



***Passiflora foetida* var. *foetida* (Passifloraceae): A New Addition to the Flora of Maharashtra, India**

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The presence of *Passiflora foetida* var. *foetida* (Passifloraceae), a climbing hirsute herb known for its ecological and ethnobotanical significance, is reported for the first time in Maharashtra, India. During floristic surveys conducted in Chalisgaon tahsil of district Jalgaon. This discovery provides insights into its distribution, habitat preferences, phenology, and conservational note accompanied by color photo plate. This species was identified based on morphological and taxonomic analysis. The newly added species contribute to the understanding of regional biodiversity. Such new species underscores the importance of regional floristic surveys in uncovering overlooked or newly introduced species and the need for further surveys and conservation efforts to protect lesser-known plant species in Maharashtra's diverse ecosystems.

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1. INTRODUCTION

Passiflora L., with over 570 species (Pérez & d'Eeckenbrugge, 2017), is the biggest and most diverse genus within the Passifloraceae family, with the majority of its species located across Central and South America, as well as tropical regions in both the Old and New Worlds, totalling around 24 species. Indigenous to Asia and Australia (Vanderplank, 2013) Primarily perennial vines, herbaceous climbers, and weak trees ascend via elongated tendrils.

Passiflora is distinctive in its extrafloral (sometimes petiolar) nectaries, glandular-tipped bracts, elevated androgynophore, and corona of 1–7 filaments. Some species feature a 5-merous calyx and corolla, three joined carpels, and five stamens (Ulmer & MacDougal, 2004). Few plant groupings have as much leaf morphology as *Passiflora*, according to Killip (1938).

Authors found a weedy hirsute climber with white flowers in 2023-24. Critical examination of species with valid major literature published (Vanderplank 2013), Killip (1938) and Feuillet & MacDougal, 2003; Green, 1972; Cooke, 1903, Linnaeus, 1759; Hooker, 1872; Sarvalingam et al., 2020; Svoboda & et al., 2016; Svoboda, 2018 reveals it as *Passiflora foetida* var. *foetida* of Passifloraceae (Fig. 1). It's different than *Passiflora vesicaria* var. *vesicaria* in having completely white flowers and green fruit at maturity. According to published literature, Almeida, 1998; Singh & al., 2001; Reddy, C. S., & Pattanaik, C., 2009; Nayar and shastri, 1887; Undirwade & Bhuktar, 2023, it is new to Flora Maharashtra. Thus, the present collection adds new species establishes a new distributional record for biodiversity of state Maharashtra.

2. TAXONOMIC TREATMENT

2.1 *Passiflora foetida* L. var. *foetida*.

Passiflora foetida var. *ellisonii* Vanderpl. in Bot. Mag. 30: 380. 2013; A. Sarvalingam et al., Int. J. Botanical studies, 5 (5): 81-84, 2020. *P. foetida* f. *glabra* A. Fern. & R. Fern. in Garcia de Orta 5: 708. 1957. *P. foetida* var. *tainaniana* Y.C. Liu & C.H. Ou in Bull. Exp. Forest Natl. Chung Hsing Univ. 4: 743. 1982.

Annual hirsute climber, stem terete, can reach a height of 5-6 meters, exhibiting significant

pubescence all over; stipules present at each node, with gland-tipped partitions. Leaves are arranged alternately, with petioles of 2-3 cm in length, exhibiting a green colour with a somewhat pink underside, and are hairy. Leaves about 8-9 cm in length, 3-6 cm in width, shallowly tri-lobed, glabrous on both sides, with an entire border including gland-tipped cilia, and cordate at the base. Peduncles around 4-6 cm in length, one per node. Bracts about 2-3 cm in length and 2-3 cm in width, bipinnatisect with gland-tipped segments. Tendrils robust, around 7-8 cm in length. Flowers are pure white, about 4-5 cm in across. Sepals are ovate-lanceolate, measuring 2-2.4 cm in length and 5-8 mm in width, white on the adaxial surface, green, hirsute, ribbed, and keeled with an awn on the abaxial surface. Petals are lanceolate, measuring 1-2.5 cm in length and 5–8 mm in width, exhibiting a white coloration on both surfaces. Corona filaments arranged in five series; the outer two series are filiform, white with a little mauve hue at the tips and base, measuring 1-2 mm in length. Stamens are cohesive at the base, and the style-3 pale green in colour. Ovary oval or subglobose, pilose, approximately 3 mm. Fruit oblong to globose, green at maturity, rigidly hairy, turning deciduous, measuring 1.5-2.2 cm in diameter. Seed compressed, flattened, scutiform, reticulate on both surfaces, tridentate at the apex, measuring 4-5 mm in length and 2-2.5 mm in width.

Flowering: October-November

Fruiting: November-March

Habitat: The weedy hirsute climber was found naturally growing along the small nallah in wild interspersed with other trees, shrubs and climbers forming the thick cover over the associated plants. Specimen collected was growing and found more compatible with *Neltuma juliflora* (Sw.) Raf., *Cryptostegia grandiflora* Roxb. ex R.Br. Present species occurrence in Rahipuri, Chalisgaon tehsil of district Jalgaon, Maharashtra state is located at 20.549161° N, 74.999623° E, Elevation-305.43.

Conservational note: This newly added species is uncommon thus needs the strategical implementations to conserve the same. Overgrazing in grasslands and along the regions of its habitat may devastate the species.

Traditional medicinal uses: Passion flower species are utilized in folk medicine from long. According to Ravi B.B et al (2015) Unripe fruit, larval infected leaves, and herbage decoction are emetic and diuretic. Leaves and fruits relieve

asthma and biliousness. Anxiety can be treated using leaves and root decoction. This species can cure dyspepsia and diarrhoea and act as an astringent and expectorant for nerve disorders and spasms.

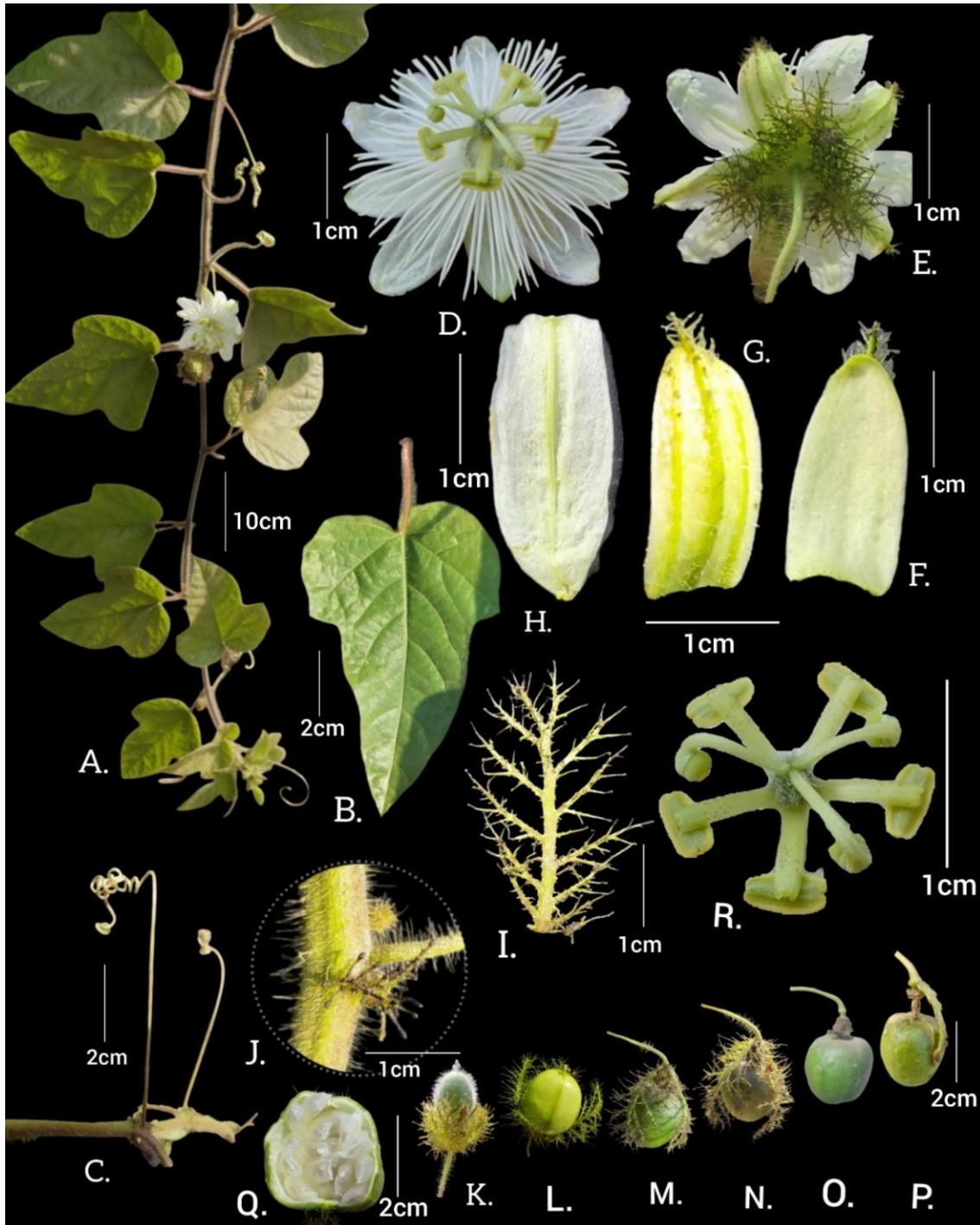


Fig. 1. *Passiflora foetida* L. var. *foetida*

A. Habit B. Leaf C. Tendril D. Flower side view E. Flower abaxial view F. & G. Calyx adaxial and abaxial respectively H. Petal I. Bract J. Stipule K - P. Different Stages of fruit Q. Dissected Fruit with seeds R. Androgynophore top view

Native to: Argentina, Bahamas, Belize, Bolivia, Brazil, Chile North, Colombia, Costa Rica, Cuba, Dominican Republic, Guyana, Jamaica, Leeward Island., Mexico, Netherlands Antilles, Nicaragua, Panamá, Paraguay, Peru, Puerto Rico, Suriname, Texas, Trinidad-Tobago, Uruguay, Venezuela, Venezuelan Antilles, Windward Is.

Introduced to: Andaman Nicobar Islands., Assam, Bangladesh, Burundi, Cambodia, Cameroon, China, East Himalaya, Ghana, Hawaii, India, Jawa, Kenya, Malaya, Maluku, Myanmar, New Caledonia, New Guinea, New South Nigeria, Pakistan, Philippines, Sri Lanka, Thailand.

2.2 Specimens Examined

INDIA: Andaman & Nicobar Islands, Near to Vicas Nagar, Kamorta, Nicobar, 07.10.2011, S. Prabhu & R. Sathiyaseelan, 353 (image!), (PBL0000031062). Andhra Pradesh, Sunnapu Botlu, Neridi, 28.07.2015, S. Nagaraju & K. Prasad; 5874 (image!), (BSID0015909). Bihar, Baraila wetland, 08.11.2017, K. Avinash Bharati, 64219 (image!), (CAL0000032496). Telangana, Kompalli, 26.05.2007, K. Chandra Sekar, 142 (image!), (BSID0012028). Odisha, Majhipada section, 10.11.2014, K.C. Mohan; 6153 (image!), (BSID0010832).

3. CONCLUSION

In this research, *Passiflora foetida* var. *foetida* is reported for the first time in Maharashtra, increasing its known range beyond Karnataka, Kerala, and Tamil Nadu. This new record shows the species' adaptation to varied ecological settings and urges more botanical investigation in Maharashtra to comprehend its floristic variety. This result may impact conservation strategies and ecological research due to the species' potential medicinal and ecological relevance.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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