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Notes on the occurrence of *Sida cordata* (Burm.f.) Borss.Waalk. (Malvaceae) in Indonesia

Septian[1], Arifin Surya Dwipa Irsyam[1], Muhammad Rifqi Hariri[2]

[1]Herbarium Bandungense (FIPIA), School of Life Sciences and Technology,
ITB Jatinangor Campus, Sumedang, 45363, Indonesia
[2]Research Center for Biosystematics and Evolution, BRIN, Cibinong, 16911, Indonesia
Correspondence: arifin@itb.ac.id

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ABSTRACT

Septian, Arifin Surya Dwipa Irsyam & Muhammad Rifqi Hariri 2026. Catatan mengenai keberadaan *Sida cordata* (Burm.f.) Borss.Waalk. (Malvaceae) di Indonesia. Floribunda 9(2) 60 — 66 — *Sida cordata* (Burm.f.) Borss.Waalk. merupakan salah satu jenis dari marga *Sida* (Malvaceae) yang memiliki distribusi luas, namun catatan modern mengenai keberadaannya di pulau utama Indonesia masih sangat terbatas setelah laporan historis dari Kepulauan Seribu pada tahun 1948. Dengan memanfaatkan jaringan herbarium virtual dan pemeriksaan spesimen digital dari repositori internasional utama (seperti Naturalis Biodiversity Center), studi ini memperbarui data distribusi *S. cordata* di kawasan tersebut. Berdasarkan evaluasi spesimen digital, *S. cordata* dilaporkan sebagai catatan distribusi baru untuk Pulau Jawa daratan (Jawa Tengah) dan Sulawesi (Sulawesi Tengah), sehingga memperluas cakupan wilayah sebarannya di kawasan Malesia. Catatan morfologi diagnostik, referensi taksonomi, serta data spesimen virtual disajikan untuk mendukung identifikasi yang akurat.

Kata kunci: Distribusi baru, herbarium virtual, Indonesia, Malvaceae, *Sida*

Septian, Arifin Surya Dwipa Irsyam & Muhammad Rifqi Hariri 2026. Notes on the occurrence of *Sida cordata* (Burm.f.) Borss.Waalk. (Malvaceae) in Indonesia. Floribunda 9(2) 60 — 66 — *Sida cordata* (Burm.f.) Borss.Waalk. is a widely distributed member of the genus *Sida* (Malvaceae), yet its modern occurrence and distribution on the mainland of Indonesia remain poorly documented following historical records from the Seribu Islands in 1948. Utilizing virtual herbarium networks and digital specimen examinations from major international repositories (such as Naturalis Biodiversity Center), this study updates the distribution of *S. cordata* in the region. Based on digital voucher evaluations, *S. cordata* is formally reported as new distribution records for mainland Java (Central Java) and Sulawesi (Central Sulawesi), significantly expanding its known range within Malesia. Morphological diagnostic notes, taxonomic references, and digital herbarium data are provided to facilitate accurate identification.

Keywords: Digital herbaria, distribution record, Indonesia, Malvaceae, *Sida*, virtual herbarium.

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INTRODUCTION

The genus *Sida* L. consists of 278 species distributed across the tropics and subtropics to Northern America (POWO, 2026; Santoso *et al*., 2026). In Indonesia, the genus consists of 12 species, including two recently described species from Java: *Sida conduplicata* Santoso & Felayati and *S. penambangensis* Felayati, Rustiami & Susandarini (Felayati *et al*., 2024; Santoso *et al*., 2026). One of the widely distributed members of this genus is *S. cordata* (Burm.f.) Borss.Waalk., which was previously recorded in regions such as Assam, Bangladesh, China, India, and parts of Malesia (POWO, 2026). Historically, van Borssum Waalkes (1966) noted that the species was collected from P. Purmerend = Pulau Sakit in the Bay of Djakarta (now Bidadari Island, Seribu Islands). Our observation on the Naturalis Bioportal verified that this historical specimen was collected by G. den Hoed (3085) on 1 August 1948 (Specimen L.2364620).

The rapid advancement of biodiversity informatics and herbarium digitisation has fundamentally transformed modern botanical research, collection management, and large-scale taxonomic revisions (Leliaert *et al*., 2023; Niedzielski & Markiewicz, 2023; De Smedt *et al*., 2024). The accessibility of high-resolution digital specimens through global online platforms and institutional portals allows researchers to conduct comprehensive morphological examinations, trace historical collections, and evaluate geographic distributions without the traditional constraints of physical travel or loan requests (Niedzielski & Markiewicz, 2023). In the context of Malesian botany, utilizing virtual herbarium networks provides a powerful framework for uncovering overlooked records and bridging gaps in historical data (Damayanto & Irsyam, 2022). By leveraging these digital infrastructure tools, contemporary studies can re-examine foundational type specimens and historical vouchers housed in major international repositories, such as those originating from Naturalis Biodiversity Center, The Netherlands, thereby enabling precise taxonomic verifications and updated distribution assessments for poorly documented or cryptic plant species.

Despite historical records being limited to isolated locations like the Seribu Islands, information regarding its modern presence or distribution on the mainland of Indonesia can now be comprehensively unraveled using these digital methods. Through virtual specimen examination using international herbarium repositories such as the Naturalis Bioportal, alongside other global databases, this study reveals significant new records. Based on these virtual herbarium evaluations, *S. cordata* is formally reported from mainland Java (Central Java) and Sulawesi (Central Sulawesi), thereby expanding our understanding of its geographic distribution within the region. In this paper, we formally report the newly distributional records of *S. cordata* in Indonesia.

MATERIALS AND METHODS

Specimen examinations were conducted digitally via the Naturalis Bioportal (https://www.bioportal.naturalis.nl), the Global Biodiversity Information Facility (https://www.gbif.org), and JSTOR Global Plants (https://plants.jstor.org), following the methodological framework established by Damayanto and Irsyam (2022). Morphological evaluation and taxonomic delimitation were performed in accordance with van Borssum Waalkes (1966) and Tambde *et al.* (2016). Morphological description was prepared from digital specimens, and terminology follows Beentje (2012).

RESULT AND DISCUSSION

Sida cordata (Burm.f.) Borss.Waalk., Blumea 14:182 (1966); Tambde *et al*., Taiwania 61(3): 248 (2016); *Melochia cordata* Burm.f., Fl. Indica: 143 (1768). (Figures 1–2).
Lamarkia morifolia Medik., Philos. Bot. 1: 28 (1789)
Sida beddomei K.C.Jacob, J. Bombay Nat. Hist. Soc. 47: 50 (1947)
Sida cordata var. *nasirii* Abedin, Pakistan J. Bot. 11: 41 (1979)
Sida humilis Cav., Diss. 5: 277 (1788)
Sida humilis var. *veronicifolia* (Lam.) Mast., J.D.Hooker, Fl. Brit. India 1: 322 (1874), nom.

illeg. homonym. post.
Sida mathewsii Turcz., Bull. Soc. Imp. Naturalistes Moscou 36(I): 565 (1863)
Sida morifolia Cav., Diss. 1: 9 (1785)
Sida multicaulis Cav., Diss. 1: 10 (1785)
Sida nervosa Wall., Numer. List: n.° 1853 (1829), not validly publ.
Sida radicans Cav., Diss. 1: 8 (1785)
Sida reclinans Kunze, Index Seminum (LZ, Lipsiensis) 1843: 4 (1843)
Sida retxii J.F.Gmel., Syst. Nat., ed. 13[bis].: 1042 (1792)
Sida sundaica Zipp. ex Miq., Fl. Ned. Ind. 1(2): 141 (1858), nom. illeg. homonym. post.
Sida unilocularis L'Hér., Stirp. Nov.: 117bis (1789)
Sida veronicifolia Lam., Encycl. 1: 5 (1783)
Sida veronicifolia var. *humilis* (Cav.) K.Schum., C.F.P.von Martius & auct. suc. (eds.), Fl. Bras. 12(3): 320 (1891)

Prostrate herbs, trailing, not rooting at nodes, branched at base. **Leaves** alternate; petiole thin, green; 5–20 mm long; blade cordate to obliquely cordate, orbicular, or trilobed, 0.8–4.5 × 0.7–4 cm, base shallowly to deeply cordate, margin serrate-crenate, apex acuminate to rounded, palminerved, 5-nerved; stipules linear. **Flowers** axillary, initially solitary, 5–9 mm in diam.; peduncle slender, 2–12 mm long, thin; calyx widely campanulate, 5-fid, connate at base; calyx lobes triangular to ovate, 4–7 mm long, green; corolla yellow. Schizocarp with persistent calyx.

Distribution. The species is previously recorded in Assam, Bangladesh, China South-Central, China Southeast, Hainan, India, Laccadive Islands, Lesser Sunda Islands, Maldives, Myanmar, Oman, Pakistan, Philippines, South China Sea, Sri Lanka, Taiwan, Thailand, Vietnam, and West Himalaya (POWO, 2026). In this paper, *S. cordata* is formally reported from Central Java and Central Sulawesi based on herbarium specimen from A. Kleinhoonte (L.2364619) and W. Meijer (L.2359563, Bijrmoer *et al*., 2026).

New Records. INDONESIA. JAVA — **Central Java**: Java Weg van Semarang v. Demak in duikgewas, 21.VII.1932, *A Kleinhoonte 307* (L-image seen! [L.2364619]). SULAWESI — **Central Sulawesi**: Celebes, central part, area of Palu, 0°53'S 119°53'E, altitude 400 m, 17.V.1975, *W Meijer 10165* (L-image seen! [L.2359563]).

Note. According to van Borssum Waalkes (1966), *S. cordata* is closely related to *S. javensis* Cav. as both species belong to the same section, *Sida* sect. *Nelavaga* Borss.Waalk. This section is diagnosed by specific morphological traits, notably palminerved leaves, pentamerous styles and mericarps, and thin-walled, indehiscent mericarps that lack prominent reticulate venation, relying instead on the disintegration of the wall to release the seeds. *Sida cordata* can be separated from *S. javensis* by its stems that do not root at the nodes and its compact, awnless mericarps bearing two short apical beaks—distinctions corroborated by van Borssum Waalkes (1966) and Tambde *et al*. (2016). Examination of digital herbarium specimens confirmed that these vegetative characters align closely with the traditional taxonomic limits established for *S. cordata* by van Borssum Waalkes (1966). Meanwhile, diagnostic traits for *S. javensis* are illustrated in Figure 3, and micromorphological details of the *S. cordata* mericarp are presented by Tambde *et al*. (2016, Fig. 3C).

The native distribution of *S. cordata* is reported to include Socotra and tropical and subtropical Asia (POWO, 2026), although its status in the Lesser Sunda Islands remains somewhat ambiguous. Historical records of the species from Sulawesi and Central Java, dating from before 1980, suggest that it may be native to Indonesia, with its distribution potentially underrepresented due to insufficient botanical exploration. Alternatively, the species may have been introduced to Indonesia long ago and subsequently become naturalized without being adequately documented. Further field observations and botanical surveys are therefore necessary to clarify its distribution and determine its status in Indonesia.

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Figure 1. *Sida cordata* collected by A. Kleinhoonte from Central Java (L.2364619).



Figure 2. *Sida cordata* collected by W. Meijer from Central Sulawesi (L.2359563) from Bijrmoer *et al.* (2026).

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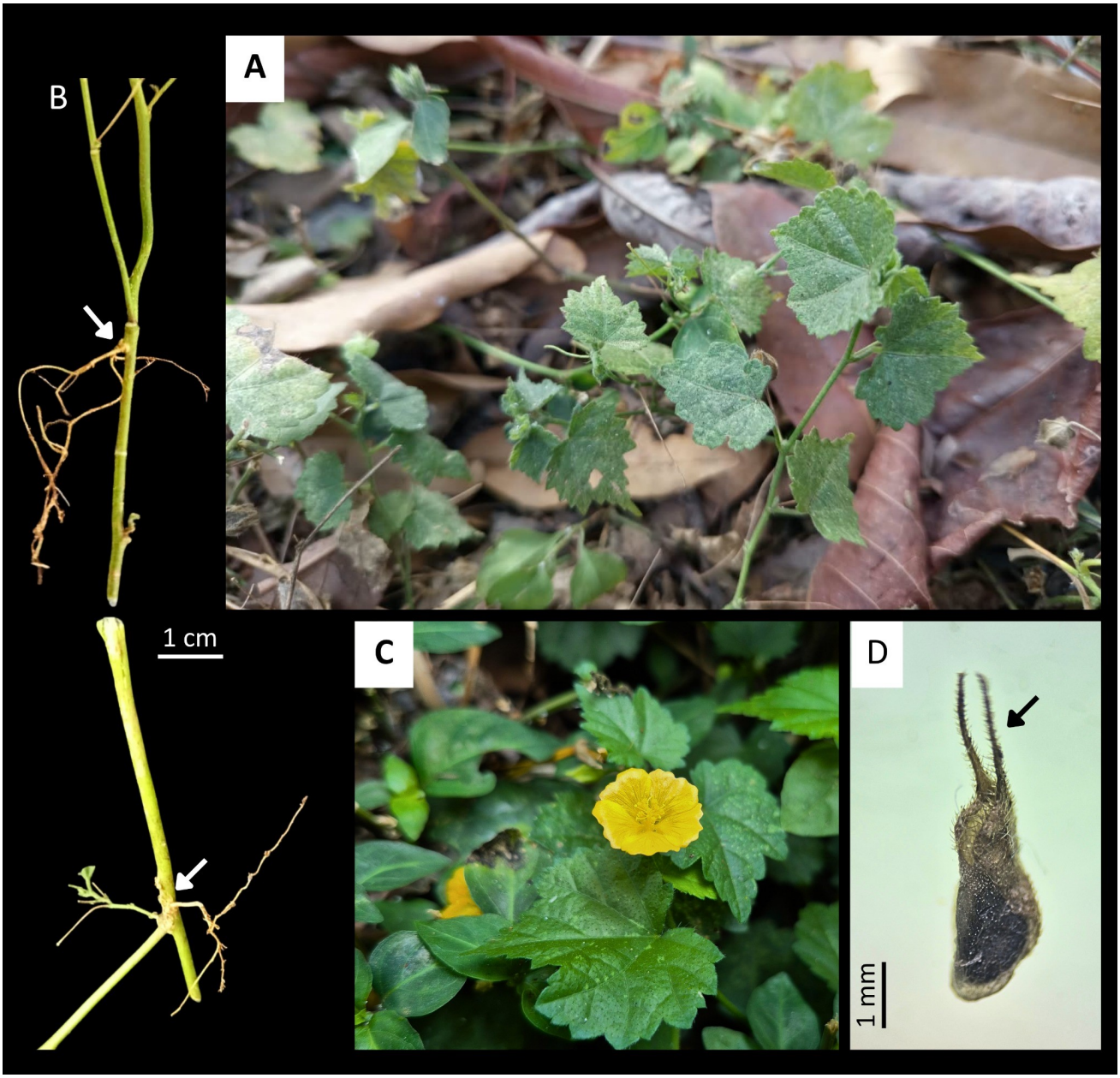


Figure 3. *Sida javensis* Cav. A. Habit. B. Stems with rooting nodes (arrows). C. Leaves and flowers. D. Mericarp with two long awns at the apex (arrow).

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