

# Flowering Plants of Kuppalli Region, Central Western Ghats, Karnataka, India

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## ABSTRACT

Kuppalli, the birthplace and childhood home of the renowned Kannada poet, Kuvempu (Kuppalli Venkatappa Puttappa), it is very famous tourist place. The forests of Kuppalli are of evergreen and semi-evergreen type dominating with Dipterocarps and Combrets. In the present study of random survey, a total of 522 flowering plants belonging to 103 families and 371 genera of angiosperms and few RET species like *Alangium salvifolium* (L.f.) Wangerin, *Canarium strictum* Roxb., *Garcinia gummi-gutta* (L.) Roxb., *Gardenia gummifera* L.f., *Hedyotis cyanantha* Kurz, *Hopea ponga* (Dennst.) Mabb., *Vepris bilocularis* Engl. and *Vateria indica* L.. The genera *Ficus* have highest number of species (7), followed by *Leucas*, *Murdannia* and *Syzygium* with 6 species each, *Blumea*, *Cyperus*, *Garcinia*, *Ipomoea*, *Solanum* and *Spermacoce* with 5 species each. Habit wise classification of flowering plants exhibits the presence of 193 herbs, 158 trees, 89 climbers, 60 shrubs, 15 epiphytes and 7 parasites.

**Key words :** Flowering plants, Central western ghats of India, Karnataka

## Introduction

Biodiversity is the assemblage of different life forms. It is defined as the number of different organisms and their relative frequency in an ecological system. For biological diversity the organization of organisms are considered at many levels ranging from complete ecosystems to the chemical components that from the molecular basis of heredity. Thus, the term Biodiversity includes variability of genes, variation, species, population in different and their relative abundance (Kilic and Arslan, 2010).

Floristic studies a prerequisite for much fundamentals research in tropical community ecology, such as modeling patterns of species diversity or understanding species distribution. Floristic study and diversity assessment are necessary to understand the present diversity status and conservation biodiversity (Phillips *et al.*, 2003). Floristic studies

enquire increasing importance in recent years in response to the need of developing and under developing countries to assess their plant wealth (Vediya and Kharadi, 2011).

The Western Ghats region is well known for its biological diversity and has always been a "Botanist Paradise". Western Ghats Forest has received much attention recent years because of their high level of biodiversity, rich biomass and greater level of endemism (Venkataraman, 2006). Sixty three percent of India's evergreen woody plants are endemic to the Western Ghats (Nayar, 1980). Many of the endemic flowering plants in Western Ghats region are very restricted in distribution with small population and it is estimated that about 10% of endemic flowering plants are presumably in danger of extinction (Manilal, 1995).

The present study area Kuppalli region comes under central part of the Western Ghats has ever-

green and semi-evergreen forests and trees, herbs, shrubs and climbers predominantly grow in the vegetation. The forest is rich in vegetation and enriched with many medicinal, rare, endemic and threatened categories of plants but very little information exists on the diversity of existing species. The specific objective of the present study is to document the species diversity of Kuppalli.

**Erials and Methods**

**Study area**

The study area, Kuppalli (13° 59′ 93″ and 75° 31′ 64″) is a small village in Thirthahalli taluk of Shivamogga district, Karnataka. Being the birth-place and childhood home of the renowned Kannada poet, Kuvempu (Kuppalli Venkatappa Puttappa), it is very famous tourist place. ‘Kavishaila’, on the top of small hill in Kuppalli, which is a rock monument, made of megalithic rocks and dedicated to Kuvempu, arranged in a circular fashion, the rocks have been placed to resemble the Stonehenge in England. At the center of this rock monument is the place where Kuvempu was laid to rest after his death and a memorial has been constructed at that location (<https://en.wikipedia.org/wiki/kuppalli>).

The forests of Kuppalli are of evergreen and semi-evergreen type dominating with Dipterocarps and Combrets. The average annual rainfall is

around 3019mm, temperature ranges between 18°-34 °C and average annual temperature is 23.7 °C. Kuppalli lies at an altitude of 699m.

**Methods**

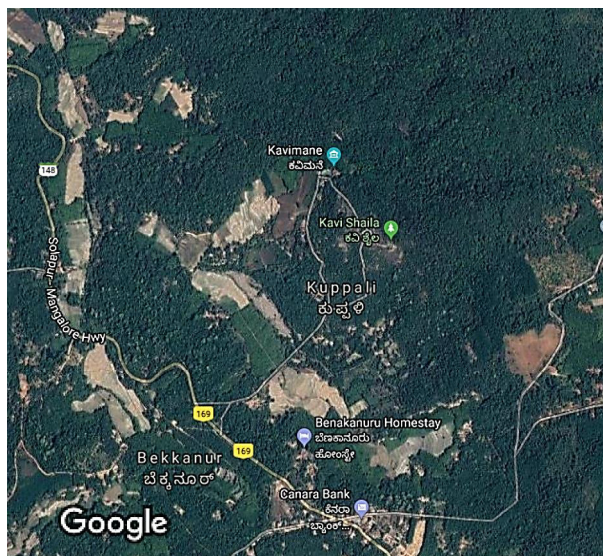
Field survey was carried out in forest areas surrounding Kuppalli region from June 2019 to May 2021 by random sampling method. In Random survey, all the flowering plant species were recorded and identified using available literatures and floras (Saldanha and Nicolson, 1976; Yoganarasimhan and Razi, 1981; Gamble, 1998; Bhat, 2000; Gowda, 2004; Ramaswamy *et al.*, 2001; Puneekar and Lakshminarasimhan, 2011; Bhat, 2014).

Names and families of the plants were validated by using The Plant list ([www.theplantlist.org](http://www.theplantlist.org)), Herbarium JCB (<http://florakarnataka.ces.iisc.ac.in/hjcb2>). All the recorded flowering plants were photographed.

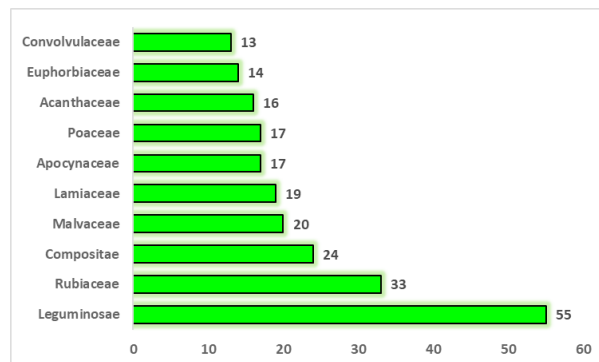
**Results**

In random survey, a total of 522 flowering plants belonging to 103 families and 371 genera of angiosperms were recorded in the Kuppalli region, Central Western Ghats, Karnataka. Family Leguminosae has highest number of individuals (55), which is followed by Rubiaceae (33), Compositae (24), Malvaceae (20), Lamiaceae (19) and so on are the important families of the study area (Fig. 2). Thirty-four families are having only one individual.

The genera *Ficus* have highest number of species (7), followed by *Leucas*, *Murdannia* and *Syzygium* with 6 species each, *Blumea*, *Cyperus*, *Garcinia*, *Ipomoea*, *Solanum* and *Spermacoce* with 5 species each



**Fig. 1.** Google map of the Kuppalli region, Thirthahalli taluk, Shivamogga district



**Fig. 2.** Dominant families of flowering plants in Kuppalli region

(Fig. 3). Many of the genera exhibiting only one species. Habit wise classification of flowering plants exhibits the presence of 193 herbs, 158 trees, 89 climbers, 60 shrubs, 15 epiphytes and 7 parasites (Fig. 4 and Table 1).

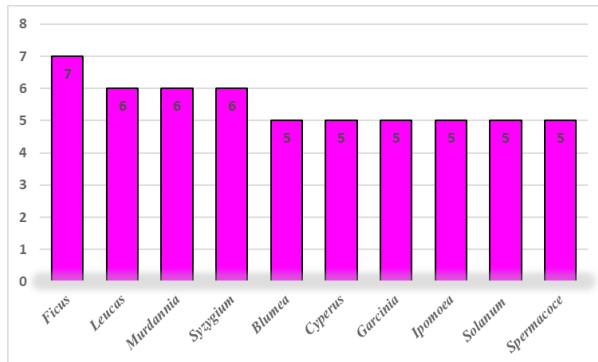


Fig. 3. Dominant genera of flowering plants in Kuppalli region

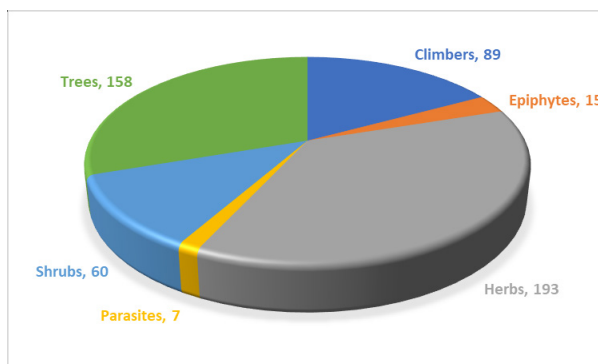


Fig. 4. Habit wise classification of occurred individuals of flowering plants

## Discussion

Bhat (2014) explored the floristic wealth of Dakshina Kannada district, observed 1,888 species of flowering plants belonging to 928 genera and 166 families and classified plants according to Angiosperm Phylogeny Group (APG) III. Whereas in our study, we observed 522 flowering plants belonging to 371 genera and 103 families in a miniature locality like Kuppalli and we classified plants according to APG IV system of classification.

Gunaga *et al.* (2012), investigated angiosperm diversity and assigning economic and conservation value of Kaan forests in Sagar Taluk of Central Western Ghats. The occurrence of 159 species of flowering plants belonging to 129 genera and 59 families in the evergreen forests of Sagar. In current

study in Kuppalli, Thirthahalli taluk yielded more momentous results in comparison to floristic diversity in terms of species richness.

The present study area Kuppalli region comes under the central part of the Western Ghats with evergreen and semi-evergreen forests. Many of the species are being used for various medications by the local nativaidyas and some of them are using these medicinally important species for various food preparations. Few RET species like *Alangium salviifolium* (L.f.) Wangerin, *Canarium strictum* Roxb., *Garcinia gummi-gutta* (L.) Roxb., *Gardenia gummifera* L.f., *Hedyotis cyanantha* Kurz, *Hopea ponga* (Dennst.) Mabb., *Vepris bilocularis* Engl. and *Vateria indica* L. are present in the study area.

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