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Floristic Diversity of Tree Species in Shivagangotri Campus, Davangere University, Karnataka, India

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ABSTRACT

The present study was undertaken to assess the floristic diversity of tree species in the Shivagangotri Campus of Davangere University, Karnataka, India. A systematic survey conducted from January to June 2024 recorded a total of 710 individual trees belonging to 68 species distributed among 33 families. Fabaceae was the dominant family with 15 species, followed by Moraceae 7 species, while Arecaceae, Rubiaceae, and Bignoniaceae were represented by three species each. Among the recorded species, Pongamia pinnata (76 individuals), Monoon longifolium (60 individuals), Tectona grandis (55 individuals), Syzygium cumini (47 individuals), and Balanites aegyptiaca (42 individuals) were the most abundant. The campus harbours numerous medicinal, timber-yielding, and ornamental tree species, highlighting its ecological, economic, and ethnobotanical significance. Several species, including Azadirachta indica, Pongamia pinnata, Syzygium cumini, Senna auriculata, Santalum album, and Terminalia arjuna, possess well-documented medicinal properties. The presence of threatened taxa such as Santalum album (Vulnerable), Araucaria araucana (Endangered), Hyophorbe indica (Endangered), and Tecomella undulata (Endangered) emphasizes the conservation value of the campus flora. The dominance of Fabaceae and the high species richness observed indicate a diverse and well-established tree community. The study highlights the role of university campus as important reservoirs of urban biodiversity and recommends conservation-oriented plantation and management strategies to preserve and enhance campus tree diversity.

Keywords: *Floristic diversity, Davangere university, Species richness, Medicinal trees, green campus, Araucaria araucana, Santalum album, Hyophorbe indica.*

Introduction

Davangere, located in the heart of Karnataka, derives its name from the Kannada words "Davana kere", meaning "village of the lake", spanning around 5,924 Sq. kms. Initially, Davangere university operated as a post-graduate center under the University of Mysore until 1987, and later became affiliated to Kuvempu university until 2009. On August 18, 2009, it gained autonomy, becoming an independent institution. Situated at Tholahunse Shivagangotri campus, the university is approximately 9 km from Davangere city.

The district experiences a semi-arid climate throughout the year, characterised by prolonged dry periods and hot summers. The southwest monsoon contributes about 58% of the total annual rainfall, while the northeast monsoon contributes approximately 22%. The remaining 20% of rainfall is received as sporadic showers during the months of summer. Davangere receives low to moderate rainfall, with a normal annual rainfall of approximately 641 mm. These climatic conditions support a diverse assemblage of drought-tolerant and tropical tree species adapted to seasonal variations in temperature and moisture availability.

The university campus spans around 73 acres, showcasing a diverse array of flora that have adapted to the tropical environment and habitat. The campus features a mix of naturally occurring and intentionally cultivated tree species, serving both research and aesthetic purposes. The Department of Studies in Botany has been instrumental in enriching the campus floral diversity, continuously introducing new species and promoting a thriving botanical ecosystem. This dedication has transformed the campus into a vibrant oasis, showcasing the beauty and resilience of tropical plant life.

However, comprehensive inventories of tree species are lacking for many educational institutions. Documentation of campus flora is therefore necessary to understand species richness, dominance patterns, and conservation status. Such information is valuable for planning conservation strategies, developing botanical gardens, promoting environmental awareness, and strengthening green-campus initiatives [1]. To the best of our knowledge, no published study has specifically documented the tree species diversity and floristic composition of Shivagangotri Campus. So, the present study was undertaken to assess and document the floristic diversity of tree species in the Shivagangotri campus of Davangere University, Karnataka.

The objectives were to identify and catalogue the tree species present on the campus, evaluate their abundance and family representation, and document their conservation status. The findings of this study provide a valuable baseline database for future biodiversity assessments and highlight the significance of university campuses as reservoirs of urban plant diversity.

Materials and Methods

1. Study area:

The study area encompasses Shivagangotri campus, Davangere university. The campus stands on an area covering approximately 73 acres, located in 14°23'24''N to 14°23'38''N latitude, and 75°57'34''E to 75°57'55''E longitude, with an altitude of 539 m. This study helps in understanding the diversity of trees, and the area was surveyed during the month of January 2024 to June 2024 *[Fig. I.].*

2. Data collection procedure:

a. Field observation:

- ***Visual features:*** Determine tree species by observing and analysing their distinctive characteristics, including leaf morphology, configuration, hue, floral architecture, fruit and seed characteristics, and overall plant morphology [2].

b. Field guides and keys: The specimens were identified with the help of flora (Bhandari 1978 [5], Cooke 1903 [7], Gamble 1919 [10], Gamble 1994 [11], Hooker, J. D. 1875 [12], Jain S. P. 1979 [13], Kotresha & Sidananda 2016 [16], Kumar S. 2001 [17], Manjunath et al. 2004 [18], Ramaswamy & Razi 1973 [24], Saldanha & Nicolson 1976 [28], Saldanha 1984 and 1996 [27], Sharma et al. 1984 [33], Sharma 1985 [34], Singh 1988 [37], Seetharam et al. 2002 [31], Seetharam et al. 2018 [32]). Bentham and hooker system of classification was followed [4].

c. Picture collection: To assist in species identification and verification, photographs of the plants were captured in their natural habitat, providing a visual record for subsequent examination and confirmation by a taxonomic expert.

d. Expert consultation: We consulted Dr. Haleshi C., Assistant Professor, Department of Studies in Botany, Davangere University, a renowned taxonomist with extensive expertise in plant taxonomy, for the confirmation and authentication of the recorded species.

e. Recording data: We utilised field guides and taxonomic keys to accurately identify plant species, meticulously recording both their vernacular names and scientific nomenclature. Additionally, we conducted a manual count to document the abundance of each species within the study area, ensuring a comprehensive and precise record of the tree population.

Results and Discussion

The present investigation documented 68 tree species belonging to 33 families with a total of 710 individual trees distributed across the Shivagangotri campus of Davangere University, indicating considerable floristic richness within a relatively small urban university landscape. The predominance of tree diversity within the 73-acre campus demonstrates that educational institutions can function as important repositories of urban biodiversity while simultaneously providing ecological, educational, and conservation benefits.

The documented diversity is noteworthy considering that the study area is situated in the semi-arid region of central Karnataka, where climatic conditions are generally characterised by limited annual rainfall and prolonged dry periods.

Among the recorded taxa, Fabaceae emerged as the dominant family with 15 species, followed by Moraceae (7 species), while Arecaceae, Bignoniaceae, and Rubiaceae were represented by three species each *[Fig. IV.]*. Similar dominance of Fabaceae has been consistently reported in floristic investigations conducted across Karnataka. Studies at the GKVK Biodiversity Heritage Site, Bengaluru, reported Fabaceae among the dominant families supporting high woody species diversity [38]. Likewise, floristic investigations at Jnana Tunga Campus, Raichur, documented Fabaceae as the largest family comprising 45 species, followed by Asteraceae and Euphorbiaceae [30]. Similar observations were made in Karnatak College, Dharwad, where Fabaceae represented 44 species and constituted the most dominant family [15]. Furthermore, the recent survey of Karnatak University, Dharwad, also identified Fabaceae as the richest family with 41 tree species [19]. The repeated dominance of Fabaceae across university campuses can be attributed to their remarkable ecological adaptability, nitrogen-fixing capability, drought tolerance, rapid establishment, and extensive use in urban landscaping and afforestation programmes [14].

Species abundance analysis revealed that *Pongamia pinnata* was the most dominant tree with 76 individuals, followed by *Monoon longifolium* (60), *Tectona grandis* (55), *Syzygium cumini* (47), *Balanites aegyptiaca* (42), and *Azadirachta indica* (37) *[Table 1 & Fig.II.].* These species are widely planted throughout southern India because of their multiple ecological and economic functions. *Pongamia pinnata* is recognised for its drought tolerance, nitrogen-fixing ability, shade production, and biofuel potential, making it highly suitable for semi-arid landscapes [8,9]. Likewise, *Monoon longifolium* is extensively planted as an avenue and ornamental tree because of its rapid growth and narrow crown architecture, whereas *Tectona grandis* is valued for its commercial timber. The abundance of these species reflects intentional plantation strategies adopted by the university to combine ecological restoration with landscape beautification and educational utility [20,26].

Compared with other university campuses, the Shivagangotri campus possesses relatively lower overall species richness than larger campuses such as Karnatak University (223 tree species) [19], Karnatak College (303 plant species) [15], Jnana Tunga Campus (295 plant species) [30], Kuvempu University campus (69 plant species) [21]. However, these campuses extend over substantially larger geographical areas and encompass multiple habitat types, including botanical gardens, scrub forests, plantations, and natural woodlands. In contrast, the Shivagangotri campus occupies only about 73 acres, yet supports a comparatively high tree diversity, suggesting efficient land management and sustained plantation activities. Therefore, species richness should be interpreted relative to campus size and habitat heterogeneity rather than by absolute species numbers alone.

The Family Value Index (FVI) is an important quantitative measure for evaluating the ecological significance and dominance of plant families within a vegetation community based on their relative representation and abundance [29].

In the present study, the FVI demonstrated the ecological importance of Fabaceae within the campus vegetation, with higher FVI values indicating greater ecological dominance associated with higher species richness and abundance *[Fig. III].* Similar interpretations have been reported using Importance Value Index (IVI) and family dominance analyses in GKVK and Karnatak University studies, where dominant taxa largely determined the structural composition of the vegetation [19,38]. The observed family dominance therefore reflects both ecological adaptation and anthropogenic planting preferences.

One of the notable findings of the present investigation is the high representation of medicinally important tree species. Species such as *Azadirachta indica*, *Syzygium cumini*, *Terminalia arjuna*, *Santalum album*, *Senna auriculata,* and *Moringa oleifera* possess well-documented pharmacological properties and continue to play significant roles in traditional Indian medicine [36, 23]. The coexistence of numerous medicinal species within a university campus enhances opportunities for botanical education, pharmacognostic research, conservation awareness, and sustainable utilisation. Similar observations have been reported from the Biodiversity Heritage Site of GKVK [38], where medicinal plants constitute an important component of campus biodiversity, and from Jnanabharathi Campus, Bengaluru, where native medicinal herbs contribute significantly to ecosystem functioning and biodiversity conservation [39].

The presence of economically important timber species including *Tectona grandis*, *Swietenia mahagoni*, *Gmelina arborea*, *Pongamia pinnata*, and *Santalum album* further enhances the ecological and socioeconomic value of the campus vegetation.

Simultaneously, ornamental species such as *Monoon longifolium*, *Bougainvillaea glabra*, *Tecoma stans*, *Millingtonia hortensis*, and *Ixora coccinea [Table. 1]* improve landscape aesthetics while providing habitat and food resources for urban birds, insects, and pollinators. Such multifunctional vegetation increases ecological resilience and contributes to improved microclimatic conditions, carbon sequestration, and ecosystem services within university environments [19].

An important conservation outcome of the present study is the occurrence of several globally threatened species, including *Santalum album* (Vulnerable), *Araucaria araucana*, *Hyophorbe indica*, and *Tecomella undulata* (Endangered). The conservation of threatened taxa within educational institutions represents an effective *ex-situ* conservation strategy that complements natural habitat protection. Similar conservation initiatives have been successfully implemented through the establishment of endemic arboreta at Mangalore University for preserving threatened Western Ghats flora [35]. The inclusion of threatened and native species within campus plantations therefore substantially increases the conservation value of the Shivagangotri campus.

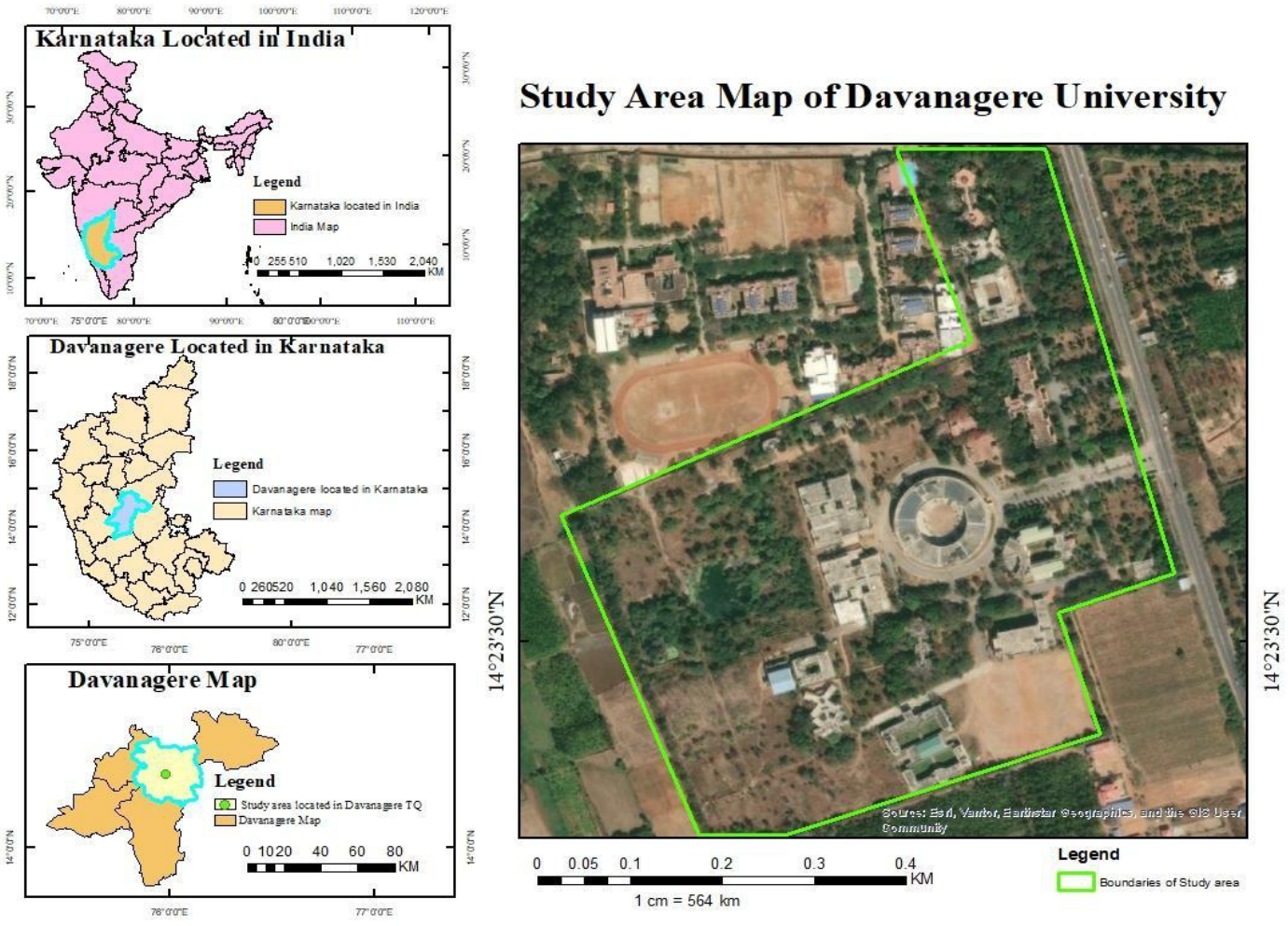
Overall, the present study demonstrates that the Shivagangotri campus functions as an important urban green space supporting diverse native, cultivated, medicinal, ornamental, and economically valuable tree species. Although the campus is smaller than several other universities in Karnataka, its high tree diversity, representation of threatened taxa, and dominance of ecologically significant families underscore its importance as a centre for biodiversity conservation, environmental education, and ecological research. Continued enrichment planting using native species, regular biodiversity monitoring, and establishment of a dedicated botanical garden would further strengthen the campus as a model green university and contribute to long-term conservation of university floristic diversity.

Table 1: Data showing the Botanical Name, Family, Common Name, Number of Trees, Type of Trees and IUCN Conservation Status of tree species recorded in the Davangere University campus at Shivagangotri, Davangere district, Karnataka

Sl. No	Botanical name	Family	Common name	Number of trees	Type of tree (Medicinal, ornamental, Timber yielding)	IUCN Conservation status
1.	*Albizia lebbeck* (L.) Benth.	Fabaceae	Black siris east, Indian walnut, east India walnut, fry wood, lebbek tree	01	Timber yielding, Medicinal	Least Concern
2.	*Anacardium occidentale* L.	Anacardiaceae	Cashew-nut tree	01	Medicinal, Timber yielding	Least Concern
3.	*Araucaria araucana (Molina) K.Koch*	Araucariaceae	Monkey puzzle tree, chilean pine	02	Ornamental, Timber yielding	Endangered
4.	*Artabotrys hexapetalus* (L.f.) Bhandari	Annonaceae	Ylang ylang vine	01	Medicinal, Ornamental	Not Evaluated
5.	*Artocarpus heterophyllus* Lam.	Moraceae	Jackfruit, nangka, jack, jak, jake tree	01	Medicinal, Timber yielding	Not Evaluated
6.	*Azadirachta indica* A.Juss.	Meliaceae	Neem	37	Medicinal, Timber yielding	Least Concern
7.	*Balanites aegyptiaca* (L.) Delile	Zygophyllaceae	Desert date	42	Medicinal	Least Concern
8.	*Bambusa bambos* (L.) Voss	Poaceae	Indian Thorny Bamboo, Spiny Bamboo	01	Timber yielding	Not Evaluated
9.	*Bauhinia purpurea* L.	Fabaceae	Purple Orchid Tree, Butterfly Tree, Purple bauhinia	32	Ornamental, Medicinal	Least Concern
10.	*Bougainvillea glabra* Choisy	Nyctaginaceae	Paper flower	05	Ornamental	Least Concern
11.	*Butea monosperma (Lam.) Kuntze*	Fabaceae	Flame of forest, bastard teak	15	Medicinal, Timber yielding	Least Concern
12.	*Carica papaya* L.	Caricaceae	Papaya tree	02	Medicinal	Not Evaluated

13.	*Cassia fistula* L.	Fabaceae	Golden shower, purging cassia, Indian laburnum.	01	Ornamental, Medicinal	Least Concern
14.	*Casuarina equisetifolia* L.	Casuarinaceae	coastal she-oak, horsetail she-oak, whistling pine, or Australian pine	06	Timber yielding	Least Concern
15.	*Citrus × aurantiifolia* (Christm.) Swingle	Rutaceae	Key lime, west Indian lime, Mexican lime, Egyptian lime, Kazi nimbu	01	Medicinal	Not Evaluated
16.	*Cocos nucifera* L.	Arecaceae	Coconut tree, tengu	12	Medicinal, Timber yielding	Not Evaluated
17.	*Delonix regia* (Bojer ex Hook.) Raf.	Fabaceae	Gulmohar, Royal poinciana, flame tree	03	Ornamental	Least Concern
18.	*Dracaena elliptica* Thunb. & Dalm.	Asparagaceae	Twig Dragon Tree	10	Ornamental	Least Concern
19.	*Duranta erecta* L.	Verbenaceae	Golden dewdrop, pigeon berry, sky flower	15	Ornamental	Least Concern
20.	*Ficus amplissima* Sm.	Moraceae	Indian bat tree, Indian bat fig, cluster fig	04	Medicinal	Least Concern
21.	*Ficus benghalensis* L.	Moraceae	Banyan, banyan fig, Indian banyan	03	Medicinal	Not Evaluated
22.	*Ficus drupacea* Thunb.	Moraceae	Mysore fig, brown-woolly fig	01	Medicinal	Least Concern
23.	*Ficus elastica* Roxb. ex Hornem.	Moraceae	Indian rubber fig	01	Ornamental	Least Concern
24.	*Ficus racemosa* L.	Moraceae	Gular, cluster fig	08	Medicinal	Least Concern
25.	*Gmelina arborea* Roxb. ex Sm.	Lamiaceae	Beechwood, Kashmir tree, white teak	11	Timber yielding, Medicinal	Least Concern
26.	*Grevillea robusta* A.Cunn. ex R.Br.	Proteaceae	Silky oak, Australian silky oak, southern silky oak	02	Timber yielding	Least Concern
27.	*Hamelia patens* Jacq.	Rubiaceae	Scarlet bush, texas firebush	02	Ornamental	Least Concern
28.	*Hyophorbe indica* Gaertn.	Arecaceae	Champagne Palm	12	Ornamental	Endangered
29.	*Ixora coccinea* L.	Rubiaceae	Flame of the woods, jungle geranium	10	Ornamental, Medicinal	Not Evaluated
30.	*Lantana camara* L.	Verbenaceae	Lantana, wild sage	08	Ornamental, Medicinal	Not Evaluated
31.	*Lawsonia inermis* L.	Lythraceae	Henna tree, mehndi, mignonette tree, Egyptian privet	01	Medicinal	Least Concern
32.	*Leucaena leucocephala* (Lam.) de Wit	Fabaceae	Wild tamarind, subabul	05	Timber yielding	Not Evaluated
33.	*Madhuca longifolia* var. *latifolia* (Roxb.) A.Chev.	Sapotaceae	Madhuka, butter tree, mahua, mahwa, mohulo, iluppai	11	Medicinal, Timber yielding	Not Evaluated
34.	*Mangifera indica* L.	Anacardiaceae	Mango tree	08	Medicinal, Timber yielding	Not Evaluated
35.	*Manilkara zapota (L.)* P.Royen	Sapotaceae	Chiku, sapodilla, sauh menila, naseberry, nispero, chicle	01	Medicinal, Timber yielding	Least Concern
36.	*Millingtonia hortensis* L.f.	Bignoniaceae	Indian cork-tree, Tree Jasmine	06	Ornamental	Least Concern
37.	*Monoon longifolium* (Sonn.) B.Xue & R.M.K.Saunders	Annonaceae	False Ashoka, mast Tree	60	Ornamental	Least Concern
38.	*Moringa oleifera* Lam.	Moringaceae	Drumstick, horseradish tree, saguna, sainjna.	07	Medicinal	Least Concern
39.	*Neltuma juliflora* (Sw.) Raf.	Fabaceae	Mesquite, Bellary Jaali	35	Timber yielding	Least Concern
40.	*Neolamarckia cadamba* (Roxb.) Bosser	Rubiaceae	Common bur-flower tree, kaddam, leichhardt pine	01	Timber yielding, Medicinal	Not Evaluated
41.	*Nerium oleander* L.	Apocynaceae	Indian oleander, sweet scented oleander	10	Ornamental, Medicinal	Least Concern
42.	*Nyctanthes arbor-tristis* L.	Oleaceae	Tree of sadness, night blooming jasmine	02	Medicinal, Ornamental	Least Concern
43.	*Peltophorum pterocarpum* (DC.) Backer ex K.Heyne	Fabaceae	Copper pod, yellow flame tree	11	Ornamental, Timber yielding	Least Concern
44.	*Phoenix sylvestris* (L.) Roxb.	Arecaceae	Silver date palm, Indian date, sugar date palm, wild date palm.	01	Medicinal	Not Evaluated
45.	*Phyllanthus acidus* (L.) Skeels	Phyllanthaceae	Star Gooseberry, otaheite gooseberry	02	Medicinal	Not Evaluated
46.	*Pithecellobium dulce* (Roxb.) Benth.	Fabaceae	Madras thorn, manila tamarind	01	Medicinal	Least Concern
47.	*Platycladus orientalis* (L.) Franco	Cupressaceae	Oriental arborvitae, oriental thuja Chinese arborvitae	04	Ornamental	Near threatened
48.	*Plumeria alba* L.	Apocyanaceae	White Frangipani, West Indian Jasmine	05	Ornamental	Least Concern
49.	*Pongamia pinnata* (L.) Pierre	Fabaceae	Pongam oil Tree, Indian beech	76	Medicinal, Timber yielding	Least Concern
50.	*Prosopis cineraria* (L.) Druce	Fabaceae	Ghaf, shami, sangria, kandi	12	Medicinal, Timber yielding	Not Evaluated

51.	*Psidium guajava* L.	Myrtaceae	Guava, jambu batu, jambu biji, common guava.	01	Medicinal	Least Concern
52.	*Samanea saman* (Jacq.) Merr.	Fabaceae	Rain tree, monkey pod	02	Timber yielding, Ornamental	Least Concern
53.	*Santalum album* L.	Santalaceae	Indian sandalwood tree, white sandalwood	16	Medicinal, Timber yielding	Vulnerable
54.	*Senna auriculata* (L.) Roxb.	Fabaceae	Tanner's cassia	20	Medicinal	Least Concern
55.	*Simarouba glauca* DC.	Simaroubaceae	Paradise tree, bitterwood	10	Timber yielding	Least Concern
56.	*Streblus asper* Lour.	Moraceae	Bush and tooth brush tree	02	Medicinal	Least Concern
57.	*Swietenia mahagoni* (L.) Jacq.	Meliaceae	West Indian mahogany	22	Timber yielding	Near threatened
58.	*Syzygium cumini* (L.) Skeels	Myrtaceae	Black plum, jamun, java plum, Indian blackberry	47	Medicinal, Timber yielding	Least Concern
59.	*Tecoma stans* (L.) Juss. ex Kunth	Bignoniaceae	Golden bells, yellow bells, yellow bignonia, trumpet tree	05	Ornamental	Least Concern
60.	*Tecomella undulata* (Sm.) Seem.	Bignoniaceae	Desert teak, rohida	02	Timber yielding	Endangered
61.	*Tectona grandis* L.f.	Lamiaceae	Teak, Indian Oak	55	Timber yielding	Endangered
62.	*Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.	Combrataceae	Arjuna tree	08	Medicinal, Timber yielding	Least Concern
63.	*Terminalia chebula* Retz.	Combretaceae	Chebulic myrobalan, birhara, harada, haritaki, black or brown myrobalan	01	Medicinal	Least Concern
64.	*Thespesia populnea* (L.) Sol. ex Corrêa	Malvaceae	Pacific rosewood, Indian tulip tree, milo	01	Medicinal, Timber yielding	Least Concern
65.	*Vachellia nilotica* (L.) P.J.H.Hurter & Mabb.	Fabaceae	Gum arabica tree, Babul tree	06	Medicinal, Timber yielding	Least Concern
66.	*Xylia xylocarpa* (Roxb.) W.Theob.	Fabaceae	Burma iron wood	01	Timber yielding	Least Concern
67.	*Ziziphus jujuba* Mill.	Rhamnaceae	Jujube, red date, Chinese date, Chinese jujube	01	Medicinal	Least Concern
68.	*Ziziphus oenopolia* (L.) Mill.	Rhamnaceae	Jackal jujube, Indian jujube	01	Medicinal	Least Concern



[Fig. I.]. Study area map of Davangere university campus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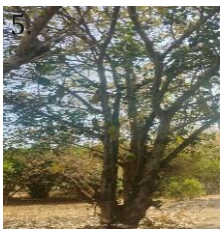
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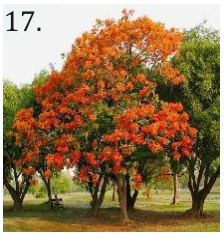
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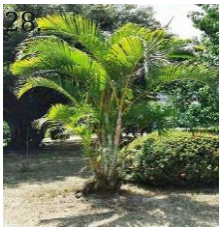
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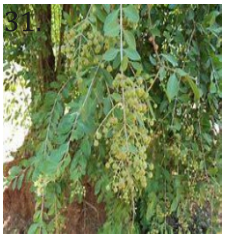
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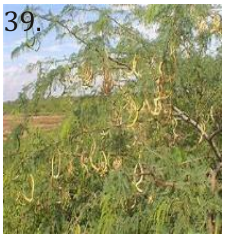
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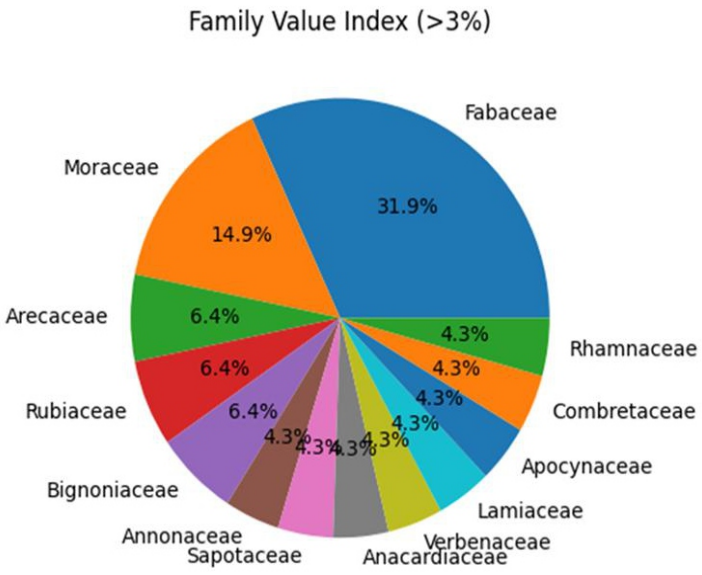
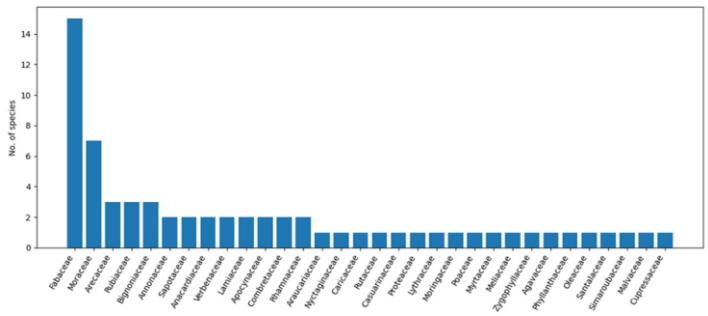
[Fig.II.]. 1. Albizia lebbeck (L.) Benth., 2. Anacardium occidentale L., 3. Araucaria araucana (Molina) K.Koch, 4. Artabotrys hexapetalus (L.f.) Bhandari, 5. Artocarpus heterophyllus Lam., 6. Azadirachta indica A.Juss., 7. Balanites aegyptiaca (L.) Delile, 8. Bambusa bambos (L.) Voss, 9. Bauhinia purpurea L., 10. Bougainvillea glabra Choisy, 11. Butea monosperma (Lam.) Kuntze, 12. Carica papaya L., 13. Cassia fistula L., 14. Casuarina equisetifolia L., 15. Citrus × aurantiifolia (Christm.) Swingle, 16. Cocos nucifera L., 17. Delonix regia (Bojer ex Hook.) Raf., 18. Dracaena elliptica Thunb. & Dalm., 19. Duranta erecta L., 20. Ficus amplissima Sm., 21. Ficus benghalensis L., 22. Ficus drupacea Thunb., 23. Ficus elastica Roxb. ex Hornem., 24. Ficus racemosa L., 25. Gmelina arborea Roxb. ex Sm., 26. Grevillea robusta A.Cunn. ex R.Br., 27. Hamelia patens Jacq., 28. Hyophorbe indica Gaertn., 29. Ixora coccinea L., 30. Lantana camara L., 31. Lawsonia inermis L., 32. Leucaena leucocephala (Lam.) de Wit, 33. Madhuca longifolia var. latifolia (Roxb.) A.Chev., 34. Mangifera indica L., 35. Manilkara zapota (L.) P.Royen, 36. Millingtonia hortensis L.f., 37. Monoon longifolium (Sonn.) B.Xue & R.M.K.Saunders, 38. Moringa oleifera Lam., 39. Neltuma juliflora (Sw.) Raf., 40. Neolamarckia cadamba (Roxb.) Bosser, 41. Nerium oleander L., 42. Nyctanthes arbor-tristis L., 43. Peltophorum pterocarpum (DC.) Backer ex K.Heyne, 44. Phoenix sylvestris (L.) Roxb., 45. Phyllanthus acidus (L.) Skeels, 46. Pithecellobium dulce (Roxb.) Benth., 47. Platycladus orientalis (L.) Franco, 48. Plumeria alba L., 49. Pongamia pinnata (L.) Pierre, 50. Prosopis cineraria (L.) Druce, 51. Psidium guajava L., 52. Samanea saman (Jacq.) Merr., 53. Santalum album L., 54. Senna auriculata (L.) Roxb., 55. Simarouba glauca DC., 56. Streblus asper Lour., 57. Swietenia mahagoni (L.) Jacq., 58. Syzygium cumini (L.) Skeels, 59. Tecoma stans (L.) Juss. ex Kunth, 60. Tecomella undulata (Sm.) Seem., 61. Tectona grandis L.f., 62. Terminalia arjuna (Roxb. ex DC.) Wight & Arn., 63. Terminalia chebula Retz., 64. Thespesia populnea (L.) Sol. ex Corrêa, 65. Vachellia nilotica (L.) P.J.H.Hurter & Mabb., 66. Xylia xylocarpa (Roxb.) W.Theob., 67. Ziziphus jujuba Mill., 68. Ziziphus oenopolia (L.) Mill.



[Fig. III.]. Pie chart showing the family value index (FVI)



[Fig. IV.]. Bar graph showing the family dominance pattern

Conclusion

The Shivagangotri campus is nestled within a vibrant tapestry of flora, boasting an impressive array of plant species. Our survey revealed 68 species spanning 33 families, highlighting the urgent need to safeguard and cultivate this botanical treasure trove. Establishing a botanical garden on campus would not only preserve this biodiversity but also provide a valuable resource for the academic community, including Botany students,

research scholars, and lecturers, as well as the forest department. Despite having ample space, its potential remains untapped. It is imperative that we capitalize on this opportunity to optimize our campus natural assets and further enrich its diversity, fostering a thriving hub for botanical exploration and discovery.

Several species identified during the survey possess considerable medicinal and economic value. *Azadirachta indica* is widely recognised for its antimicrobial and antidiabetic properties, while *Syzygium cumini* & *Senna auriculata* is extensively used in traditional medicine for the management of diabetes [3,22]. *Terminalia arjuna* is valued for its cardioprotective properties [25], and *Santalum album* is renowned for its medicinal, aromatic, and commercial importance [6]. Timber-producing species such as *Tectona grandis*, *Swietenia mahagoni*, and *Gmelina arborea* contribute substantially to the economic value of the campus flora. Furthermore, the occurrence of threatened species such as *Santalum album* (Vulnerable), *Araucaria araucana* (Endangered), *Hyophorbe indica* (Endangered), and *Tecomella undulata* (Endangered) highlights the conservation significance of the campus and emphasizes the need for their protection and sustainable management.

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