen. in Roxb.	'Landga, Vinchu.'	H	W	Sept-Nov

ABBREVIATIONS:-

(Y- Yellow, B- Blue, P- Pink, W- White, O- Orange, R- Red, PR- Purple, BR- Brown)

(T-Tree, S-Shrub, US-Undershrub , H-Herb , Cl-Climber , Tw-Twiner ,)

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