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Original Research Paper

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# HERBACEOUS DIVERSITY OF K.A.H.M. UNITY WOMEN'S COLLEGE, MANJERI, KERALA, INDIA

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**ABSTRACT** The study was conducted at the Korambayil Ahamed Haji Memorial Unity Women's College, which is situated in the Manjeri Municipality of Malappuram district, Kerala State. The present study was aimed at determining the herbaceous plant species richness of the K.A.H.M.Unity women's college. For this, the species richness data was obtained by both secondary sources and intensive surveys from 2019 - 2020. The data from the primary and secondary sources resulted in the documentation of 91 species of herbs belonging to 74 genera under 34 families.Out of 91 plants, 91 were Angiosperms. Among the angiosperms there were 64 dicots under 28 family and 27 monocots under 6 family. The contribution of dicotyledons was 70.32% and monocotyledons 29.67%. Poaceae was the most dominant family with 12 species and 10 genera.The dominance of plants from Poaceae family in the study site, supports the harsh environmental conditions especially the water stress, because these plants have made morphological, anatomical and a physiological modifications to overcome the drought conditions. At present time, several of the important plant species are on verge of depletion, therefore such type of studies shall be paid serious attention for future prospects and to understand environmental conservation efforts. It also observed that successful strategies for management of useful species would be beneficial for future prospects.

**KEYWORDS :** Manjeri, Herbaceous species richness, moist deciduous vegetation.

## INTRODUCTION

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind (Sen & Keshari, 2019). Appropriate conservative policies and sustainable development strategies are integral approach towards biodiversity. Biodiversity keeps the ecological processes in a balanced state, which is necessary for human survival (Kaur & Sharma, 2014). As biodiversity equals variety at the species level of biological organization, the terms species richness and species diversity have become key concepts in conservation biology. The plant diversity at any site is influenced by species distribution and abundance patterns (Reddy et al., 2014). Both concepts are important characteristics of community structure. Therefore, much has been published on the measurement of the species richness and species diversity of communities (MacArthur, 1955; Hurlbert, 1971; Peet, 1974; Pielou, 1975; Magurran, 1988, 2004; Schluter & Ricklefs, 1993; Colwell & Coddington, 1994; Krebs, 1999). In the present work is designed with an objective to study the herbaceous diversity and documentation of campus flora.

## STUDY AREA

Malappuram, one of the districts in Kerala, was formed in 1969. The geographical area of the district is 3,550 sq. km. It is the third largest district of Kerala, as it occupies 9.13 per cent of the total area of the state. Manjeri is a town and municipality in Malappuram District in the state of Kerala with an extent of 53. sq.km out of the 7 taluks of Malappuram district. Manjeri is the headquarters of Ernad taluk. It is the second widest municipality in Kerala. The campus lies in 11° 07' 10" North latitude and 76° 07' 71" East longitudes. The terrain is laterite rocky. The characteristically hilly and undulating land is having an expanse of nearly 60 acres. The vegetation is a degraded moist-deciduous one. It was a barren hill at the time of inception of the college. Now the area is with plentiful trees planted by the nature clubs and other student community during the last three decades.

## METHODOLOGY

The present study is the preliminary effort to collect and identify the Herbal Flora of K.A.H.M. Unity Women's college, Manjeri. The systematic collection of Herbs was made from various localities of college campus by visiting areas frequently. All mature, intact and undamaged herbal species were collected from college campus during the period from February 2019 to January 2020. The details were recorded in the field book and colour photographs were taken. Collected plant specimens were dried and preserved plants mounted on herbarium sheets by adhesive glue and fevicols. Identification of plants done with the help of Flora of the Presidency of Madras (Gamble, 1915-1936), Flora of British India (Hooker, 1872-1897), Flora of Malappuram (Babu, 1990), etc. Interactive CDs such as Flowering Plants of Kerala and Tree Identification Key prepared by Dr. N. Sasidharan of Kerala Forest Research Institute were also used for identifying specimens. Nomenclatural and phenologic details of the specimens were collected from these CDs. Photographs and herbaria of some unidentified specimens were sent to experts for confirming the identity.

## RESULTS & DISCUSSION

Herbaceous plant species are important components of ecosystems. Herbs are variable in their presence as well as presence of certain chemical compounds in their body system. The present study was aimed at assessing the herbaceous plant diversity. Total 91 plant species belonging to 34 families and 74 genera were recorded from the study site. Out of 91 plants, 91 were Angiosperms. Among the angiosperms there were 64 dicots under 28 family and 27 monocots under 6 family. The contribution of dicotyledons was 70.32% and monocotyledons 29.67%. Poaceae was the most dominant family with 12 species and 10 genera.According to the abundance of herbaceous angiosperms in the campus, it has been observed that the Family Poaceae is most abundant followed by Asteraceae and Cyperaceae also shows wide range of vegetation in all over the area. At Genus level, Cyperus is largest with 4 species followed by Commelina and Lindernia with 3 species. Genus Eragrostis, Pennisetum, Phyllanthus, Mitracarpus, Sida, Euphorbia, Evolvulus, Cleome, Justicia and Asystasia with 2 species each. Remaining 61 genera are represented by only single species.

**Fig.1.Bar diagram showing the representation of the families.**

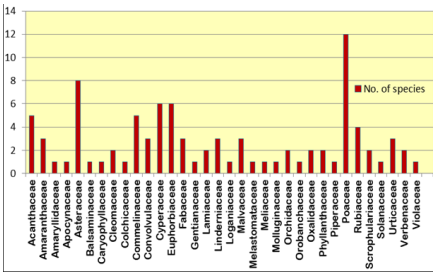



**Table 1. Showing dicot species richness.**

| DICOTYLEDONS | |
|---|---|
| **Family** | **Plant species** |
| Acanthaceae | • *Asystasia dalzelliana*<br>• *Asystasia gangetica*<br>• *Justicia procumbens*<br>• *Justicia simplex*<br>• *Ruellia prostrata* |
| Amaranthaceae | • *Achyranthus aspera*<br>• *Aerva lanata*<br>• *Alternanthera sessilis* |
| Apocynaceae | • *Catharanthus pusillus* |
| Asteraceae | • *Ageratum conyzoides*<br>• *Crassocephalum crepidioides*<br>• *Eclipta alba*<br>• *Emilia sonchifolia*<br>• *Senecio vulgaris*<br>• *Synedrella nodiflora*<br>• *Tridax procumbens*<br>• *Vernonia cinerea* |
| Balsaminaceae | • *Impatiens minor* |
| Caryophyllaceae | • *Polycarpae corymbosa* |
| Cleomaceae | • *Cleome rutidosperma*<br>• *Cleome viscosa* |
| Convolvulaceae | • *Evolvulus alsinoides*<br>• *Evolvulus nummularius*<br>• *Merremia tridentata* |
| Euphorbiaceae | • *Acalypha indica*<br>• *Croton hirtus*<br>• *Euphorbia heterophylla*<br>• *Euphorbia hirta*<br>• *Microstachys chamaelea*<br>• *Tragia involucrata* |
| Fabaceae | • *Chamaecristamimosoids*<br>• *Desmodium triflorum*<br>• *Mimosa pudica* |
| Gentianaceae | • *Canscora pauciflora* |
| Lamiaceae | • *Hyptis suaveolens*<br>• *Leucas aspera* |
| Linderniaceae | • *Lindernia ciliata*<br>• *Lindernia crustacea*<br>• *Lindernia viscosa* |
| Loganiaceae | • *Mitrasacme pygmaea* |
| Malvaceae | • *Sida acuta*<br>• *Sida cordifolia*<br>• *Waltheria indica* |
| Melastomataceae | • *Osbeckia muralis* |
| Meliaceae | • *Naregamia alata* |
| Molluginaceae | • *Mollugo pentaphylla* |
| Orobanchaceae | • *Striga angustifolia* |
| Oxalidaceae | • *Biophytum sensitivum*<br>• *Oxalis corniculata* |
| Phyllanthaceae | • *Phyllanthus amarus*<br>• *Phyllanthus virgatus* |
| Piperaceae | • *Peperomia pellucida* |
| Rubiaceae | • *Mitracarpus hirtus*<br>• *Mitracarpus verticillatus*<br>• *Oldenlandia corymbosa*<br>• *Spermacoce articularis* |
| Scrophulariaceae | • *Scoparia dulcis*<br>• *Sopubia delphinifolia* |
| Solanaceae | • *Physalis minima* |
| Urticaceae | • *Pilea microphylla*<br>• *Urtica parviflora* |
| Verbenaceae | • *Priva cordifolia*<br>• *Stachytarpheta indica* |
| Violaceae | • *Hybanthus enneaspermus* |

**Table 2. Showing monocot species richness:**

| MONOCOTYLEDONS | |
|---|---|
| **Family** | **Plant species** |
| Amaryllidaceae | • *Hymenocallis littoralis* |
| Colchicaceae | • *Gloriosa superba* |
| Commelinaceae | • *Aneilema nudiflorum*<br>• *Commelina bengalensis*<br>• *Commelina diffusa*<br>• *Commelina erecta*<br>• *Cyanotis cristata* |
| Cyperaceae | • *Cyperus longus*<br>• *Cyperus paniceus*<br>• *Cyperus rotundus*<br>• *Cyperus sphacelatus*<br>• *Fimbristylis aestivalis*<br>• *Kyllinga nemoralis* |
| Orchidaceae | • *Habenaria grandiflora*<br>• *Zeuxine longilabris* |
| Poaceae | • *Dactylotenium aegyptium*<br>• *Digitaria ciliaris*<br>• *Echinochloa colona*<br>• *Eragrostis amabilis*<br>• *Eragrostis unioloides*<br>• *Oplismenus hirtellus*<br>• *Panicum repens*<br>• *Paspalum scorbiculatum*<br>• *Pennisetum pedicellatum*<br>• *Pennisetum polystachion*<br>• *Rottboellia exaltata*<br>• *Setaria pumila* |

**Fig.2. Pie diagram showing herbaceous diversity of campus at Species, Genus, and Family level.**

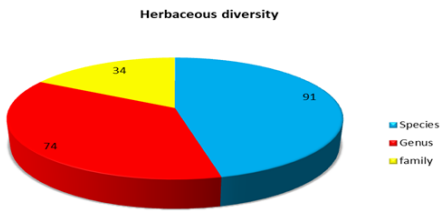
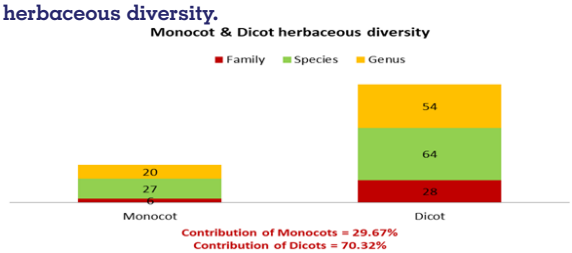



**Fig. 3. Bar diagram showing Monocot and Dicot herbaceous diversity.**

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