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Survey And Documentation Of Members Of Family Fabaceae In Chitradurga, Karnataka

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Abstracts:

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 Fabaceae in Chitradurga, Karnataka, India. Frequent field visits were conducted within the study area during the year 2021-2022 for the collection and documentation of members of family Fabaceae. Plant exploration was conducted to determine plant species of family Fabaceae. The present study deals with the 39 species belonging to 27 genera of family Fabaceae were recorded from Chitradurga.

Key words: Survey, Documentation, Fabaceae Chitradurga

Introductions:

This is the third largest family of the flowering plants with more than 765 genera and 20,000 species after Orchidaceae and Asteraceae (Funk *et. al*, 2005, Aitawade et al., 2012), worldwide and inhabit almost every environment and continent except Antarctica. So the family Fabaceae sub divided in to three sub families such as Papilionaceae Caesalpiniaceae and Mimoseae. In India, there are about 147 genera, 805 species, 33 subspecies, 155 varieties and 14 forma of legumes (Sanjappa 1991, Sanjappa 1995; Dave 2004; Chaudhary and Khan 2005; Ansari 2008; Jabbar et al. 2010; Aitawade et al. 2012; Chavan et al. 2013; Gaikwad et al. 2014d). It includes trees, shrubs, and perennial or annual herbaceous plants. In socioeconomic terms, their importance for health and human alimentation is highlighted, although they also provide food, wood resources and dyes, resins, insecticides, fibres, fodder, and so forth (Parodi 1978, Isely 1982, Sprent 2009, Wojciechowski et.al., 2004).

Material and Methods:

We selected Chitradurga which is located almost in central part of Karnataka, occupies an areas of 1,078,000 hectares, it lies between 75°40'-77°00' East latitude and 15°00'-16°30' north longitude.

The exploration of the area under study includes the planned visits to various places for collection of different members of family Fabaceae. It was carried out during 2022-2023. The random visiting was adopted for this study to note down the presence of various species of Fabaceae throughout the study area. Several field visits were made to cover the entire Chitradurga during monsoon, winter and summer seasons. Notes were written on Habit, Habitat, flower color, flowering and fruiting period, uses if any and general distribution. Collections were made from wide range of places of Chitradurga. After collection from study area, herbariums of collected specimens were prepared (Jain & Rao, 1960). Plants were collected and identified with the help of local flora and other relevant literature (Cooke, 1967; Bhat, 2003; Swaminathan & Kochhar, 2003, Hooker, 1872-1897, Bor, 1960, Singh, *et al.* 2000, Singh, *et al.*, 2001).

Results and discussion

The preliminary data on presence of various species of Fabaceae in Chitradurga was investigated. The present investigation revealed that the total 39 species belonging to 27 genera of family Fabaceae are recorded in Chitradurga **Table-1**. During the work *Cassia* is a dominant genus among members consisting 06 species, followed by *Bauhinia* 04 species and *Caesalpinia* 02 species. The diversity in Fabaceae members are also analyzed with respect to habit diversity. The results revealed that the members are dominated by tree habit with 26 species (66.66 %) and followed by Shrub with 6 species (15.38%) and climbers with 4 species (10.25%). Remaining are comprises only one species. The dominant species among all the members of family Fabaceae of the study area are *Pongamia pinnata* and *Samanea saman* which are common and is distinctively found in the study area. The other common species are *Bauhinia variegata*, *Caesalpinia pulcherrima*, *Clitoria ternatea*, *Crotalaria juncea*, *Delonix regia* and *Pithecellobium dulce*.

Majority members of family Fabaceae are having medicinal utilities. The plant species *Pongamia pinnata* yields oil from seeds. The plants species like *Cassia alata*, *Cassia tora*, *Clitoria ternatea*, *Crotalaria juncea*, *Mimosa pudica* and *Tephrosia purpurea* are common in road sides and waste lands places. The present information of survey of members from family Fabaceae in Chitradurga Karnataka is an important investigation and work at regional level would be a good source of importance on technical and taxonomic data.

Table 1: List of Fabaceae members documented in study area.

1	2	3	4	5
Sl No	Scientific name	Family	Local Name	Habit
1	<i>Abrus precatorius</i>	Papilionaceae	Guluganji	Climbers
2	<i>Acacia auriculiformis</i>	Mimoseae	Acacia	Tree
3	<i>Acacia catechu</i>	Mimoseae	Catachu	Tree
4	<i>Acacia farnesiana</i>	Mimoseae	Kasturijali	Tree
5	<i>Acacia nilotica</i>	Mimoseae	Acacia	Tree
6	<i>Adenantha pavonina</i>	Mimoseae	Gulugunji mara	Tree
7	<i>Albizia lebbek</i>	Mimoseae	Bage	Tree
8	<i>Bauhinia malabarica</i>	Caesalpiniaceae	Amli	Tree
9	<i>Bauhinia purpurea</i>	Caesalpiniaceae	Mandara	Tree
10	<i>Bauhinia tomentosa</i>	Caesalpiniaceae	Mani Mandara	Tree
11	<i>Bauhinia variegata</i>	Caesalpiniaceae	Kachnar	Tree
12	<i>Butea monosperma</i>	Caesalpiniaceae	Muttuga	Tree
13	<i>Caesalpinia bonduc</i>	Caesalpinaceae	Gajjuga	Climber
14	<i>Caesalpinia pulcherrima</i>	Papilionaceae	Rathnagandhi	Tree(Small)
15	<i>Cassia alata</i>	Caesalpinaceae	Dadmurdan	Shrub
16	<i>Cassia auriculata</i>	Caesalpinaceae	Nelathangadi	Shrub
17	<i>Cassia fistula</i>	Caesalpinaceae	Kakkemara	Tree(Small)
18	<i>Cassia mimosoides</i>	Caesalpinaceae	Nelthangte	Shrub
19	<i>Cassia siamea</i>	Papilionaceae	Cassia	Tree
20	<i>Cassia tora</i>	Caesalpinaceae	kattikai	Herb
21	<i>Clitoria ternatea</i>	Caesalpinaceae	shankha pushpi	Climber
22	<i>Crotalaria juncea</i>	Papilionaceae	Crotalaria	Shrub
23	<i>Dalbergia latifolia</i>	Papilionaceae	Beete	Tree
24	<i>Delonix regia</i>	Papilionaceae	May flower/	Tree
25	<i>Dichrostachys cinerea</i>	Caesalpinaceae	Banni	Tree
26	<i>Erythrina variegata</i>	Papilionaceae	Halivana	Tree
27	<i>Gliricidia sepium</i>	Papilionaceae	Gobbaramara	Shrub
28	<i>Indigofera aspalathoides</i>	Papilionaceae	Koggligida	Shrub
29	<i>Leucaena leucocephala</i>	Mimoseae	Wild Tamarind	Tree
30	<i>Mimosa pudica</i>	Mimoseae	Muttidare muni	Herb
31	<i>Mucuna pruriens</i>	Papilionaceae	Nasagunni	Climber
32	<i>Peltophorum pterocarpum</i>	Caesalpinaceae	Gulmohur	Tree
33	<i>Pithecellobium dulce</i>	Caesalpinaceae	Sihi hunese	Tree
34	<i>Pongamia pinnata</i>	Papilionaceae	Honge	Tree

35	<i>Samanea saman</i>	Papilionaceae	Rain tree	Tree
36	<i>Saraca indica</i>	Papilionaceae	Ashoka	Tree
37	<i>Sesbania grandiflora</i>	Papilionaceae	Agase	Tree
38	<i>Tamarindus indica</i>	Caesalpiniaceae	Hunese	Tree
39	<i>Tephrosia purpurea</i>	Papilionaceae	Koggligida	Herb

TABLE-2: HABIT OF THE PLANTS USED IN TRADITIONAL MEDICINE

Sl. No	Habit	Number of plants	Percentage
1	Herbs	3	7.69
2	Shrubs	6	15.38
3	Trees	26	66.66
4	Climber	4	10.25

TABLE-3: SUB-FAMILY DISTRIBUTION OF PLANTS IN TREATMENT

Sl. No	Sub-family	Number of plants	Percentage
1	Papilionaceae	15	38.46
2	Caesalpiniaceae	16	41.02
3	Mimoseae	08	20.51

Conclusion

The *Fabaceae* family is the most varied and cosmopolitan family of flowering plants. Many of its species have been used in traditional medicine since ancient times. Nowadays, the growing need for more natural sources of medicine has driven scientific interest towards the *Fabaceae* family. In this work aimed to documentation and identification of members of *Fabaceae*. The preliminary study of Chitradurga comprises of about 39 species, 27 genera. This documentation of members of *Fabaceae* provides a catalogue of useful plants and will serve as a physical record for the education of the future generation.. This study can also serve as baseline knowledge for future functional bioactivity screening of plants. This study also points out that certain species of medicinal plants are being exploited by the local residents who are unaware of the importance of medicinal plants in ecosystem.

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