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The Study of Plant Diversity of SRR Government Arts & Science College Campus, Karimnagar, Telangana, India

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Abstract:
Plant Systematics is a great discipline for identification of the different plant species.This provides the basic information about the different plant species. In the present study ,a total of 180 species representing 163 genera belonging to 58 families have been recorded. Among these 50 families, 145 genera and 160 species belong to Dicotyledons. The Monocotyledons comprise 08 families and 18 genera and 20 species. The ratio of genus species is 1:1.1 and the ratio of monocotyledons to dicotyledons is 1:6.1. Of the 58 families collected ,the most dominant family is Fabaceae (Leguminaceae) with 27 species .The availability and distribution of individual plant species has been observed carefully for its future sustainable utilization. The majority of the plants found from this campus area are possessing the medicinal value.
Key words: Flora, Fabaceae, Biodiversity, SRR Govt. Arts & Science college campus, Telangana**.**

Introduction:
India, a land of Physical, cultural, social and linguistic diversity endowed by nature with enormous biological diversity. As a result India ranks amongst one of the 12 mega biodiversity countries of the world and consists of 17,000 flowering plant species. It accounts for 8%of the global Biodiversity with only 2.4% of the total land area in the world[1,2]. Here is an attempt to cover the plant biodiversity from this point of view so as to provide information about the plants according to their current status. Taxonomy is the science of the description and classification of organism, essential in theoretical and applied biology[3].

Sri Raja Rajeshwara Govt. Arts & Science College is one of the biggest college in Telangana state, India and it is established in year 1956 and it is located in 26 acres land. This is first Govt. Degree college in north Telangana region. It is located at Jagtial road in Karimnagar Town ,Karimnagar district ,Telangana ,India. Karimnagar town is located at the bank of Manair Reservoir and recently it is elected as smart city by central Govt .of India. Plants represent one of the important element of biodiversity, thus the knowledge of plant species found in the different areas of the world is a pre –requisite to conserve the ecological biodiversity. It helps us to understand the overall structure and function of an ecosystem. For this reason accurate and precise information of the known plant species from a given area is essential. The information is important as it allows us to prevent or avoid the potential chances of biodiversity loss and to plan future policy for the protection of our environment. Taxonomy is "an integral component of biodiversity protection ,remediation and eco development"[4]. The present study aims to highlight the plant diversity of SRR Govt. Arts & Science college, Karimnagar, Telangana state from taxonomic point of view, which in turn will

provide important source for use in various other fields of biology in general and botany in particular.

Materials & Methods:

The flora is observed based on general survey of the vegetation on repeated seasonal collections of plant specimens from this college campus in flowering and fruiting stages. Regular field visits were conducted in different seasons to find out the various plant species. In this survey different plants observed were grown as Herbs, shrubs and trees during the years of 2015 -2017 . All the available plant specimens in this campus were collected and herbarium was prepared by the following the method of Jain & Rao[5]. The collected plant specimens were identified authentically with the help of standard protocol [6,,7,8]. All the studied plant species have been arranged alphabetically, along with their family, binomial and vernacular names. In this present study the families are arranged according to Bentham–Hooker's system of classification[9].

Results :

In this present study, a total of 180 species representing 163 genera belonging to 58 families have been reported. Among these , 50 families with 89%, 145 genera with 92 % , and 160 species with 86 % are Dicotyledons. The Monocotyledons represented 08 families with 11.2 % ,18 genera with 13.7 %, 20 species with 11.2 %. The ratio of genera and species is 1:1.1 and the ratio of monocotyledons and Dicotyledons is 1:6.2 . In this study , out of 58 families ,The most dominant family is Fabaceae (Leguminaceae) with 27 species and followed by Asteraceae with 12 species, Euphorbiaceae are with 11 species, Mimosaceae with 8 species ,Asclipiadaceae, Acanthaceae and Cyperaceae each of these families has 7 species ,Malvaceae, Amaranthaceae with 6 species Rutaceae ,Rubiaceae and Apocynaceae are with 5 species. It is observed that this flora has been distributed in 26 acres area of land of SRR Govt.Arts & Science College ,karimnagar ,telangana ,India.

Discussion:

In this campus study, the distribution of individual plant species and their availability has been observed carefully for its future sustainable utilization. This study clearly indicated that majority of the flora of Karimnagar district belongs to Fabaceae (Leguminaceae)[10]. Majority of the plants have medicinal properties and are used as medicines for major diseases. These herbs are predominantly used to treat cardiovascular problems, liver disorders, nervous disorder, digestive disorders and metabolic disorders. Now a days, Herbal medicines play a fundamental role in traditional medicine where the plants commonly used as therapeutic agents , anti inflammatory ,antiseptic and in other dermal infections. It had been suggested that vegetables ,fruits, and plant products have possessed a large variety of substance called Phytochemicals. These phytochemicals are the rich source of antioxidant in the diet and reduce the potential stress caused by reactive oxygen species.[11,12.] Many natural plants are locally used as primary health medicines due to their pharmaceutical properties in Asia ,Latin America and Africa. Traditional medicines using plant extracts have continued to provide health coverage for over 80 % of the world's population of developing countries.[13.]In India Medicinal plants are hugely used by the people either directly as folk medicines or indirectly in pharmaceutical preparations.[14] In India ,a few of presently reported herbs are used as therapeutics in Ayurveda and Siddha ,and has been practiced in Indian traditional system of Medicines. In this study a few of plants are found as endangered so that strict conservational methods should be applied to protect the plant species from becoming rare or endangered .This kind of study helps in protecting the significance ecological balance and economic importance of plants which are being disturbed by rapid rise of population with their increased demand for more utilization of natural resources.

Conclusion:

In this campus flora study,it is found that the plants recorded from the campus area are economically very important. Some of them have medicinal value and some of them have ornamental value and a few belong to edible category. Now a days the usage of plants are increased for medicinal purpose. Hence knowledge of Ethanobotany should be made available for students and faculties. Documentation and herbarium preparations is a

way to get fundamental knowledge of the plant resources and will be helpful for the campus students and faculties for further research.

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Table 1:Plant Divesity of the study area

S.No.	Family /Species	Vernacular names	Habit
1	**ANNONACEAE**		
	Annona squamosa L.f	Seetha phalam	T
	Polyalthia longifolia Sonn.	Naramamidi	T
2	***MINISPERMACEAE***		
	Tinospora cordifolia Willd.	Tippatheega	Tw
3	**MULLUGINACEAE**		
	Mullugo nudicalis L		H
4	**SIMARUBACEAE**		
	Ailanthus excelsa L.	Peddamanu chettu	T
5	**CAPPARACEAE**		
	Cleome viscosa	Vaminta	H
	Cleome gynadra .l	kukkavaminta	H
6	**MALVACEAE**		
	Abutilon indicum L	Tuttura benda	s
	Hybiscus rosa cynensis L	China rose	s
	Hybiscus micranthusL.f.	Nitya malli	S
	Sida cordifolia Mast.		S
	Sida acuta Burm.f.e	Athi bala	S
	Sida rhombofolia L		S
	Triumfetta rhomboidea L.	Diamand burbark	s
7	**MORINGACEAE**		
	Moringa olifera L	Munaga	T
8	**TILIACEAE**		
	Corchorus aestuans L.	Nela beera	H
	Corcorus capsularis L.	Tellanara	H

9	**ZYGOPHY LLACEAE**		
	Tribulus terrestris L.	palleru	H
10	**RUTACEAE**		
	Aegle marmelos L.	Maredu	T
	Murraya koenigii L.	Curry leaf	S
	Murraya panicuta L .	Chinese box	S
	Citrus limon	nimma	T
	Ruta graveolens L	sadapaku	S
11	**MELIACEAE**		
	Azadiracta indica A. Juss	Neem	T
12	**RHAMINACEAE**		
	Zizypus oenoplia (L) Mill.	Pariki chettu	cs
	Ziziphus maurtiana Lam.Ber	Regi chettu	T
	Ziziphus numularia (Burm.f)Jhars	Nela regu	S
13	**ANACORDIACEAE**		
	Mangifera indica L.	Aam	T
14	**FABACEAE**		
	Aeschynomena indica L.	Tella jeeiugu	H
	Butea monosperma Lam	Flame of the forest	T
	Dalbergia sisso L.f	Sisham	T
	Indigofera linnei L.		S
	Tephrosia purpuria L	vempali	S
	Clitoria ternatea Linn.	Sanku pulu	T H
	Heylandia latibrosa L		C
	Pongamia pinnata Pierre	Kanuga	T
15	***CAESALPINACEAE***		
	Cassia fistula L.	Rela	S

	Cassia auriculata L.	Tangedu	S
	Cassia siamiea L.	Sikaya	T
	Cassia oxidentalis L.	kasintha	S
	Cassia tora L.	Cickle senna	H
	Delonix regia Rafin	Turayi	T
	Tamirandus indica L	Chintha	T
	Caesalpinea pulcherima Linn.	Ratna gandhi	T
	Peltophorum pterocarpum (DC)Baker ex Heyne	Rekka chintha	T
	Bahinia vauhlii W&A	Deva kanchanam	T
	Saraka indica Linn.	Ashoka	T

16	**MIMOSOIDAE**		
	Acacia nilotica L	Nallatumma	T
	Acacia arabika (Roxb)Willd.	Tella tumma	T
	Albizia lebbeck L	Dirisena	T
	Pithacolobium dulce Roxb.	Ceema chinta	T
	Prosopis spicigira Linn.	jumbhi	T
	Prosofis juliflora (swartz)(DC)	Sarkaru tumma	T
	Mimosa pudica Linn.	lajjavathi	
	Samanea saman (Jacq)Merr.	Nidra ganneru	T
17	**COMBRITACEAE**		
	Terminalia catappa L.	Indian Almond tree	T
18	**MYRTACEAE**		
	Syzizium cumini L.		T
	Eucalyptus globulus L.	Blue gum	T
	Psidium gujava L.	Amrud	T
19	**LYTHRACEAE**		

	Lasonia inermis L .	Mehandi	S
20	**PUNICACEAE**		
	Punica granetum L.	Anar	Us
21	**CUCURBITACEAE**		
	Coccinia grandis L	Donda	Cl
	Coccinia cordifolia L.		Cl
	Mamordica charentia Linn.	Bitter guard	Cl
22	**CACTACEAE**		
	Opentia dellinii	Nagajemudu	H
23	**APIACEAE**		
	Foeniculum vulgare Mill	sompu	H
	Trachyspermum ammi (Linn)sprangne	Vaamu	H
24	**RUBIACEAE**		
	Ixora coccinia L	Rama bhanam	S
	Mussenda frandosa L		S
	Oldenlandia umbellata L		H
	Hemilia patens Jacq.	Scarlet bush	S
	Gardinia jasminoides	Cap jasmine	S
25	**ASTERACEAE**		
	Eclipta prostrata L.	Gunta galijeru	C
	Parthinium hysterophorus L	Congress grass	S
	Vernonia cinerea L	Cockle bur	H
	Ageratum coenezoides	Goat weed	H
	Tridax procumbens L	Gaddi chamanthi	H
	Sonchus aspera L	Dhavanam	H

	Crysanthimum indicum L	Chamanthi	S

	Echinops echinatus Roxb.	Mullabanthi	H
	Sphaeranthus ibdicus L	Bodasaram	H
	Tagetus patula L	Marigold	S
	Xanthium strumarium L	Marulamathangi	S
	Zinnia elegans Jacq.	Bangala banthi	H
26	**OLEACEAE**		
	Nyctanthus arboristritis L.	Parijatham	T
	Jasminum humile L		S
	Jasminum sambac L.	Malli	S
27	**AMARYLLIDACEAE**		
	Crinum asiaticum L.	Adavi ulli	H
28	**AGAVACEAE**		
	Agave americana L.	Centuary plant	S
29	**CONVOLVULACEAE**		
	Evolvulus alsinoidis L	Vishnukrantha	C
	Ipomea quamoclita L.	Kaashi ratnalu	TH
	Merrimia emarginata Hall. F(Burm.f)	Nallakula theega	H
30	**APOCYNACAE**		
	Catharanthus roseus (L)G.Don	billaganneru	H
	Nerium odoram L.	ganneru	S
	Plumaria alba L.	Devaganneru	T
	Tabernamontana divaricata	Nandi vardhanam	S
	Alstonia scolaris L.	sapthaparni	T
31	**ASCLIPIADACEAE**		
	Holostema ada-kondium Schult.	Bandigurija	c
	Calotropis gigantia (L)R.Br	Racha Jilledu	S
	Calotropis procera (Ait)R.Br.	Nalla jilledu	S

	Gumnema sylvestre R.Br EX Schult.	Podapatri	WC
	Hemidesmus indicus	Sugandhipala	C
	Pergularia demia (fosk)chiv .	Dustapu theega	C
32	***SOLANACEAE***		
	Datura metel L	Tella umentha	H
	Datura inoxia L	Nalla umentha	H
	Physalis minima L	Buddabushada	H
33	***ACANTHACEAE***		
	Ruella tuberosa L.	Sheep potato	H
	Barliria prionatus L.	Mullagorinta	H
	Justicia procumbens L.		H
	Crossandra infundibuliformis L.	Kanakambaram	S

	Andrographis paniculata (Burm)Wall ex nees	Nela vemu	H
	Andrographis echoidis L.		H
34	**EUPHORBIACEAE**		
	Acalypha indica L	kuppi	H
	Croton banplandianum Bill.	Galivana mokka	H
	Euphorbia hirta L	Pachcha botlu	H
	Euphorbia heterophilla L.	Kanakambaramu	H
	Euphorbia antiquoram		S
	Jatropa curcas	Pedda nepalam	
	Jatropa gassipifolia		S
	Phyllanthus niruri Schum & Thonn.	Nela usiri	H
	Pedilanthus tithymaloidis L.	Devils back bone	H
	Phyllanthus raticlatus L.	Pulicheru	S
	Emblica officinalis gaertn	usuri	T

35	***MORACEAE***		
	Ficus bengalencis L.	Marri	T
	Ficus racemosa L.	medi	T
	Ficus religiosa L.	Raavi	T
	Ficus hispida L.f.	bommamedi	S
36	**ROSACEAE**		
	Rosa indica	gulabi	S
37	**HYDROCARITACEAE**		
	Hydrilla verticillata L .f.	Valakada	H
38	**LILIACEAE**		
	Aloe vera (L)Burm.	kalabandha	S
	Asparagus recemosa Wild.	Pilli theegalu	C
39	**PORTULACA CEAE**		
	Portulaka olaracia	Pappu kura	S
40	**ARECACEAE**		
	Cocas nusifera	Cocont tree	T
	Phoenix sylvestris		
41	**COMMALINACEAE**		
	Commalina bengalensis		
	Tradescantia spathacea	Reodiscolor	
42	**LAMIACEAE**		
	Leucas apera (Willd.)	tummi	
	Oscimum sanctum L	tulasi	
	Oscimum basilicum L	ganaptri	
	Hiptis saviolens L	Seema tulasi	
43	**VERBINACEAE**		

	Tectona grandis L	teak	

	Clerodendran inerme (L)Gaertn.	picinika	
	Clerodendron fragrans Hort ex vent	Mysore malli	
	Duranta repens L	Golden dew drop	
	Lantana camara L	Pulikampa	
	Lantana indica L		
	Vitex nigondo L.	nallavaavili	
44	**AMARANTHACEAE**		
	Achyranthus aspera L	Uttareni	
	Amaranthus viridis L	Thota kura	
	Celotia cristata L	pattukuchulu	
	Celotia argentia L	gunuga	
	Aerva laneta L	Pindikura	
	Gomphrena celosioides		
45	**NYCTAGINACEAE**		
	Boerhavia diffusa L.	Atuka mamidi	
	Boganvilliaglabra Choisy in DC.	Kagitham pulu	
	Mirabilus jalapa L.	4 o' clock plant	
46	**BIXACEAE**		
	Bixa oralina L.	*Kumkuma*	
47	**CYPERACEAE**		
	Cyperus rotandrus L.		H
	Cyperus esculentus L.		H
	Cyperus triceps L		H
48	**POACEAE**		
	Cynodon dactylon L	garica	H
	Chloris barbata Sw		H
	Carex pseudocyperus		H

	Crex cruciata		H
	Dactyloctenium aegipticum	Crow foot grass	H
	Spinefex littorus L.	Ravanasuredu meesalu	CH
	Cetaria italica (L)Beav		H
	Bombusa arundanacea (Retz) Roxb.	veduru	S
49	***SAPINDACEAE***		
	Sapindus emarginatus	kunkudu	
50	***OXALIDACEAE***		
	Oxalis corniculata L.	pulichintha	
51	***ARACEAE***		
	Pothas scandens L.	Money plant	
52	***VITACEAE***		
	Cissus quadrangularis L.	nalleru	
53	***BALSAMINACEAE***		
	Impetions balsamina L.	Chilka mukku pulu	
54	***PANDANACEAE***		
	Pandanus fascicularis Lam.	Mogili	
55	**SAPOTACEAE**		
	Manilkara japota (L) P.Royan.	sapota	
	Manilkara hexandra (Roxb)Dubard.	Pala	
56	**BIGNONIACEAE**		
	Tecoma stans L.	Swarnaganneru	
	Millingtonia hortensi L.f	Bondumalli	
57	***VIOLACEAE***		
	Hybanthus enneaspermus (L) Muell.	Ratna purusha	
58	***ULMACEAE***		

	Holoptelea integrufolia (Roxb)planch.	Namali nara	

S=shrub, cs = climbing shrub,H= Herb,T=Tree,TH=Twining Herb,US=Under shrub,

WS= Woody shrub