

STUDY OF FAMILY CONVULVULACEAE FROM KARJAT AND JAMKHED TEHSIL IN (AHMEDNAGAR) AHILYANAGAR DISTRICT (MS), INDIA

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ABSTRACT

The present study focuses on the collection, identification, classification, and documentation of the members of the plant family Convolvulaceae from the Karjat and Jamkhed area, Ahilyanagar (Ahmednagar), M.S., India. The present study of plants is important to understand their current knowledge of regional floristic diversity. The angiosperms are flowering plants with a great evolutionary history. They include near about 3,60,000 known species in globally. Unfortunately, several angiosperm species in our nation remain unexplored. It is commonly called the bindweeds or morning glories, a family of about 60 genera and more than 1,650 species. These species are primarily herbaceous vines, but also include trees, shrubs, and herbs. The tubers of several species are edible, the best known of which is the sweet potato. In this area, such kind of taxonomic work is not been carried out yet, therefore, we took this research work to find out floristic diversity. We carried out this taxonomic work from March 2022 to up till date. As per conventional taxonomic techniques, plant materials were collected, prepared as herbarium specimens, and documented at the research center. Of the 20 plant species that were collected during the field surveys were identified with the help of some authentic floras, i.e., the Flora of Presidency of Bombay Volume I, II, and III, and Flora of Ahmednagar district, taxonomic literature, and taxonomy experts.

INTRODUCTION

A study of Floristic diversity is very important to understand the vegetation of any area. Floristic diversity can be quantified at any scale, ranging from the total variety of the World to the diversity of an ecosystem, population, species, and even individual genes. India has the World's top biodiversity. Plant species belonging to the family Convolvulaceae mostly grow as climbers and prostrate climbers (Maitreya, 2015). According to Yadav *et al.* (2018), the Convolvulaceae family, commonly known as the morning glory or bindweed family. It is a diverse group of plants that includes approximately 60 genera and over 1650 species. Distributed primarily in tropical and subtropical regions of the world. These plants exhibit a wide range of morphological forms, from herbs and shrubs to climbing vines, and are often characterized by their showy, funnel-shaped flowers and twining growth habits. The family has significant ecological, cultural, and economic importance, playing key roles in ornamental gardening, traditional medicine, and as sources of food with bioactive compounds (Undirwade *et al.*, 2015). Research into the Convolvulaceae family spans multiple disciplines, including taxonomy, ecology, medicine, and biotechnology. One of the most well-known genera within this family is *Ipomoea*, which includes economically important species such as *Ipomoea batatas* (sweet potato), with high in starch, and *Ipomoea tricolor* (Sahu *et al.*, 2014). Many species

from this family have also been studied for their medicinal properties. Certain alkaloids and other bioactive molecules have demonstrated potential therapeutic effects. This family member has highly medicinal properties in some members, viz., anticancer property in *Ipomoea hederifolia* L. and *Ipomoea triloba* L. used to treatment of headaches and stomach aches (Shaikh 2022). This research aims to explore the diversity, ecological roles, medicinal uses, and ongoing scientific investigations into the Convolvulaceae family. By providing a comprehensive overview, this paper seeks to offer insights into the growing interest in family Convolvulaceae for both ecological studies and their potential applications in human health.

MATERIALS AND METHODS:

About the Study area:

Karjat and Jamkhed Tehsil are located in Ahilyanagar (Ahmednagar) district of Maharashtra (India). In the research area, 119 villages in Karjat Tehsil and 90 villages in Jamkhed Tehsil. Karjat and Jamkhed Tehsil are prone area. In Karjat and Jamkhed, various diversity are present in the located area. Karjat is located within 18°19'86" N to 18°49'86" N latitude and 74°13'20" E to 75°13'20" E longitude. Karjat Tehsil contains the boundaries of five tehsils and three districts. Karamala (Solapur), Shrigonda, Ashti (Beed), Jamkhed, Daund (Pune). The average rainfall in Karjat is 650 mm to 700mm, and the total area is 1440 km². There is extreme temp. In summer, around 40°C and typically range between 38°C and 45°C. Jamkhed Tehsil

contains the boundaries of five Tehsils and three districts. Pranda (Dharashi), Karjat, Karamala (Solapur), Patoda, Ashti (Beed). Jamkhed is located within 18°44' 16.8360" N to 75°18' 43.4340" E and Latitude 18.738010 and Longitude 75.312065

Study Area Map

(figure 1). The average rainfall in Jamkhed is 700mm to 750mm, and the total area is 878.62km². There is extreme temp. In summer, around 40°C and typically ranges between 34°C to 42°C.

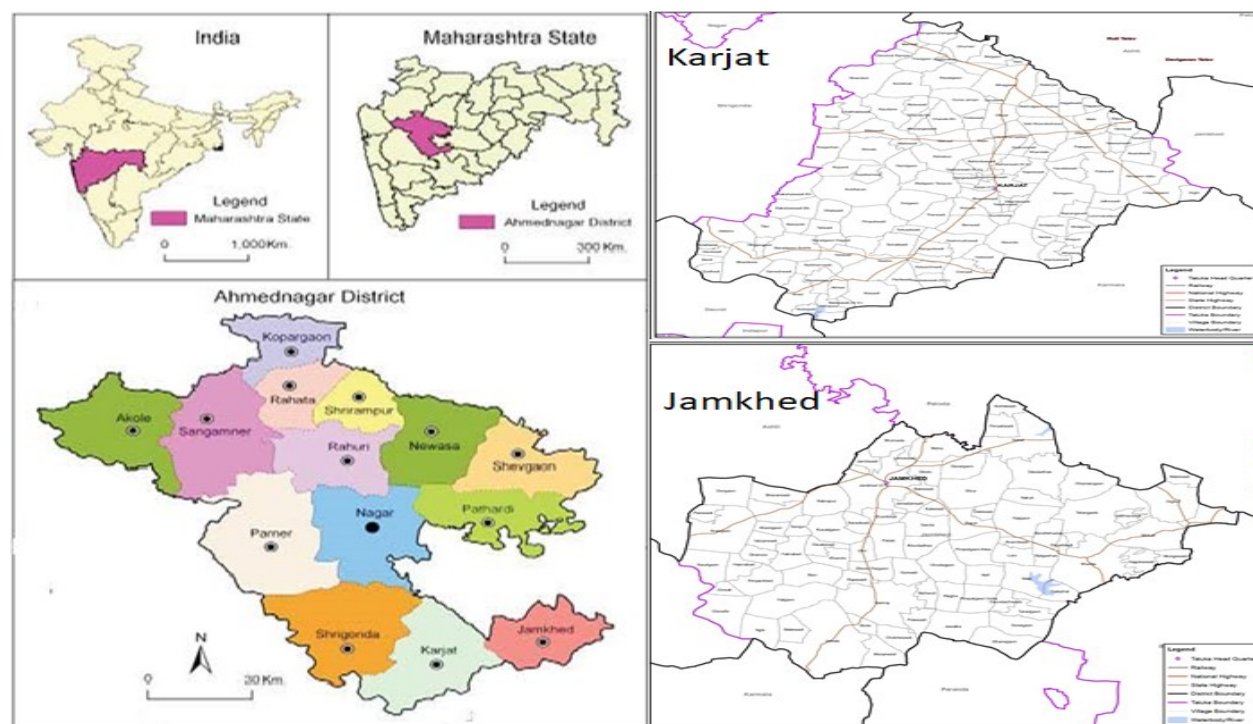


Figure 1: Map of study area

Methodology

For the present investigation field visits were arranged frequently from time to time in the study area. In the present years 2022 to 2024, extensive field surveys and investigations were conducted to cover the growth during the monsoon, winter, and summer seasons. Floristic diversity was studied, and photographs were taken in flowering conditions (Jana *et al.*, 2020). Live plant specimens were collected in plastic bags (flowering twigs about 6 to 12 inches). Drying plant material by newspaper and mounting on card sheet paper, and preparing herbarium specimens. Plant samples were based on their physical and reproductive characteristics. 20 plant species of Convolvulaceae were collected during the field surveys and were recognized with the help of some authentic floras, i.e., the Flora of Presidency of Bombay Volume I, II, and III, (Cooke, 1908; 1958) and Flora of Ahmednagar district by Pradhan *et al.* (1999). The flora of Baramati district (Bhagat *et al.*, 2008). Flora of Solapur district (Gaikwad *et al.*, 2015). Taxonomic literature and taxonomy experts from the Department of Botany, Vidya Pratishthan's Arts, Science and Commerce, College, Vidyanagari, Baramati.

RESULTS AND DISCUSSION

Table 1: Observation Table showing Family Convolvulaceae plant species in Karjat & Jamkhed tehsil of Ahmednagar district (M.S), India.

Sr. No	Scientific Name	Vernacular/ Local name	Flowering season	Locality (Villages)
1.	<i>Convolvulus arvensis</i> L.	Chandvel	July- December	Anandwadi
2.	<i>Evolvulus alsinoides</i> (L.) L.	Vishnukranta	Almost throughout year	Baradgaon Dagadi
3.	<i>Ipomoea aquatic</i> Forssk.	Nalachi Bhaji	Sept- December	Autewadi
4.	<i>Ipomoea batatas</i> (L.) Lam	Ratali	Sept- December	Chapadgaon
5.	<i>Ipomoea cairica</i> (L.) Sweet	Garvel	Oct-April	Bahirobawadi
6.	<i>Ipomoea carnea</i> Jacq.	Besharam	Throughout year	Batevadi
7.	<i>Ipomoea eriocarpa</i> R.Br.	Ranbhovari	July- Aug	Chapadgaon

8.	<i>Ipomoea nil</i> (L.) Roth	Neelpushpi	Sept- December	Jamkhed
9.	<i>Ipomoea obscura</i> (L.) Ker Gawl.	Pungali	Mostly throughout year	Khorda
10.	<i>Ipomoea pes-tigridis</i> L	Vaghpadi	Sept- December	Anandwadi
11.	<i>Ipomoea quamoclit</i> L.	Ganeshvel	Sept- December	Chincholikaldat
12.	<i>Ipomoea muricata</i> (L.) Jacq.	Bhingari	Jan- March	Deshmukhwadi
13.	<i>Ipomoea hederifolia</i> L.	Lal Pungali	Oct- March	Dighi
14.	<i>Ipomoea triloba</i> L.	Ivali bhovari	Oct- January	Handalwadi
15.	<i>Jacquemontia coerulea</i> Choisy	Blue bel	Sept- December	Ganeshwadi
16.	<i>Merremia emarginata</i> (Burm. .f) Hallier f.	Undirkani	Oct- January	Durgaon
17.	<i>Merremia dissecta</i> Hallier f.	Nagin	July- April	Jalgaon/ Pategaon
18.	<i>Operculina turpethum</i> (L.) Silva Manso	Nishottar	Jan- May	Patharwadi
19.	<i>Rivea hypocrateriformis</i> Choisy.	Sanjavel	Jan- March	Rashin
20.	<i>Stictocardia tiliifolia</i> (Desr.) Hallier f.	Spottedheart	Jan- May	Autewadi/ Khed

CONCLUSION

Overall, the current study is significant for understanding the current status family Convolvulaceae plant species of Karjat Jamkhed Tehsil of Ahilyanagar. The present study total of 20 plant species of the family Convolvulaceae have been recorded. The dominant genera is *Ipomoea*. It is 60% of all species. Some species grow in aquatic plants (*Ipomoea aquatica*) and some grow in desert conditions (*Ipomoea eriocarpa*). Further floristic survey is needed to save and conserve this floral biodiversity.

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