Devagiri Journal of Science 6(1), 50-56
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www.devagirijournals.com
ISSN 2454-2091

Non native plants for aesthetic appeal

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Received: 29.09.2019

Revised and Accepted: 28.10.2020

Key words: Non native plants, Ornamental Potential, Gudalur, Tamil Nadu

Abstract

The present study on non native ornamental plant divesrsity of Gudalur taluk of Nilgiri district, Southern Western Ghats of Tamil Nadu reveals that, there are about 12 taxa belonging to 12 genera in 8 families. It is a pioneer attempt to reveal ornamental potentiality of such non native plants for both outdoor as well as indoor gardening.

1. Introduction

Ornamental plants have naturally occurred in the forest and highly ornamental features such as flowers, foliage and fruits (Lohr & Relf, 1993). Potential wild plants have long been prized for their beauty and planted in the garden around mankind's dwelling places (Farsana & Binu Thomas, 2016). The wild ornamental potential plants play an important role in environmental planning of urban and rural areas for abatement of pollution, social and rural forestry, wasteland development, afforestation and landscaping of outdoor and indoor spaces (Kappor and Sharga, 1993). The primitive man thus tried to group the plants according to their economical uses. In addition to these they also noticed the aesthetic potential of many wild plants (Singh and Jain, 1981).

Plants have formed part of the human existence since time immemorial. This enduring bond between mankind and plants has flowered into a profound human appreciation of plants as objects of beauty and of gardens as works of art. Almost all of us seem to have an intrinsic yearning for contact with nature. Plants exercise a strong, positive influence on human behaviour (Kaplan & Kaplan 1989; Harris 1992).

There are several ornamental plants which grow in nature in shade or partial shade and these may be gainfully employed as house plants in suitable climatic conditions (Bhattacharjee, 2004). Wild plants are a striking feature of the land surface. They vary greatly in composition and density in marked contrast with domesticated plants (Raju, 1998). They are the wild progenitors of the most of the present day ornamental flowers. They may be worthwhile to make use landscaping as well as house plants in suitable places (Aparna *et al.*, 2014).

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2. Study Area

2.1. Nilgiri District

The Nilgiris commonly termed as "Blue Mountains' is the highest mountain ranges of South India. These regions have wealth of diversity, which includes the varied floral and faunal diversity. The Nilgiris is one of the major hill stations that are home to around six different primitive tribal communities such as Todas, Kotas, Kurumbas, Irulars, Paniyars and the Kattunayakans with distinctive cultures. These tribal communities are residing in various ecological and geoclimatic conditions varying from plains, forests and grassland sholas to inaccessible areas.

2.2. Gudalur Taluk

Gudalur is a taluk which comes under Nilgiri district of Tamilnadu (11.50°N latitude and 76.50°E longitudes) The name Gudalur originated from "**Koodal**" and "**uru**" meaning the Meeting Place. It is situated at tri-junction of three States of Tamilnadu, Kerala and Karnataka of South India. Gudalur is the foot hills of the Nilgiri district, 50 Kms west of Ooty. It has an area of 504.52 Sq. Kms and altitude of 1117 meters above the sea level. Nearly one forth of the areas covered by forest. The total population of Gudalur Block is 2,23, 214 (2001 census) (Fig.1).

The regional economy of the area mainly depends on the tea plantations. In addition to that this area is rich in floral and faunal diversity. In lower altitude crops such as paddy and coconut also flourished. This area was an offspring to the exploration done by the British during the pre-independence period to cultivate tea. Various large companies own tea estates in the region. From the 1960s onwards, the region saw pioneering settlers moving in from neighbouring Kerala. Later, towards the end of the 1970s, the Tamil Nadu Government also granted refuge to a large number of Sri Lankan repatriates. This considerably changed the demography of the region. Gudalur is a place where one can see people from the two states of Tamil Nadu and Kerala live together cordially. Both Tamil and Malayalam are understood by most people of the town.

2.3. Temperature and rain fall

The high altitude of Gudalur taluk produces a cooler and wetter climate than the surrounding plains, making the region a popular retreat from the summer heat. During the summer months, the temperature reaches the maximum of 25^0 C to 32^0 C and minimum of 12^0 C to 15^0 C. May is the warmest month, While January is the coolest month.

The entire Gudalur taluk receives rain during the Southwest monsoon and North east monsoon. The normal average rainfall in this region varies from 1500 mm to 2600 mm.

2.4. Geology

The study area is basically region. The underlying rock in the area is crystalline throughout, mostly gneisses. In general the entire undisturbed plateau soil can be classified as 'humic ferralitic soil'. The soil profile of the study area falls under three major types such as clay soil, clayey loam and loam with laterite sub soil.

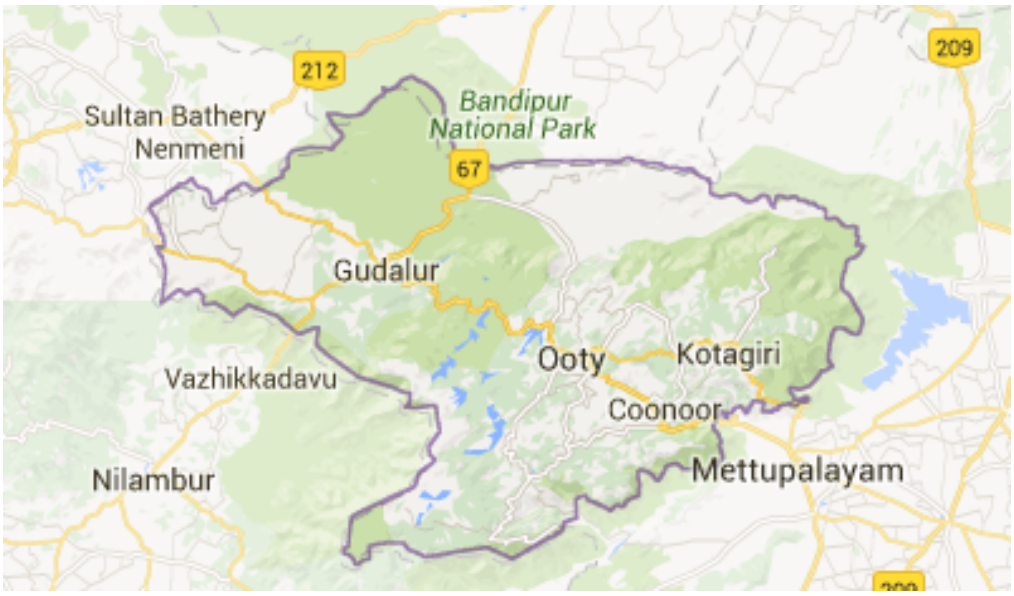


Fig. 1. Map of Nilgiri district of Tamil Nadu showing Gudalur Taluk

3. Materials and Methods

The present study is an attempt made to explore the diversity of potential ornamental plants from Gudalur taluk of the Southern Western Ghats of of Nilgiri district, Tamil Nadu. Extensive and intensive field trips were conducted during the year 2014 – 2013. During the field visits, the plant specimens were collected at different reproductive stages to prepare herbarium specimens and authenticate their correct identity. Also, the field characters such as habit, habitat, flower colour and the occurrence of the plant species were observed and are entered in the field note book.

The collected specimens were identified taxonomically with the help of available monographs, taxonomic revisions and floras (Hooker, 1984; Gamble and Fischer, 1915 – 1936; Matthew, 1983). The herbarium specimens were prepared according to the standard instructions given by Jain and Rao, (1976). The collected plant species were cross checked for correct identification. The voucher specimens were deposited in the Herbarium of Department of Botany, Bharathiar University, Coimbatore, Tamil Nadu (BHARATHI).

4. Result and Discussion

The present study was undertaken to enumerate the diversity of non native ornamental potential plants of Gudalur Taluk of Nilgiri district, Tamil Nadu. There are 12 taxa belonging to 12 genera in 8 families. Among these Asteraceae is represented with 3 species and Cactcaeae with 2 species and others represented with sigle species each. **(Tabel-1).** Studies on Aparna Prasad and Binu Thomas (2015) on ornamental potential plants from Meenachil taluk of Kottayam district, Kerala reveals that, there are 98 taxa belonging to 80 genera in 37 families were documented. The ornamental potentiality of documented plant species is mainly based on their attractive flower colour, good looking habit and various plant parts with

their beautiful appearance. The present study also emphasizes safe conservation and sustainable uses of wild resources are essential for future generations.

The study on wild ornamental flowering plants from Palakonda hills of Eastern Ghats in Andhra Pradesh, India were carried out by Suresh Babu *et al.* (2017). They identified 153 species belonging to 112 genera and 48 families is used as ornamental potentialities in study area. Similarly the diversity of wild ornamental potential plants in Mannavan shola forest of Southern western Ghats, Kerala was studied by Binu Thomas *et al*. (2011). According to their survey they noticed that there are about 35 species belonging to 18- families and 27- genera were identified as potential ornamental plants.

Non native ornamental palnts:

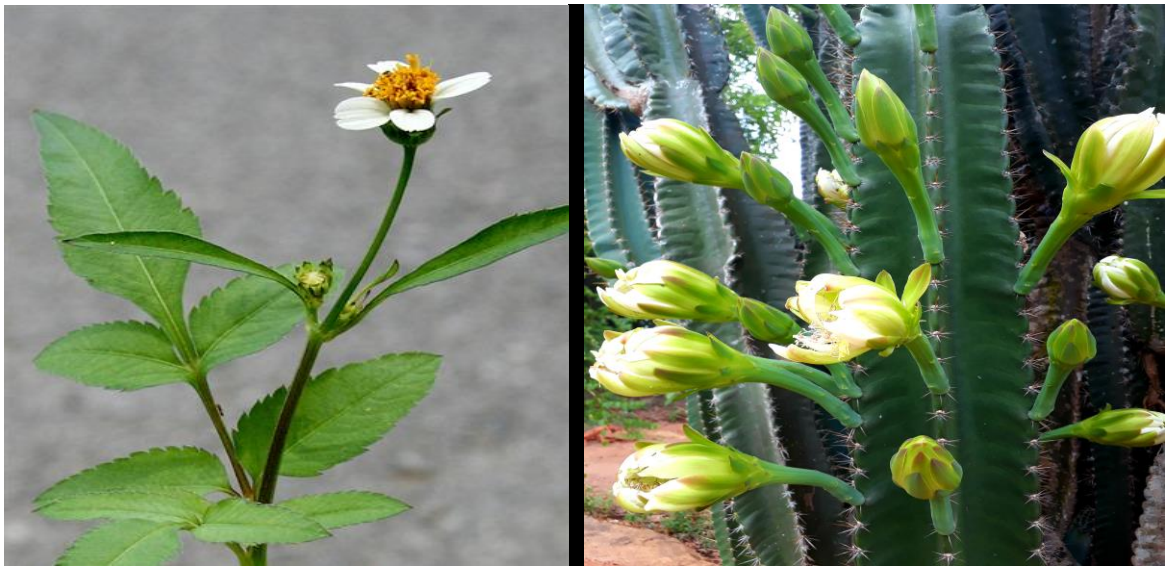
Many nonnative plant species are incontrovertibly a great benefit to society by serving as food, timber and ornamental plants (Ewel & Dowd, 1999). However, some of the non native plant species are particularly invasive, and therefore a bane to society when they negatively impact native biodiversity and cause huge economic expenditures (Parker & Simberloff, 1999; Pimentel & Lach, 2000). The present study resulted in the collection of 12 non native ornamental potential plants such as ***Argemone mexicana*** L., ***Bidens pilosa*** L., ***Cereus pterogonus*** Lam., ***Datura metel*** L., ***Erigeron karvinskianus*** DC., ***Lantana camara*** (L.) Mold., ***Melinis repens*** (Willd.) Zizke, ***Mirabilis Jalapa*** L., ***Opuntia stricta*** Haw. var. ***dillenii*** Ker-Gawl., ***Talinum portulacifolium*** (Forssk.) Asch., ***Tithonia diversifolia*** (Hemsl.) A. Gray Proc. and ***Tridax procumbens*** L., (**Table-5).**

Table-5. List of non-native ornamental plants from the study area

SI. No.	Botanical Name	Family	Ornamental potential	Nativity
1.	***Argemone mexicana*** L.	Papaveraceae	An attractive yellow flowers	West indies
2.	***Bidens pilosa*** L.	Asteraceae	An attractive florets and habit.	Tropical America
3.	***Cereus pterogonus*** Lam.	Cactaceae	Good looking succulent habit.	Tropical America
4.	***Datura metel*** L.	Solanaceae	Attractive white flowers.	Tropical and subtropical Africa
5.	***Erigeron karvinskianus*** DC.	Asteraceae	An attractive spreading habit and flowers	Mexico

6.	***Lantana camara*** (L.) Mold.,	Verbenaceae	A good looking flower.	Tropical America
7.	***Melinis repens*** (Willd.) Zizke	Poaceae	Good looking purplish spike-lets.	Africa
8.	***Mirabilis jalapa*** L.	Nyctaginaceae	Charming flowers.	Peru
9.	***Opuntia stricta***Haw. var. ***dillenii*** Ker-Gawl	Cactaceae	Good looking succulent habit with yellow flowers	America
10.	***Talinum portulacifolium*** (Forssk.) Asch.	Portulacaceae	Good looking succulent nature of habit with pink flowers	Africa
11.	***Tithonia diversifolia*** (Hemsl.) A. Gray Proc.	Asteraceae	Good looking yellow flowers	South America
12.	***Tridax procumbens*** L.	Asteraceae	Good looking flowers	C. America

Selected Plant Images



A. ***Bidens pilosa*** L. **B.** ***Cereus pterogonus***

C. ***Erigeron karvinskianus*** DC.

D. ***Tithonia diversifolia*** (Hemsl.) A. Gray

E. ***Opuntia stricta***Haw. var. ***dillenii***

F. ***Melinis repens*** (Willd.) Zizke

5. Conclusion

The present investigation on non native ornamental plant divesrsity of Gudalur taluk of Nilgiri district, Southern Western Ghats of Tamil Nadu, is a pioneer attempt to reveal ornamental potentiality of such introduced plants. Hence the present study also highlights an additional importance of introduced plants in ornamental value as concerned with respect to both outdoor as well as indoor gardening.

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