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THE GENUS *BUNCHOSIA* RICH. EX KUNTH (MALPIGHIACEAE) IN JAVA, INDONESIA

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ABSTRACT

Arifin Surya Dwipa Irsyam, Muhammad Rifqi Hariri, Muhammad Hisyam Baidlowi, Dian Rosleine 2025. Marga *Bunchosia* Rich. ex Kunth (Malpighiaceae) di Jawa, Indonesia. Floribunda 8 (1): 11 – 15 — Malpighiaceae Juss. merupakan suku tumbuhan yang beragam, terdiri dari sekitar 72 marga yang sebagian besar tersebar di wilayah tropis dan subtropis. Di Pulau Jawa, sebelumnya telah tercatat delapan marga. Selama survei lapangan pada tahun 2024, satu marga rekaman baru, *Bunchosia* Rich. ex Kunth, ditemukan di Jawa Barat (Sumedang) dan Jawa Timur (Malang). Hal ini menjadi laporan pertama mengenai keberadaan *Bunchosia* di Jawa, sehingga jumlah marga dari suku Malpighiaceae yang dikenal di pulau ini bertambah menjadi sembilan. Marga tersebut hanya diwakili oleh satu jenis saja, yakni *B. armeniaca* DC., yang dikenal secara lokal dengan nama kacang brazil. Tumbuhan ini berasal dari wilayah tropis Amerika Selatan dan baru saja diperkenalkan ke Jawa sebagai tanaman hias, dan juga dibudidayakan karena buah dan bijinya yang dapat dimakan. Studi ini menyajikan kunci taksonomi terbaru untuk tingkat marga dari suku Malpighiaceae di Jawa, disertai dengan deskripsi jenis *B. armeniaca* serta pembahasan mengenai signifikansi taksonominya.

Kata kunci: *Bunchosia armeniaca*, Malesia, Malpighiales, Ornamental.

Arifin Surya Dwipa Irsyam, Muhammad Rifqi Hariri, Muhammad Hisyam Baidlowi, Dian Rosleine 2025. The Genus *Bunchosia* Rich. ex Kunth (Malpighiaceae) in Java, Indonesia. Floribunda 8(1): 11 – 15 — Malpighiaceae Juss. is a diverse family consisting of 72 genera that primarily distributed in tropical and subtropical regions. In Java, eight genera had been previously recorded. During fieldwork in 2024, a newly recorded genus, *Bunchosia* Rich. ex Kunth, was discovered in West Java (Sumedang) and East Java (Malang). This marks the first report of *Bunchosia* in Java, increasing the island's known Malpighiaceae genera to nine. The genus is represented by a single species, *Bunchosia armeniaca* DC., locally known as *kacang brazil*. Native to Southern Tropical America, it was recently introduced to Java as an ornamental but is also valued for its edible fruit and seeds. This study provides an updated taxonomic key to the genera of Malpighiaceae in Java, along with a description of *B. armeniaca* and a discussion of its botanical significance.

Keywords: *Bunchosia armeniaca*, Malesia, Malpighiales, Ornamental.

INTRODUCTION

Malpighiaceae Juss. comprises 72 genera and approximately 1300 species that are primarily found in tropical and subtropical forests and savannas in the Old and New Worlds (Anderson & Zmarzty, 2015; POWO, 2024). In Java, this family is represented by eight genera: *Aspidopterys* A.Juss. ex Endl., *Byrsonima* Rich. ex Kunth, *Galphimia* Cav., *Hiptage* Gaertn., *Malpighia* Plum. ex L., *Ryssopterys* Blume ex A.Juss., *Sphedamnocarpus* Planch. ex Benth. & Hook.f., and *Tristellateia* Thouars. Among these, three genera—*Byrsonima*, *Galphimia*, and *Malpighia*—are known introductions from the Americas, brought to Java primarily for ornamental cultivation (Backer & Bakhuizen van den Brink, 1963).

Recent botanical exploration conducted in 2024 in West Java and East Java led to the discovery of an additional genus, *Bunchosi*a Rich. ex Kunth, which had not been previously recorded on the island. The occurrence of this genus represents a significant expansion of the known flora of Malpighiaceae in Java, raising the number of recognized genera to nine. The presence of *Bunchosia* not only enriches the island's floristic diversity but also highlights the ongoing need for comprehensive botanical inventories, especially concerning non-native and introduced taxa. In light of this discovery, the present study provides an updated taxonomic key for the Malpighiaceae genera found in Java, along with a detailed morphological description and a concise discussion of its taxonomic significance.

MATERIALS AND METHODS

This study was conducted in 2024 across selected regions of Jakarta, West Java, and East Java as part of an ongoing inventory of non-indigenous plant species in Java. Plant materials were obtained from the field using guidelines provided by the Royal Botanic Garden Edinburgh (2017). Collected materials were preserved following the techniques outlined by Davies *et al*. (2024) and subsequently deposited at the Herbarium Bandungense (FIPIA), School of Life Sciences and Technology, Institut Teknologi Bandung.

Specimen identification was guided by several key references, including Maguire (1978), Lorenzi *et al*. (2006), Gutiérrez (2010), Lim (2012), and Blancke (2016). Morphological descriptions followed the terminology standardized by Beentje (2016).

RESULT AND DISCUSSION

Updated key to the Malpighiaceae in Java (modified from Backer and Bakhuizen van den Brink [1963])

1. A. Calyx without glands or with very obsecure glands 2
   B. Calyx with very conspicuous glands 6
2. A. Stem erect, furcate, leaves with acute base, mericarps unwinged ..... *Galphimia*
   B. Stem twinning or scandent, not furcate, leaves with cordate to broadly rounded base, mericarps winged or with acute outgrowths 3
3. A. Mericarps with one sided wing 4
   B. Mericaps surrounded by a wing or whorl of outgrowths 5
4. A. Inflorescences umbellate, axillary, many-flowered, consist of bisexual flowers and staminate flowers, petals subsessile, stigmas capitate, mericarps without irritating hairs ..... *Ryssopterys*
   B. Inflorescences umbellate, few-flowered, terminal, or axillary panicles, consist of bisexual flowers, petals clawed, stigmas punctiform, mericarps with irritating hairs ..... *Sphedamnocarpus*

5. A. Petals clawed, yellow, styles 1, lateral wing on mericarp divided into 4–10 narrow stellately arranged lobes ..... *Tristellateia*
   B. Petals not clawed, white, styles 3, lateral wings on mericarp connate forming 1 large wing ..... *Aspidopterys*
6. A. Calyx with one gland, lowest stamen larger than the other ones ..... *Hiptage*
   B. Calyx with 5–10 glands, stamens subequal 7
7. A. Corolla white, pink or red, fruit a schizocarp breaking up into fleshy mericarps .... *Malpighia*
   B. Corolla yellow, fruits a fleshy drupe 8
8. A. Leaves eglandular, pseudoracemes terminal, ovary 3-carpellate, styles 3 .....*Byrsonima*
   B. Leaves glandular, inflorescences pseudoracemes axillary or terminal, ovary 2- or 3-carpellate, styles 2–3 ..... *Bunchosia*

Bunchosia encompasses 92 species, with a distribution ranging from Mexico to Paraguay and Bolivia, particularly concentrated in Mexico, Central America, the West Indies, and northern South America (POWO, 2024). The genus is easily recognized by its growth form as shrubs or small trees, the presence of two or more glands on the abaxial surface of the leaves, and the arrangement of flowers in lateral pseudoracemes. The petals are unguiculate and exhibit a yellow colour, while the floral structure includes 10 stamens that are either equal or nearly so. The ovary consists of 2 to 3 carpels and locules, accompanied by 2 to 3 styles. The fruit is fleshy, and displays a colour range from yellow to orange or red upon ripening, containing 2 or 3 seeds, although occasionally only one may be present due to abortion. Each seed is enveloped in a cartilaginous endocarp featuring reticulate venation (Gutiérrez, 2010).

In Java, the genus *Bunchosia* is represented by a single species, *B. armeniaca* DC. Commonly known among local horticulturists and plant enthusiasts as *kacang brazil*. This species is native to the South American highlands, found at elevations between 1500 and 2500 meters above sea level (Blancke, 2016). *Bunchosia armeniaca* has been recently introduced to Java, primarily for ornamental purposes due to its attractive foliage and distinctive fruit. In addition to its aesthetic appeal, the species is also appreciated for its edible fruit and seeds, which have contributed to its popularity among hobbyists. The presence of *B. armeniaca* in Java represents a noteworthy addition to the island's cultivated flora. A detailed morphological description of this species is provided in the following section.

Bunchosia armeniaca DC., Prodr. 1: 582 (1824). (Fig. 1)

Malpighia armeniaca Cav., Diss. 8: 410 (1789).
Bunchosia armeniaca f. *parvifolia* Nied., Arbeiten Bot. Inst. Königl. Lyceums Hosianum Braunsberg 5: 42 (1914).
Bunchosia armeniaca f. *systyla* Nied., Arbeiten Bot. Inst. Königl. Lyceums Hosianum Braunsberg 5: 42 (1914).

Shrub, up to 2.5 m in height. Stem greyish green, sericeous, the older stem glabrate, lenticelled. Leaves opposite; petiole 7–9 mm long, canaliculate, eglandular, green; lamina ovate to elliptic, 10–13 × 7–8 cm, base cuneate or truncate, margin revolute, apex acuminate to caudate, adaxial surface dark green, glabrate, abaxial surface pale green, sericeous, midrib prominent abaxially; stipules borne at base of petiole, free, minute, 1–1.5 mm long, green; 2 large glands near the base, elliptic, large, ca 1.5 mm long, yellowish green; several smaller glands distally near the margin, yellowish. Inflorescences pseudoraceme, up to 8 cm long, axillary, flowers 13–19, ca 1.5 cm in diam., often paired in the axil of the same bract; bracts decussate, triangular, 1–2 mm long, green; peduncle 1.9–2.4 cm long, sericeous, green; rachis 5–11 mm long, sericeous, green; pedicels

1–3 mm long, sericeous, green. Sepals 5, ovate, ca 3 × 2 mm, margin ciliate, apex acute, glandular; glands (8–)10, 4–5 mm long, connate at base, free and recurved at the apex, yellowish green to yellow; petals 5, free, yellow, the lateral 4 with the claw 2–3 mm long, the limb ca 5 × 5 mm, eglandular, concave, the posterior petal with the claw 3 mm long, the limb ca 6 × 6–7 mm, glandular-dentate, flat; stamens 10, almost equal; filaments ca 2 mm long, up to ½ connate, membranous, yellowish to white; anthers oblong, ca 1 mm long, glandular, purplish; receptacle glabrous; ovary ovoid, ca 2 mm in height, 2-locular, sericeous, green; styles 2, 2.5–3 mm long, glandular, yellowish green; stigmas peltate, ca 1.4 mm in diam., yellow. Mature drupe ovoid, with 2 pyrenes, 2.2–4 cm long, 1.4–2.3 in diam.; exocarp sericeous, red, apiculate due to persistent styles; mesocarp reddish orange; endorcarp cartilaginous, creamy white. Seeds ovoid, green.

Distribution and ecology. The species is naturally distributed in Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela (Lorenzi *et al*., 2006; Lim, 2012; POWO, 2024). In this study, *B. armeniaca* were collected in the Western and Eastern parts of Java in open areas up to 703 m asl.

Specimens examined. INDONESIA. JAVA — **West Java**: Sumedang Regency, Jatinangor Subdistrict, Cibeusi Village, 9.X.2024, *ASD Irsyam 894* (FIPIA); Cibeusi Village, July 2024, *A.S.D. Irsyam s.n.* (FIPIA). — **East Java**: Malang Regency, Wajak Subdistrict, Dadapan Village, RT 12 RW 04, 10.X.2024, *MH Baidlowi s.n.* (FIPIA).

Uses. *B. armeniaca* is commonly used as an ornamental plant in the garden due to its attractive flowers and multicolored fruits. However, the fruits are edible and have a crisp flesh similar to carrots. It can be consumed fresh or processed into jams, jellies, juices, and milkshakes. The roasted or fried seeds have a flavour like cashew (Lim, 2012; Blancke, 2016).

Note. In Indonesia, *B. armeniaca* is frequently mistaken for *B. argentea* (Jacq.) DC. The latter species is distinguished by its elliptic leaf shape, dense and persistent silvery- or golden-sericeous hairs on the abaxial leaf surface, filaments connate at ⅓ portion, capitate stigmas, and ovoid-globose fruit (Maguire, 1978).

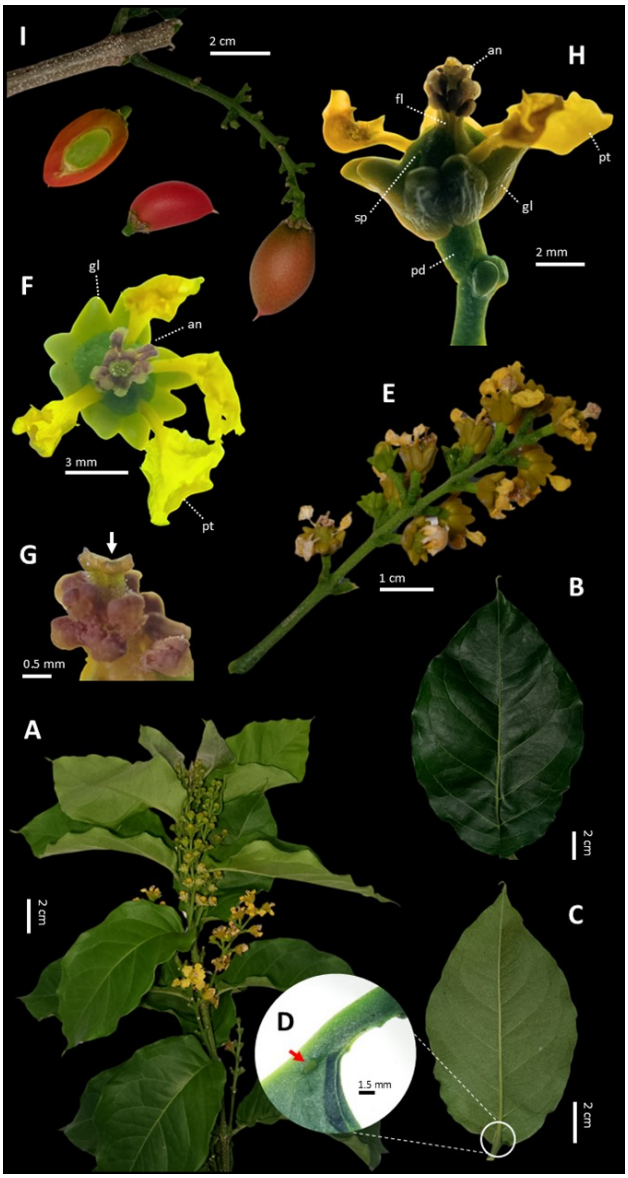

Figure 1. *Bunchosia armeniaca*. A. Branch, B. Adaxial leaf surface, C. Abaxial leaf surface, D. Gland near the base of leaf (red arrow), E. Pseudoraceme, F. Top view of flower (an= anther; gl= gland; pt= petal;st= stigma), G. Peltate stigmas (arrow), H. Side view of flower (an= anther; fl= filament; pt= petal; pd= pedicel; sp= sepal), I. Drupes.

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