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THREE NEW ADDITIONS TO THE FLORA OF MARATHWADA REGION, MAHARASHTRA, INDIA

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ABSTRACT

Marathwada lies in southern region of Maharashtra state and holds a quite vast array of life forms. During the present study conducted in different areas of Marathwada region three new plant species are found to be new records for this region. During botanical exploration of Marathwada region, 03 interesting species belonging to families *Malvaceae* Juss and *Moraceae* Gaudich were collected and examined with the help of literature and revealed that they were new record for Marathwada region. All of them have been identified as *Sterculia villosa* Roxb., *Ficus mollis* Vahl, *Ficus johannis* subsp. *afghanistanica* (Warb.) Browicz.

Key words : Marathwada, Deccan, Flora of Marathwada, New additions.

Introduction

Marathwada region forms the part of vast Deccan plateau and liesin the southwestern portion of Maharashtra state.The region comprises of total 8 districts and geographically lies between 70^0 5'–78^0 5'N latitude & 17^0 5'–20^0 5'E longitude. Topographically Marathwada is divided into two main regions including Balaghat plateau (Known for rocky terrain and relatively high elevation then the payanghat plateau) and Payanghat plateau, which is characterised by fertile planes and undulating terrain. The main perennial river which flows through northern part of Marathwada region is Godavari River, which plays a significant role in shaping the soil composition of the region. Geology of Marathwada region is dominated by deccan traps and alluvial deposits. Two major soil types found in this region are red soil and black cotton soil. The climate of Marathwada region is typicallydry and semi-arid climate due to experiencing low rainfall in this area. Dry climatic condition mainly influences different forest type such as Tropical Dry Deciduous, Thorn forests, Open scrub jungles and Grasslands (Naik, 1981). The Marathwada region has four wildlife sanctuaries, first is Gautala Wildlife sanctuary, which is situated in Aurangabad district. Naigaon Mayur Wildlife Sanctuary is situated in Beed district while Yedshi *Ramling Wildlife Sanctuary* and *Painganga Wildlife Sanctuary* are situated in Osmanabad districtand Nanded district of Marathwada. According to forest survey of India, 2019 Marathwada region has forest cover of approximately 16.53% and the area covered by forest is around 17,665 square Kilometres.

Naik (1998a and 1998b), made an account to enumerate flora of Marathwada region and published his work under the title 'Flora of Marathwada', since then many sporadic works have reported new addition to the flora (Rathor and Chavan, 2002; Sonje *et al.*, 2007; Rathor *et al.*, 2007; Kare *et al.*, 2008; Survase and Sardesai, 2009; Gore and Gaikwad, 2012; Kamble *et al.*, 2013; Gaikwad, 2014; Sardesai, 2013; Raut *et al.*, 2016; Bhosale, 2017; Chavan, 2013; Sonule, 2019; Giridhari, 2020; Kamble, 2016; Reddy, 2021; Khan, 2023; Waghire, 2010).

Materials and Methods

During the exploration of floristic diversity of Marathwada region second author collected some

Fig. 1 : (A,B): *Sterculia villosa* Roxb., (C,D): *Ficus johannis* subsp. *afghanistanica* (Warb.) Browicz (E,F & G): *Ficus mollis* Vahl.

interesting specimen from different habitats, further going through the Flora of Marathwada (Naik, 1998) the specimens did not match with the given description of the species of respected families hence by using relevant literature (Muhaffar, 2021; Tadavi, 2023; Chaudhary, 2012; Mali, 2008; Madhukar, 2019). The specimens were identified as *Sterculia villosa* Roxb. (Malvaceae), *Ficus mollis* Vahl. (Moraceae) *Ficus johannis* sub sp. *afghanistanica* (Warb.) Browicz. (Moraceae). Species from Genus Ficus were confirmed by Dr. J.V. Sudhakar, Botanical Survey of India southern regional centre, Coimbatore. Few specimens of each species were collected and processed by following standard method (Vogel, 1987; Rao and Sharma, 1990).

Results and Discussion

This is first report of *Sterculia villosa* Roxb., *Ficus mollis* Vahl., *Ficus johannis* sub sp. *afghanistanica* (Warb.) Browicz. from Marathwada region of Maharashtra. After studying these three plant species it was found that *Sterculia villosa* Roxb, consists of high antioxidant activity and is used in various medicinal aspects for treating different problems related to health including respiratory issues, skin issues and digestive issues. The genus *Ficus* is the largest genus in the family Moraceae. Munna (2013) studied constituents of *Ficus mollis* Vahl., offered significant protection against hypoglycaemic condition, where blood sugar gets lower than the standard range and hypolipidemic conditions in which lipid levels lowers in the blood. Tadavi (2023) studied phytochemicals found in *Ficus johannis* subsp. *afghanistanica* (Warb.) Browicz to have ability to produce noval medicines due to presence of phyto constitutes in it. *Ficus johannis* subsp. *afghanistanica* (Warb.) Browicz was very recently reported from India (Muhaffar, 2021) and previously was only known from Afghanistan, Iran, Tadzhikistan and Turkey.

Sterculia villosa Roxb. ex DC. Prodr. 1: 483. 1824; Mast. in Hook. f. Fl. Brit. India 1: 355. 1874; Cooke, Fl. Pres. Bombay 1: 132. 1958 (Repr.); Malick in Sharma *et al*. Fl. India 3: 472. 1993; Almeida, Fl. Mah. 1:147. 1996.

Deciduous trees, up to 10 m Hight, with soft grey-white bark, leaves simple, alternate, palmately compound with 5-7 lobed, cordate at the base, apex caudate. Stipules are free, lateral and caducous, Inflorescence subterminal on branchlets, panicle 15-13 cm long, rusty pubescent, flowers unisexual, pedicellate, polygamous, bracteole filiform, caducous, calyx yellow campanulate, lower side pubescent while upper is glabrous, lobes are lanceolate with apex acuminate, Male flowers with 10 stamens; anthers sessile; staminodes 10. Female flowers with 5 free carpels, hairy, ovary globous, strigose, Pentalocular strigose with stellate hairs, gynophorestout, cylindrical style stout, hairy, deflexed. Fruit aggregate of 2-7 follicles brown, tomentose, seeds many, black, smooth.

Specimen examined : India, Maharashtra, Chhatrapati Sambhaji Nagar District, Hiwarkheda: MMG 615.

N 20º17′23.96º E 75º08′13.92º

Elevation: 666m

Flowering and Fruiting: February -April

Distribution: Maharashtra, Karnataka, Tamil Nadu, Kerela

Ficus mollis Vahl, Symb. Bot. 1: 82. 1790; Corner in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 3: 249, f. 12. 1981. *F. tomentosa* Roxb. ex Willd. Sp. Pl. 4: 1136. 1806; King in Ann. Roy. Bot. Gard. Calcutta 1: 22, t. 18. 1887

& in Hook. f. Fl. Brit. India 5: 501. 1888; Cooke, Fl. Pres. Bombay 3: 146. 1958 (Repr.).

A large deciduous tree up to 15 m hight, dioicous, arial roots present few or more in number. Leaves simple, alternate, stipulate elliptic to ovate, sub-cordate at base and entire leaf margin, apex is broadly acute, leaf surface with strigose hairs. Leaf lamina oblong obovate, elliptical tomentose on both surfaces up to 3-9 cm. Inflorescence asyconium. Figs sessile in axillary pairs. Sub globular in shape with tomentose hairs, basal bracts in number of three covering the fig Flowers unisexual inconspicuous, tepals four free, reddish in colour. Stamen one, anther oblong. Female flower sessile, tepalsfour, distinct to connate, imbricate to valvate activation. Ovary Bicarpellary superior with apical placentation. Fruit a syconium 5-8 mm across, fleshy, grey, tomentose; achenes smooth.

Specimen examined : India, Maharashtra, Latur District, Wadwal Hatti Bet: MMG 709.

N 18º18′38.21º E 76º57′56.55º

Elevation : 668m

Flowering and Fruiting : December -June

Distribution : Maharashtra, Kerela, Karnataka, Tamil Nadu

Ficus johannis Boiss. subsp. *afghanistanica* (Warb.) Browicz in Rechinger, Fl. Iranica 153: 11, t. 6. 1982; Shaikh *et al.*, J. Jpn. Bot. 96(1): 21-24.2021. *Ficus afghanistanica* Warb. in Urban & Graebn., Festschr. Aschers: 369 (1904).

A shrub or tree up to 3m or more dioecious, leaf twigs solid cylindrical, stipulate leaves simple alternate, broadly ovate to orbicular, leaf base is cordate to tunicate. Palmately compound with 3-5 lobed, leaf coriaceous, hairless, minutely pubescent, scabrous on both sides. Margin is distinctly dentate; leaf apex obtuse. Petiole is 3-7 cm long velvet-hairy or hairless. Fig's solitary axillary, with long peduncle, globous or sub globous in shape. Puberulous to densely pubescent, rarely tomentose.

Specimen examined : India, Maharashtra, Chhatrapati Sambhaji Nagar District Adgaon Maholi: MMG 762.

N 19º57′53.3592º E 75º29′32.4456º

Elevation : 666m

Flowering and Fruiting:

Distribution : Afghanistan, Iran, Tadzhikistan, Turkey, India (now from Marathwada).

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