PLANT SCIENCE TODAY
Vol XX(1): 1-XX
https://doi.org/10.14719/pst.16570

eISSN 2348-1900
OPEN ACCESS

Research Communication | Taxonomy 2026, Volume XX, Issue X, pp. 1-XX

Melochia nodiflora Sw. (Malvaceae): A new distributional record from Andhra Pradesh, India

Mohd Kashif Husain[1*], Goli Penchala Pratap[1*], Vallepu Nagaraju[2] & Ghazala Javed[1]

[1]Survey of Medicinal Plants Unit, National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad 500 038, Telangana, India

[2]National Institute of Indian Medical Heritage (NIIMH), Hyderabad 500 036, Telangana, India

***Correspondence:** kashifptc@gmail.com; penchalapratap.goli@gmail.com

Abstract

Melochia nodiflora Sw. (Malvaceae) is a shrub or undershrub, native to tropical and subtropical regions, with a limited distribution record in India. During the recent floristic and ethnobotanical studies in Chittoor district, Andhra Pradesh, natural populations of *M. nodiflora* were encountered at Aragonda Hill, near Ardhagiri Anjaneya Swamy Temple, Madhavaram and Peddakappalle. The species was confirmed by frequent field observations, morphological examination and taxonomic studies using relevant literature, diagnostic taxonomic keys and herbarium specimens. The plant is commonly found near water canals, cultivated lands and foothills, in association with other herbaceous and shrubby vegetation, such as *Hibiscus vitifolius* L., Acmella uliginosa (Sw.) Cass., *Carissa spinarum* L., *Blepharis maderaspatensis* (L.) B.Heyne ex Roth, Commicarpus chinensis (L.) Heimerl etc. The collected specimens were critically compared with other Indian species of *Melochia*, including *M. parvifolia, M. pyramidata, M. corchorifolia and M. umbellata*, based on habit, stem indumentum, leaf morphology, inflorescence, floral characters, fruit and seed morphology, as reported in recent literature. The identity of the species was further verified through comparison with authenticated herbarium material and consultation of relevant online taxonomic databases and recent floristic literature. The present study concludes the occurrence of *M. nodiflora* in Chittoor district and represents a new distributional record for Andhra Pradesh and provide a detailed description, diagnostic comparison with allied species, distributional information and photographs to facilitate its easy identification. This record extends the known distribution of the species within India, where it was previously known only from Bihar, Kerala, Tamil Nadu and West Bengal.

Keywords: Aragonda Hill; floristic explorations; Malvaceae; *Melochia nodiflora;* new record

Received: 06 July 2026. **Accepted:** 05 October 2026. **Available online:** Version 1.0: 19 November 2026.

Cite this article: Mohd KH, Goli PP, Vallepu N, Ghazala J. *Melochia nodiflora* Sw. (Malvaceae): A new distributional record from Andhra Pradesh, India. Plant Science Today. 2026;XX(X):1-XX. https://doi.org/10.14719/pst.16570

Introduction

Melochia L. (Malvaceae) is a genus comprising approximately 63 species, with a global distribution in tropical and subtropical regions (1). About five species of *Melochia* have so far been reported from India, viz., *Melochia corchorifolia* L., *Melochia parvifolia* H.B.K., *Melochia pyramidata* L., *Melochia nodiflora* Sw. and *Melochia umbellata* (Houtt.) Stapf (2–7), of which *Melochia corchorifolia* has been reported from Andhra Pradesh (5).

During a recent ethnobotanical field survey, the research team encountered a species of *Melochia spp.* near the Ardhagiri Anjaneya Swamy Temple on Aragonda Hill, Chittoor district, Andhra Pradesh, Madhavaram, Chittoor district, Andhra Pradesh and Peddakappalle, Chittoor district, Andhra Pradesh. The species was observed growing along canals, near water bodies, cultivated fields and foothill habitats (Fig.1 and 2).

After a detailed study of the genus *Melochia* in India, based on herbarium specimens and relevant literature, the species was identified as *M. nodiflora.* This species is distributed from southern Florida and the Caribbean through Mexico to northern and northeastern Brazil and occurs in India, Sri Lanka and Vietnam.

A review of the literature revealed that *M. nodiflora* has not been previously reported from Chittoor district or from other districts of Andhra Pradesh. The present finding serves as a basis for updating the floristic knowledge of Andhra Pradesh. It provides a source for further studies on the distribution, establishment, population status and ecological behaviour of *M. nodiflora* in the region. Until now, *M. nodiflora* was known in India only from Bihar, Kerala, Tamil Nadu and West Bengal (4). A detailed morphological description, distribution map and photographic plate are presented to facilitate identification (Fig. 1). The voucher specimen has been deposited in the herbarium of the National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, under field notebook numbers SMPU-CRI-Hyd-15711; SMPU-CRI-Hyd-16485 and SMPU-CRI-Hyd-16991.

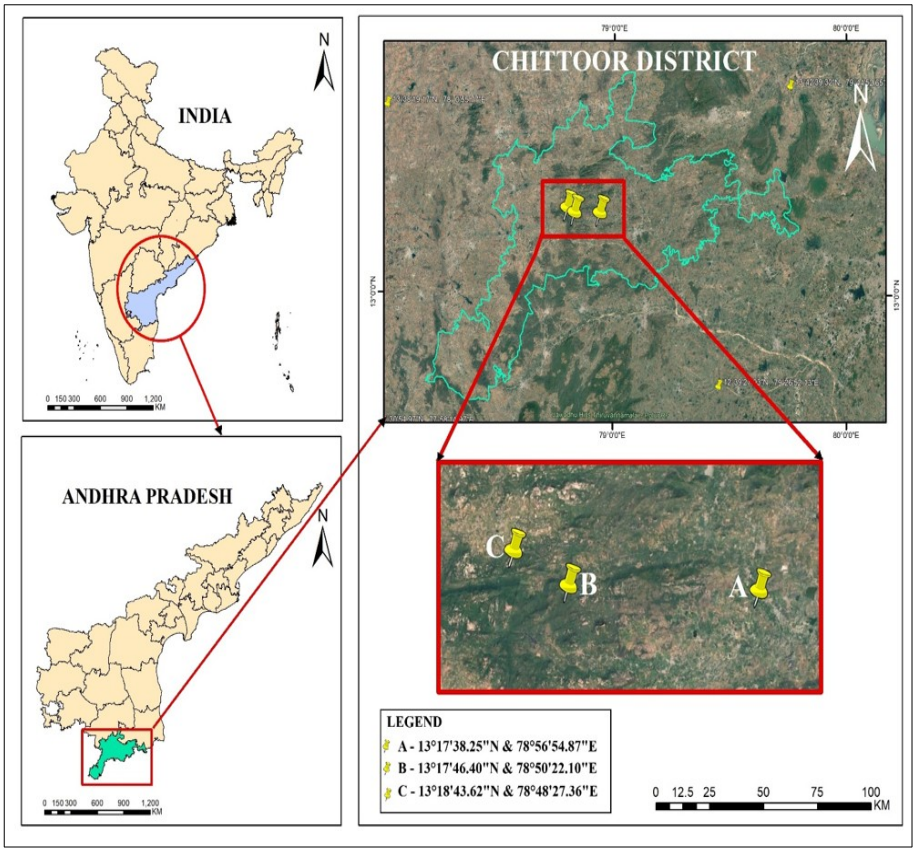


Fig. 1. Map depicting the distribution pattern of *Melochia nodiflora* in Andhra Pradesh State, with recent collection sites (A–C) indicating the locations from which specimens were collected and authenticated.

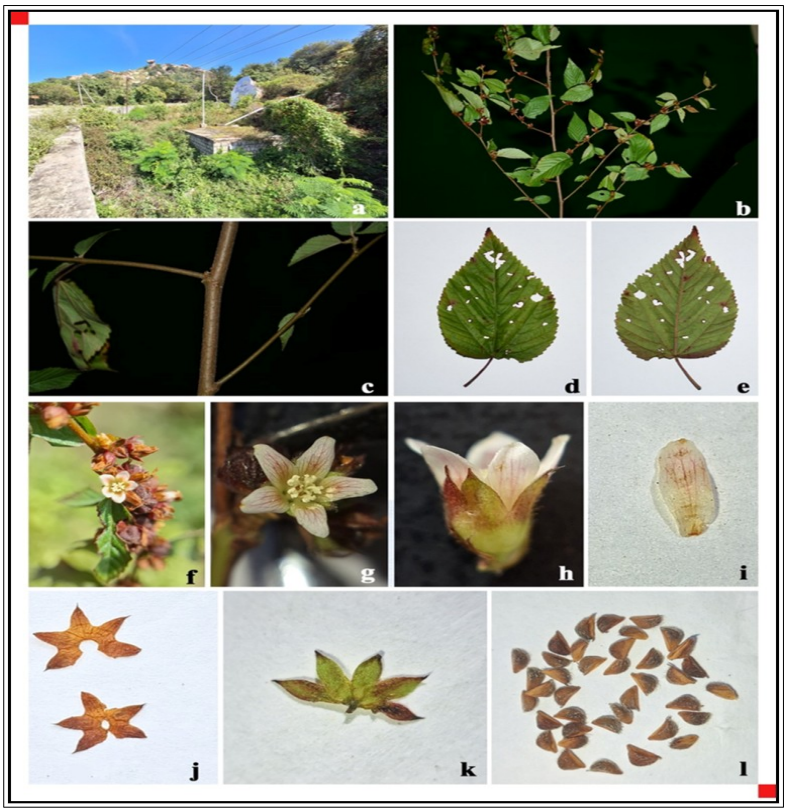


Fig. 2. Morphological characteristics of the plant: (a) habit; (b) branch; (c) stem; (d–e) abaxial and adaxial leaf surfaces; (f) flowering branch; (g–h) flower; (i) petal; (j–k) open calyx; (l) mericarps.

© The Author(s) 2026. Creative Commons CC BY 4.0. Published by Horizon e-Publishing Group.
https://doi.org/10.14719/pst.16570

Field survey and collection

The study was conducted as part of floristic exploration of Andhra Pradesh, during the years 2024–25. During this study, field investigations have been undertaken and covered at Aragonda Hill near the Ardhagiri Anjaneya Swamy Temple in Madhavaram, as well as Peddakappalle, Chittoor district. The study was structured around the systematic observation of plants occurring in and around canals, water bodies, foothills and cultivated lands. Field notes were documented on habit, habitat, associated vegetation, phenological condition and local occurrence. The plant specimens collected that have diagnostic vegetative and reproductive parts were photographed in the field and assigned field notebook numbers for subsequent taxonomic study and herbarium processing.

Taxonomic identification and verification

The identification of the collected plant specimens was carried out through comparative examination of the material, with focus on habit, stem indumentum, leaf morphology, stipules, inflorescence position and structure, floral characters, staminal column, ovary, capsule and seed morphology. Diagnostic characters were checked against taxonomic keys and descriptions in the Flora of India (4) and other relevant floristic and taxonomic literature (2–4, 6, 7). The material was also compared with the authenticated *M. nodiflora* specimen available through the Botanical Survey of India Indian Virtual Herbarium (CAL0000025952), collected by Wallich (Collection No. 1193) and with herbarium/reference material consulted during the study. The specimen was distinguished by paying particular attention to comparisons with other Indian species of *Melochia*, namely *M. corchorifolia*, *M. parvifolia*, *M. pyramidata* and *M. umbellata*, using the diagnostic characters presented in the comparative table (Table 1). Nomenclature and distributional information were cross-checked against the Flora of India, taxonomic databases and recent floristic literature to assess the species distributional status in Andhra Pradesh.

Herbarium preparation and voucher deposition

Collected specimens were processed using standard herbarium techniques (8), including pressing, drying, mounting, labelling and accessioning. Three representative voucher specimens were deposited in the herbarium of the National Research Institute of Unani Medicine for Skin Disorders, Hyderabad, under field notebook numbers SMPU/CRI-Hyd 15412, SMPU/CRI-Hyd 16485 and SMPU/CRI-Hyd 16991. Photographs and field observations were retained as supporting documentation for species identification and distributional confirmation.

Geographical coordinates and mapping

The geographic coordinates of *M. nodiflora* populations were recorded in the studied areas using a Garmin eTrex 32x handheld GPS receiver. Latitude and longitude were recorded at the surveyed localities in decimal-degree format. The recorded geographic coordinates were thereafter employed for spatial analysis and preparation of the distribution map. Spatial data for the study area were processed and mapped using ArcGIS. Essential map elements, including the scale bar, north arrow and legend, were incorporated into the final map, which are submitted in the present study (9).

Taxonomic treatment

***Melochia nodiflora* Sw., Prodr. [O. P. Swartz] 97. (1788).**

Decumbent, perennial herb or sometimes trailing shrub, up to 0.5–2m tall; Stem slender, spreading, branched, cylindrical, covered with short appressed or spreading hairs; Leaves simple, membranous, alternate, stipules linear-lanceolate, caducous, 8.1–9.2 mm long, tomentose, petiole slender, 0.3–3.3 cm long, hairy, lamina ovate to oblong-ovate, 2.5–7 × 1–4 cm, apex acute, base rounded to subcordate-subtruncate, margin crenate to serrulate, sessile or subsessile stellate hairs on both surfaces, 3–5 prominent veins from base, 5–8 later veins. Inflorescence axillary or terminal, often in dense, many-flowered, sessile, fascicled or shortly pedunculate cymes (capitate clusters), 0.5–1.5 cm across; Flowers sessile or shortly pedicellate, bisexual, actinomorphic, 5-merous, small (4–4.8 mm across), purple to mauve, sometime white with pink strips. Calyx campanulate, 5-lobed, lobes triangular to lanceolate, 4.2 –4.4 × 0.9–1.1 mm, pubescent sinuses with trichomes simple and forked on the abaxial face, green or tinged purple when young and membranous when fruiting. Lobes fuse half of the length during flowering but free when fruiting, lobes acute to acuminate. Petals 5, obovate-oblanceolate, spreading, purple to rosy carmine, slightly exceeding the calyx in length, 3.6–4 × 1.5–1.6 mm. Staminodes are small present at the apex of the staminal tube, Stamens 5, united at the base into a short staminal column; anthers yellow. Ovary 1–2 mm long, superior, 5-loculed; style filiform, free from the base, exserted; stigma capitate. Fruit capsule, ovoid to globose, 2.7–3.8 mm across, pubescent, 5-valved, dehiscent. Seeds few per locule, 1.7–2 x 0.9–1.1 mm, trigonous, dark brown to black (Fig. 2).

The species flowers throughout the year, with peak flowering during the rainy and post-rainy seasons (July–December) in the study area. Fruiting follows flowering and occurs almost continuously under favourable conditions. However, the plant excels with extreme fruiting from the late monsoon to winter months (August–January). The dry schizocarpic fruits, a testament to the plant's adaptability, split open, releasing seeds mainly during dry months after rains.

Distribution

Earlier reports indicate the existence of *M. nodiflora* in India, with records from Bihar, Kerala, Tamil Nadu and West Bengal (4). The present study establishes the occurrence of *M. nodiflora* in Chittoor district and confirms a new distributional record for Andhra Pradesh. Earlier, it was not recorded in Andhra Pradesh due to its restricted distribution across small, scattered patches within the study areas, which will be one of the reasons.

© The Author(s) 2026. Creative Commons CC BY 4.0. Published by Horizon e-Publishing Group.
https://doi.org/10.14719/pst.16570

Table 1. Comparative morphological characters distinguishing five Indian *Melochia* species

Character	*M. nodiflora*	*M. parvifolia*	*M. pyramidata*	*M. corchorifolia*	*M. umbellata*
Habit	Decumbent herb-shrub, 0.5–2 m	Erect–spreading undershrub, to 2 m	Erect herb, 0.5–1 m	Erect herb, to 1 m	Tree, to 10 m
Stem	Slender, cylindrical, hairy	Young stems stellate-pubescent	Terete	Stem with 2 longitudinal rows of hairs	Smooth, lenticellate bark
Leaf	Ovate–oblong-ovate, 2.5–7 × 1–4 cm; stellate-hairy both surfaces; crenate–serrulate	Obovate–elliptic, 0.8–4 × 0.4–1.9 cm; apex rounded; lower surface hairy	Ovate-lanceolate, 5–6.5 × 2–3.3 cm; nearly glabrous; crenate	Ovate-oblong, 2.5–6.3 × 0.6–4 cm; sometimes 3-lobed; serrate	Broadly ovate, 5–16 × 2–16 cm; densely stellate-hairy; toothed
Inflorescence	Axillary/terminal, 7–20-flowered clusters around stem nodes	Leaf-opposed, umbellate-subcapitate, 2–46-flowered	Leaf-opposed, few-flowered, umbel-like cymes	Terminal, densely crowded fascicles	Axillary, corymbose/umbellate
Flower	Purple–mauve, 4–4.8 mm across	White; petals 13–15 mm long	Purple, yellow-centred	Pink; petals ca. 5 mm long	Pink–red, star-shaped
Fruit	Ovoid–globose, 2.7–3.8 mm, pubescent, 5-valved	7–9 mm, pyramidal, 5-winged; rostrum 1–2 mm	Broadly pyramidal, 5-winged/angled, 6–10 mm	Globose, ca. 5 mm across	Oblong, 7 × 5 mm, 5-grooved
Seed	Trigonous, 1.7–2 mm, dark brown, black	Trigonous, obliquely obovate, 2–2.3 mm; one/cell	Triangular, Dark brown	Angled, mottled black, grey	Winged, brown

Habitat

The plant grows in moist, open areas such as roadsides, riverbanks, agriculture fields and fallow lands. It was commonly found in plains and foothills. The species primarily prefers the moist clay to clay loam soils that retain sufficient moisture during the peak vegetative phase, indicating a preference for moist soil conditions.

Specimen examined

India, Andhra Pradesh, Chittoor district, Aragonda Hill, 13°17'38.25" N and 78°56'54.87"E; 420 m above mean sea level (AMSL), 08-03-2024, Mohd Kashif Husain and Goli Penhala Pratap, SMPU-CRI-Hyd-15711; Chitttor district, Madhavaram 13°17'46.40" N and 78°50'22.10" E 506 m AMSL, 16-03-2025, Mohd Kashif Husain and Goli Penhala Pratap, SMPU-CRI-Hyd-16485; Chitttor district, Peddakappalle 13°18'43.62" N and 78°48'27.36" E 720 m AMSL, 09-11-2025, Mohd Kashif Husain and Goli Penhala Pratap, SMPU-CRI-Hyd-16991 (Herbarium, Survey of Medicinal Plants Unit (SMPU), National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, Telangana State.

Associated plants

Hibiscus vitifolius L. (Malvaceae); *Acmella uliginosa* (Sw.) Cass. (Asteraceae); *Blepharis maderaspatensis* (L.) B.Heyne ex Roth (Acanthaceae); *Commicarpus chinensis* (L.) Heimerl (Nyctaginaceae); *Acanthospermum hispidum* DC. (Asteraceae).

Acknowledgements

The authors are grateful to express their gratitude to Dr. Noor Zaheer Ahmed, Director-General (DG) and Dr Younis Iftikhar Munshi, Deputy Director General (DDG) of the Central Council for Research in Unani Medicine (CCRUM), Ministry of Ayush, Government of India, for providing financial assistance and also thank the Andhra Pradesh Forest Department for granting permission to the survey team of National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, to conduct the ethnobotanical tour.

Authors' contributions

MKH and GPP collected the specimens. GPP prepared the herbarium specimens and the detailed documentation of the taxonomic characteristics. Additionally, MKH and GPP collaborated to align the research findings and contributed significantly to drafting the manuscript. VN has helped to draft the manuscript. GJ provided necessary financial support for the tour and contributed to the study. All authors have read and approved the final manuscript.

Compliance with ethical standards

Conflict of interest

Authors do not have any conflict of interests to declare.

Ethical issues

None

© The Author(s) 2026. Creative Commons CC BY 4.0. Published by Horizon e-Publishing Group.
https://doi.org/10.14719/pst.16570

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used Grammarly to assist with grammar correction, spelling, punctuation and improvement of language clarity. After using this tool, the authors reviewed and edited the content as needed and took full responsibility for the content of publication.

References

1. Plants of the World Online. Melochia nodiflora (Sw.) Sw. Royal Botanic Gardens, Kew; 2026.
2. Sreekumar PV, Nair NC. Melochia nodiflora Swartz (Sterculiaceae): a new record for India. J Bombay Nat Hist Soc. 1981;78:424–5.
3. Reddy KN, Reddy CS. Melochia parvifolia H.B.K. (Sterculiaceae): a new record for Asia. NeBIO Int J Environ Biodivers. 2020;11(2):79–81.
4. Sharma BD, Sanjappa M. Flora of India. Vol. 3, Portulacaceae–Ixonanthaceae. Kolkata: Botanical Survey of India; 1993.
5. Pullaiah T, Chennaiah E. Flora of Andhra Pradesh. Vol. 1, Ranunculaceae–Alangiaceae. Jodhpur: Scientific Publishers; 1997. p. 114.
6. Singh NP, Karthikeyan S. Flora of Maharashtra State. Vol. 1. Kolkata: Botanical Survey of India; 2000. p. 357.
7. Henry AN, Kumari GR, Chithra V. Flora of Tamil Nadu, India. Vol. 1. Coimbatore: Botanical Survey of India; 1983. p. 40.
8. Jain SK, Rao RR. A handbook of field and herbarium methods. New Delhi: Today and Tomorrow's Printers and Publishers; 1976.
9. Khan Z, Khan B, Shah ST, Farooq O, Ahmad MI, Saqib M, et al. Conservation and threat assessment of Podophyllum hexandrum Royle (Himalayan mayapple) in Swat, Pakistan: a remarkable medicinal plant. Sustainability. 2026;18:6072. https://doi.org/10.3390/su18126072

Additional information

Peer review: Publisher thanks the Sectional Editor and anonymous reviewers for their contribution to the peer review of this work.

Reprints & permissions information: Available at https://horizonepublishing.com/journals/index.php/PST/open_access_policy.

Publisher's Note: Horizon e-Publishing Group remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Indexing: See https://horizonepublishing.com/journals/index.php/PST/indexing_abstracting.

Copyright: © The Author(s). This is an open-access article distributed under the Creative Commons Attribution License CC BY 4.0.

Publisher information: Plant Science Today is published by Horizon e-Publishing Group with support from Empirion Publishers Private Limited, Thiruvananthapuram, India.

© The Author(s) 2026. Creative Commons CC BY 4.0. Published by Horizon e-Publishing Group.

https://doi.org/10.14719/pst.16570