



POTENTIAL ORNAMENTAL CONVULVACEAN MEMBERS OF KOTTAYAM DISTRICT, KERALA, INDIA

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ABSTRACT

The present study noticed that, there are about, 23 species of family Convolvulaceae, which are documented from Kottayam District of Kerala is used as ornamental plants for both indoor as well as outdoor gardening. The ornamental potentialities of these plants are high lightened due to its attractive habit and good looking flowers. The safe conservation and sustainable uses of these wild resources is essential for future generations.

Keywords: Ornamental Plants, Convolvulaceae, Kottayam District, Kerala, India.

INTRODUCTION

Ornamental plants are grown usually for the purpose of beauty, for their fascinating foliage, flowers and their pleasant smell [1]. Climbers not only form important structural components but also play important ecological role in forest dynamics, diversity and nutrient recycling [2]. In addition to this some of the climbers are also utilized for ornamental purposes because of its attractive habit and flowers. These wild ornamental climbers are versatile group of plants and are used to cover fences, walls, trellis, buildings and arches [3]. Among these, many of these are used as both indoor as well as outdoor plants [4].

Climbers are typical constituents of rain forest. The distribution and abundance of climbing plants in forest varies greatly with the geographic locality of forest [5]. There is some evidence that vines are increasing in dominance in both tropical and temperate forests [6].

Most of the present day flowers have come from the wild progenitors, a few of which still exist in natural habitat. Ornamental plants used in horticulture should be understood as an expression of the human desire. These ornamental plants exercise a strong, positive influence on human behavior [7]. The various wild ornamentals are raises their aesthetic values in indoors and outdoors [8]. The domesticated wild plants are propagated in various horticultural methods such as cuttings, grafting, budding and seeds also. The ornamental horticulture is to be the main pathway for the introduction of native plants in to the country [9].

STUDY AREA

Kottayam district, Kerala. It is covering an area of 55.40 square kilometers (21.39 sq m). The general soil type is alluvial soil. The vegetation is mainly tropical evergreen and moist deciduous type. The climate in this district is moderate and pleasant. The particular location site of Kottayam district results in little seasonal temperature variation, with moderate to high levels of humidity. Annual temperatures range between 20 to 35 °C (68 to 95 °F). From June through September, the South-West monsoon brings in heavy rains. From October to December, Kottayam receives light rain from the Northwest Monsoon. The average annual rainfall is 3, 200 millimeters (130 in). The highest temperature recorded here was 38.5 °C and the lowest was 15 °C. Depending on the location and specific phyto-geographical condition of the district, there are varieties of food crops as well as cash crops are cultivated. Rice is



the principal crop extensively cultivated in low lying regions like Vaikom and Upper Kuttanad [10] (Fig. 1).

MATERIALS AND METHODS

The present study was based on an extensive survey and field observations during the year 2014 – 2015. In this study an attempts were made to find out the diversity of ornamental Convolvulaceae members, which are distributed in the Kottayam district, Kerala. During

the field visits, the plant specimens were collected at different reproductive stages to prepare herbarium specimens. The collected specimens were identified taxonomically with the help of available floras and literature [11, 12]. The specimens were processed for the preparation of Herbarium by standard methods [13]. The voucher specimens were deposited in the Herbaria of PG Department of Botany, Deva Matha College Kuravilangad, Kottayam for future reference.

Table 1. List of plants and their ornamental potentialities

SI No.	Botanical Name	Ornamental potentiality
1.	<i>Argyrea hirsuta</i> Wight & Arn. (Pl.1-A)	Because of the attractive flower and habit, this species can be used as wild ornamental species for growing over walls and buildings.
2.	<i>Evolvulus alsinoides</i> L.	The ornamental value of the plant is highlighted with its attractive prostrate habit with blue flowers.
3.	<i>Evolvulus nummularius</i> L.	Because of good looking prostrate habit with white flowers, this species is used to grow in hanging pots.
4.	<i>Ipomoea alba</i> L.	the plant having attractive flower and blossoms throughout the summer.
5.	<i>Ipomoea aquatica</i> Forssk.	Because of the attractive flower and habit, this species can be used as wild ornamental species.
6.	<i>Ipomoea cairica</i> (L.) Sweet (Pl.1-B)	Because of the attractive flower and habit, this species can be used as wild ornamental species.
7.	<i>Ipomoea carnea</i> Jack.	The Ornamental potentiality of this species is due to its fascinating pink to rose flowers.
8.	<i>Ipomoea hederifolia</i> L.	A well branched vine with broadly ovate-cordiform leaves having stunning red flowers, because this good looking habit, it is considered as one of the ornamental species.
9.	<i>Ipomoea indica</i> (Burm.f.) Merr. (Pl.1-C)	<i>Ipomoea indica</i> has been widely cultivated in garden for ornamental purposes because of its attractive flowers.
10.	<i>Ipomoea nil</i> (L.) Roth. (Pl.1-D)	The ornamental potentiality of the species is highlighted with its flowers. It appeared as various shades of blue, pink or rose, often with white stripes or edges or blends of colors.
11.	<i>Ipomoea obscura</i> (L.) Ker-Gawl.	Because of the attractive flowers, this species is used as wild ornamental species.
12.	<i>Ipomoea pes-caprae</i> (L.) R.Br. (Pl.1-E)	The flowers are pinkish lavender with purple red throats. They open in the early morning and close before noon each day that the plant is in bloom. Due to its attractive flower, the plant is used as ornamental species.
13.	<i>Ipomoea pes-tigridis</i> L. (Pl.1-F)	The ornamental potentiality is due to its delightful blue flowers.
14.	<i>Ipomoea purpurea</i> (L.) Roth. (Pl. 2-A)	Because of the attractive flower and habit, this species can be used as wild ornamental species.
15.	<i>Ipomoea quamoclit</i> L. (Pl. 2-B)	Because of the attractive flower and habit, this species can be used as wild ornamental species.
16.	<i>Ipomoea tricolor</i> Cav. (Pl. 2-C)	The ornamental potentiality is highlighted with its blue to violet corolla.
17.	<i>Ipomoea triloba</i> L.	Because of the attractive flower and habit, this species can be used as wild ornamental species.
18.	<i>Jacquemontia pentantha</i> (Jacq.) G.Don.	Climber with showy light blue to violet flowers.
19.	<i>Merremia tridentata</i> (L.) Hall. (Pl. 2-D)	The ornamental potentiality of the species is highlighted with its attractive habit with charming violet flowers.
20.	<i>Merremia turpethum</i> (L.) Shah	The ornamental potentiality of this species is highlighted with its attractive habit and flowers.
21.	<i>Merremia umbellata</i> (L.) Hall. (Pl. 2-E)	Because of the attractive white flower, this species is suggested for growing over wall for ornamental purposes



22.	<i>Merremia vitifolia</i> (Burm. f.) Hall. (Pl. 2-F)	Charming flowers with lemon yellow corolla is attracted by many horticulturalists.
23.	<i>Rivea hypocrateriformis</i> (Desr.) Choisy	Because of the attractive flower, this species is used as wild ornamental species.

RESULTS AND DISCUSSION

The present study noticed that, there are about, 23 species of family Convolvulaceae, which are documented from Kottayam District of Kerala is used for the ornamental purposes (Table-1). The ornamental potentiality is high lightened due to its attractive habit and good looking flowers. Out of 23 ornamental plants, 13 species are attracted because of their beautiful flowers, while 10 species are fascinated due to its striking habit and handsome flowers. More over all of these species are possessing climbing habit except the *Ipomoea carnea* Jack. These ornamental plants also allows to grow over walls, buildings as well as fences, this will brings more beauty and attractive look. The flowers of these members possessing various colours to attract people those who are

interested in gardening. Such people also prefer these species for indoor as well as outdoor gardening. The flower colour analysis of these members also reveals that, These plants are attracted due to its good looking colour of the flowers such as white (7 Nos.), blue (5 Nos.), pink (3 Nos.), yellow (2 Nos.), violet (2 Nos.), purple (2 Nos.) and red (2 Nos.) (Fig. 2). The studies on the potential ornamental climbers from Meenachil Taluk of Kottayam District, Kerala was done by Aparna *et al.*

(2014). They highlights, the ornamental potentialities of 12 climbing species, which were documented from study are attracted due to its gorgeous flowers and good looking habit.

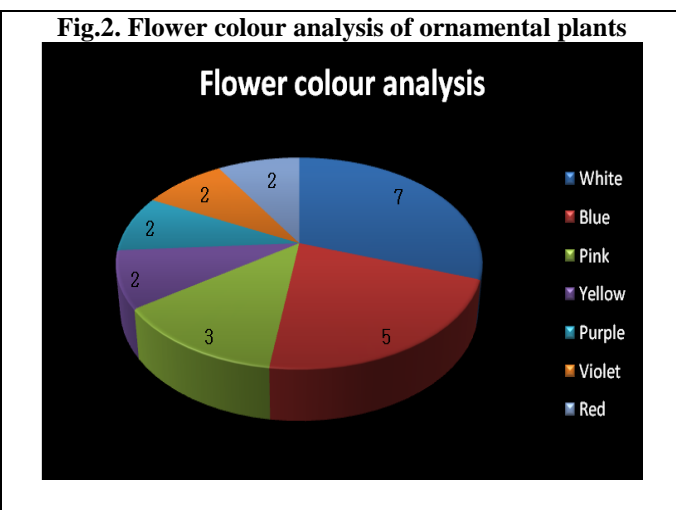


Plate-1





C) *Ipomoea indica* (Burm.f.) Merr.



D) *Ipomoea nil* (L.) Roth.



E) *Ipomoea pes-caprae* (L.) R.Br.



F) *Ipomoea pes-tigridis* L.

Plate-2



A) *Ipomoea purpurea* (L.) Roth.



B) *Ipomoea quamoclit* L.



C) *Ipomoea tricolor* Cav.



D) *Merremia tridentata* (L.) Hall.



E) *Merremia umbellata* (L.) Hall.



F) *Merremia vitifolia* (Burm.f.)Hall.

CONCLUSION

Through the present study we hope to convey that, the various Convolvulacean members, which are documented from the study area, are possessing ornamental potentialities in their attractive habit and flowers. The present survey also noticed that, some of the threatened factors like fast rate of biotic interference, destruction of natural habitat by human interference, invasion of some exotic weeds and unsustainable

utilization of natural resources may adversely affect the existing diversity of plants specially the members of Convolvulaceae in the study area. The safe conservation and sustainable uses of wild resources is essential for future generations. The lack of awareness about conservation and the balance of nature many of our wildlife habitats are lost forever. So conservation of wild plant resources will help to maintain the balance of nature to a wide extend.

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