

Synopsis of *Myrcia* (Myrtaceae) in the State of Pernambuco, Brazil

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Abstract: The present study is a synopsis of the species of *Myrcia* occurring in Pernambuco, Brazil. We recorded 30 species distributed in eight sections: *M. sect. Aguava* (4), *Myrcia sect. Aulomyrcia* (9), *M. sect. Calyptanthos* (3), *M. sect. Gomidesia* (5), *M. sect. Myrcia* (4), *M. sect. Reticulosae* (2), *M. sect. Sympodiomyrcia* (2) and *M. sect. Tomentosae* (1), beyond *Myrcia* sp. which has not been included in any section yet. *Myrcia laricina* (O. Berg) Burret ex Luetzelb. and *M. hirtiflora* DC. are new records for the State. *Myrcia arenaria* had the first record for humid forest in the municipality of Brejo da Madre de Deus. This study provides an identification key, comments on morphological distinction, geographic distribution and habitat for all taxa. In addition, distribution maps, photographic plates with the distinctive characteristics of the species are included and the updating names of *Calyptanthos*, *Gomidesia* and *Marlierea* under *Myrcia*.

Keywords: Caatinga; Atlantic Forest; Myrtales; Myrteae; Taxonomy.

Sinopse de *Myrcia* (Myrtaceae) no estado de Pernambuco, Brasil

Resumo: O presente estudo é uma sinopse das espécies de *Myrcia* ocorrentes em Pernambuco, Brasil. Foram registradas 30 espécies distribuídas em oito seções: *M. sect. Aguava* (4), *Myrcia sect. Aulomyrcia* (9), *M. sect. Calyptanthos* (3), *M. sect. Gomidesia* (5), *M. sect. Myrcia* (4), *M. sect. Reticulosae* (2), *M. sect. Sympodiomyrcia* (2) e *M. sect. Tomentosae* (1), além de *Myrcia* sp. até o momento não incluída em nenhuma seção. *Myrcia laricina* (O. Berg) Burret ex Luetzelb. and *M. hirtiflora* DC. são novos registros para o Estado. *Myrcia arenaria* teve o primeiro registro para floresta úmida no município de Brejo da Madre de Deus. Esse estudo traz uma chave de identificação, comentários de distinção morfológica e de distribuição geográfica e habitat para todos os táxons. Além disso, são incluídos mapas de distribuição, pranchas fotográficas com as características distintivas das espécies e atualização dos nomes de *Calyptanthos*, *Gomidesia* e *Marlierea* em *Myrcia*.

Palavras-chave: Caatinga; Mata Atlântica; Myrtales; Myrteae; Taxonomia.

Introduction

Myrtaceae is the seventh largest family of angiosperms, has a pantropical distribution and comprises approximately 6,000 species and 132 genera (POWO 2020) and two subfamilies: Psiloxylloideae (Croizat) Schmid and Myrtoideae Sweet (Wilson et al. 2001). Myrtoideae encompasses 15 tribes, among them Myrteae stands out for its species richness in the Neotropical region with ca. 2,500 species and 51 genera (Lucas et al. 2007; Wilson 2011; POWO 2020).

Lucas et al. (2019) divided Myrteae into nine subtribes: Myrciinae, Blepharocalycinae, Pliniinae, Luminae, Eugeniinae, Decaspermatae, Pimentinae, Myrtinae and Ugniinae. For Myrciinae, *Myrcia* is a monophyletic genus that encompasses as synonyms the species

previously belonging to the genera *Myrcia*, *Calyptanthos*, *Marlierea* and *Gomidesia* (Lucas et al. 2007, 2011, 2018). *Myrcia* stands out for having about 800 species (Lucas et al. 2018), with most *Myrcia* representatives occurring in the Atlantic Forest, Cerrado and Amazonia (Lucas et al. 2011). In the current circumscription of *Myrcia*, the species are separated into nine sections (Lucas et al. 2018). However, a tenth clade present in the northern Atlantic Forest is cited by Amorim et al. (2019) with a small group of species that differs from the other sections mainly by the morphology of the calyx and anther (Amorim et al. 2019).

According to NicLughadha et al. (2019), *Myrcia* is among the most studied genera in the Neotropics. Revisional works focused on almost all sections (*M. sect. Calyptanthos* (Lourenço 2015), *M. sect.*

Aulomyrcia (Lucas et al. 2016), *M. sect. Aguava* (Lima 2017), *M. sect. Gomidesia* (Amorim 2017), *M. sect. Myrcia* (Santos 2017), *M. sect. Sympodiomyrcia* (Santos et al. 2018), facilitating the identification of species in floristic, ecological and conservation studies (Lughadha et al. 2019). Despite that, *Myrcia* species are complex and show a high degree of homogeneity in morphological characters, which makes it difficult to identify the taxa (Lucas et al. 2018). In addition, *Myrcia* is of great ecological importance since most of its species bear fruit throughout the year round and are a source of food for mammals, frugivores and birds (Staggemeier et al. 2010, 2017).

In Brazil, *Myrcia* has 402 species, out of which 139 occur in the Northeast of the country and 28 in the state of Pernambuco, followed by *Eugenia* with 25 species (Santos et al. 2024). It is characterized by the inflorescences, in general, in branched panicles, dichasia, occasionally uniflorous, ovaries with 2-3 locules, with two ovules in each locule, calyx lobes free or partially or fully fused, tearing longitudinally, transversely or falling in the form of a calyptra, pilose or glabrous staminal disk, with hypanthium above or not the ovary tube, globose or ellipsoid fruits, persistent calyx lobes, seeds with foliaceous cotyledons, folded, soft tegument (Lucas et al. 2018).

Studies of *Myrcia* that have included the Northeast, and exclusively for the state of Pernambuco, are scarce (Amorim & Alves, 2011, 2012; Santos 2013 and Amorim, 2021). In addition, the number of *Myrcia* species is underestimated and the scientific names are out of date. Bearing this in mind, this paper updates the number of species, their respective distribution and the species of sections *Calyptanthes* and *Gomidesia* in *Myrcia* for the state of Pernambuco. Identification keys, descriptions, morphological comments, distribution maps and useful photos are also provided.

Material and Methods

1. Study area

The state of Pernambuco is located in the Northeast region of Brazil, between the coordinates (7°15'45" S and 9°28'18" S and 34°48'35" W

and 41°19'54" W), has about 98.068,021 km² of territorial extension and covers 185 municipalities limited by the states of Alagoas, Bahia, Ceará, Paraíba and Sergipe (Andrade, 2007; IBGE 2019). According to Andrade-Lima (2007) the state comprises four phytogeographic zones: coast, forest, Caatinga and savanna (Figure 1), these, in turn, are subdivided into subzones; the coastal zone with four subzones: maritime, beach, restinga, coastal terraces and mangroves; the forest zone with three subzones: humid forest, dry forest and mountain forest; the Caatinga zone with two subzones, "agreste" and "sertão", which is subdivided into regions (central hinterland, hinterland of the sandstone plateaus, hinterland of São Francisco, hinterland of Jatinã and hinterland of Araripe) and the savanna zone also with two subzones: tablelands and wilds.

The vegetation is very diverse, with the Caatinga to a greater extent, followed by the Atlantic Forest and Restinga, but also features mangrove formations and typical cerrado formations (Andrade 2007). The most common soils are Latosols, Argisols, Planosols, Luvisols and Neosols (Araújo Filho, 2000) and the climate varies, with a predominance of the Atlantic Tropical on the coast and the semi-arid inland (Andrade 2007).

2. Taxonomic treatment

More than 800 specimens of the genus *Myrcia* were analyzed for the state of Pernambuco deposited in the herbaria: ASE, BHCB, HCF, HST, HUEFS, HVASF, IPA, MAC, MBM, NY, PEUFR, RB, SP, UPCB, UFRN, UFP (acronyms according to Thiers 2021), beyond HESBRA. All these analyzed material are deposited in the journal's Dataverse repository, disponible in: <https://data.scielo.org/dataset.xhtml?persistentId=doi:10.48331/scielodata.JTAAKH&version=DRAFT>.

Visits were made to the herbaria HESBRA, PEUFR, HVASF, UFP and IPA. Collections were also carried out in some municipalities of the state. Collections followed usual techniques in plant taxonomy (Mori et al. 1989), and the material was pressed, dehydrated and incorporated into the HESBRA collection. Identification was performed using analytical keys found in specialized bibliographies (Berg 1857-1859; Barroso & Peixoto 1990; Landrum & Kawasaki 1997; Lucas et al. 2018), literature

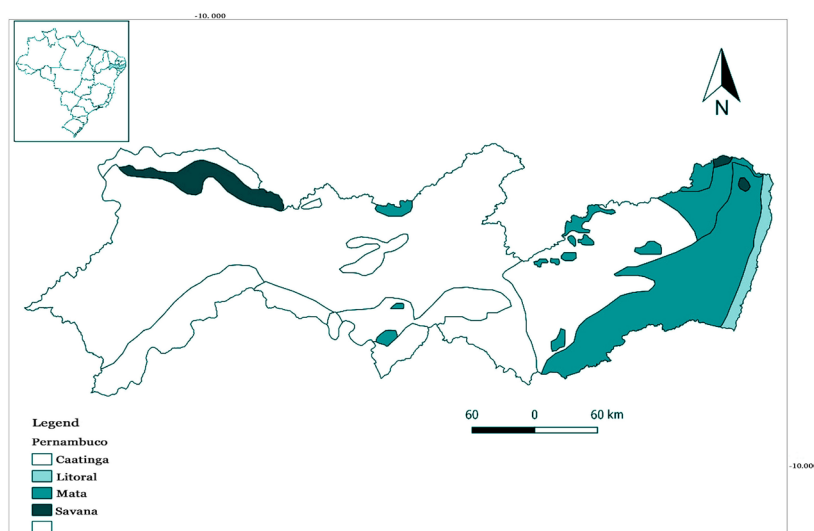


Figure 1. Map of the phytogeographical zones of Pernambuco.

reviews, queries to type-collection images available on national and foreign herbaria websites (Global Plants; <https://plants.jstor.org/>). Phenological, ecological and geographical distribution data were obtained from flora sites (www.kew.org; <https://floradobrasil.jbrj.gov.br/reflora/PrincipalUC/PrincipalUC.do?sessionId=FAD2E65FCCABD76319145E2D5273B586>) and specimen labels. For specimens from herbaria that do not have georeferenced information, the GeoLoc tool available on the SpeciesLink platform was used (specieslink.net) or the approximation of the point through Google Earth (www.google.com.br/earth). Distribution maps were produced using the software QGIS v. 2.18.28.

Results

Thirty species were identified from eight sections of *Myrcia* for Pernambuco (Figures 2–5). In the state occur nine species of *Myrcia*

sect. *Aulomyrcia* (*M. amazonica*, *M. arenaria*, *M. decorticans*, *M. hirtiflora*, *M. hypophaea*, *M. insularis*, *M. littoralis*, *M. polyantha* and *M. racemosa*); five of *M. sect. Gomidesia* (*M. grazielae*, *M. rosangelae*, *M. springiana*, *M. verrucosa* and *M. vittoriana*); four of *M. sect. Aguava* (*M. guianensis*, *M. laricina*, *M. laxiflora* and *M. ovina*); four of *M. sect. Myrcia* (*M. bergiana*, *M. isaiana*, *M. splendens* and *M. sylvatica*); three of *M. sect. Calyptanthes* (*M. loranthifolia*, *M. neoclusiifolia* and *M. neolucida*); two of *M. sect. Reticulosae* (*M. aethusa* and *M. lacerdaeana*); two of *M. sect. Sympodiomyrcia* (*M. densa* and *M. mutabilis*) and one of *M. sect. Tomentosae* (*M. tomentosa*), beyond *Myrcia* sp. which has not been included in any section yet. However, in *M. sect. Myrcia* there are two species that are widely distributed in the state (*M. sylvatica* DC. (Figure 4B) and *M. splendens* DC. (Figure 5B)), in *M. sect. Aguava* there is one (*M. guianensis* DC. (Figure 5B)), and the same for *M. sect. Tomentosae* (*M. tomentosa* DC. Figure 5A).

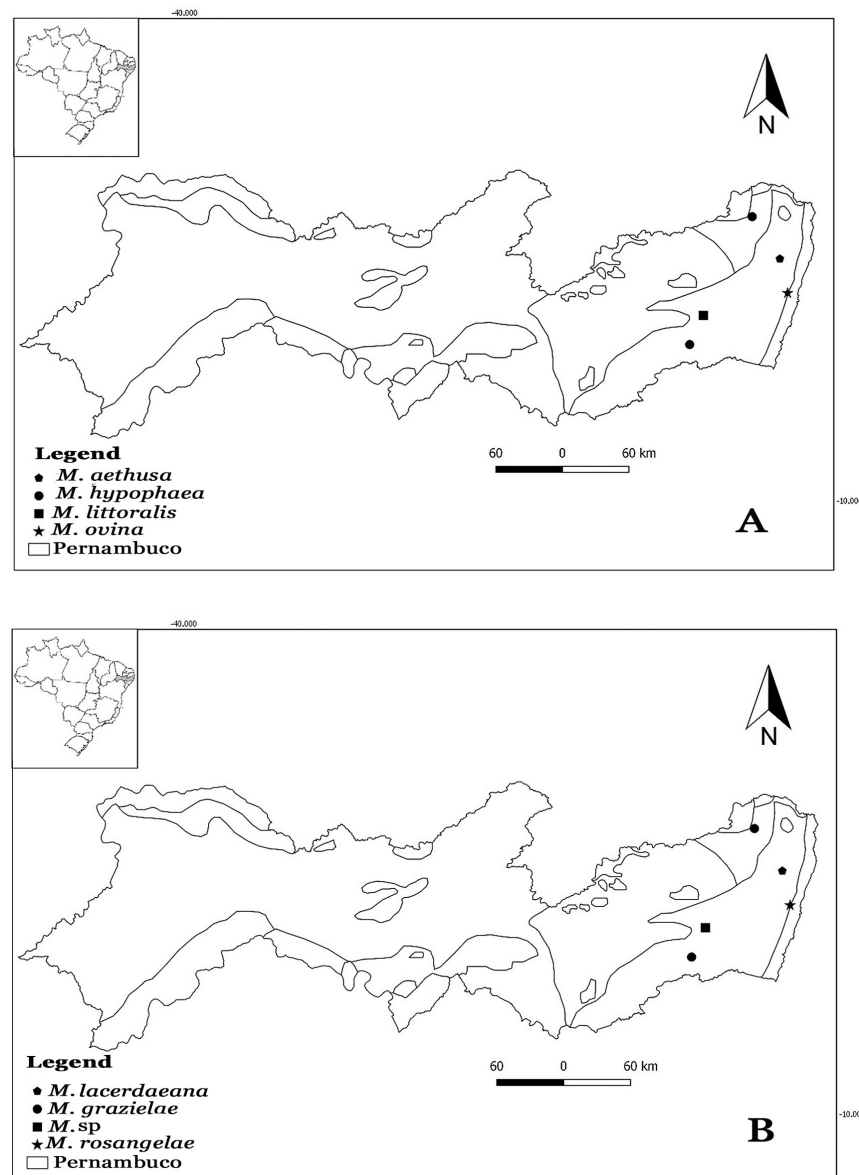


Figure 2. Distribution map of *Myrcia* species in Pernambuco. A. *M. aethusa*, *M. hypophaea*, *M. littoralis*, *M. ovina*. B. *M. lacerdaeana*, *M. grazielae*, *M. sp.*, *M. rosangelae*.

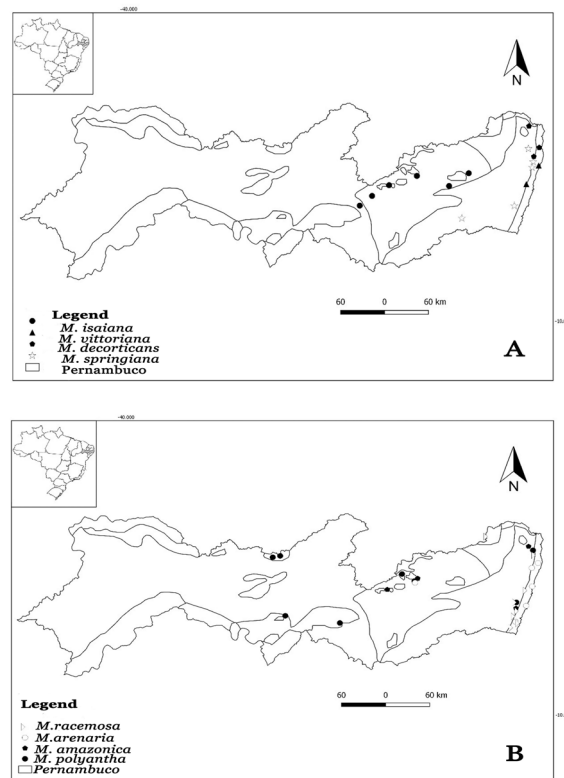


Figure 3. Distribution map of *Myrcia* species in Pernambuco. A. *M. isaiana*, *M. vittoriana*, *M. decorticans*, *M. springiana*. B. *M. racemosa*, *M. arenaria*, *M. amazonica*, *M. polyantha*.

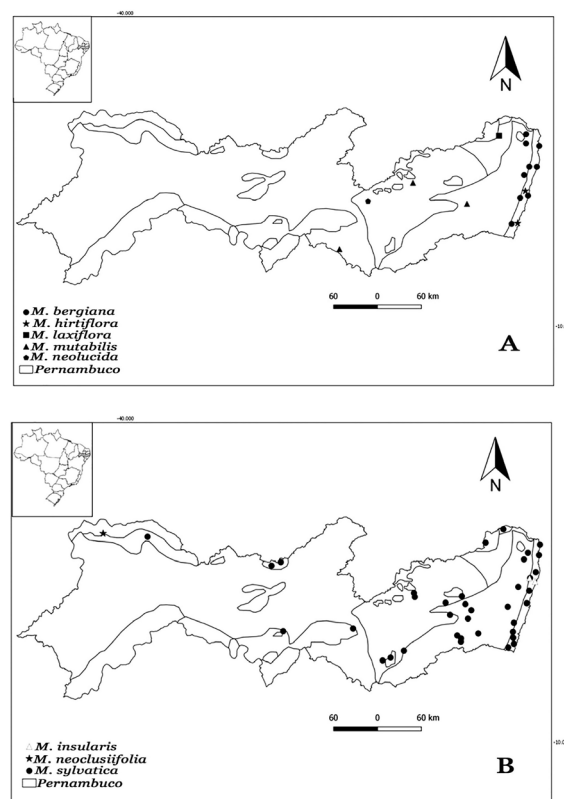


Figure 4. Distribution map of *Myrcia* species in Pernambuco. A. *M. bergiana*, *M. hirtiflora*, *M. laxiflora*, *M. mutabilis*, *M. neolucida*. B. *M. insularis*, *M. neoclusiifolia*, *M. sylvatica*.

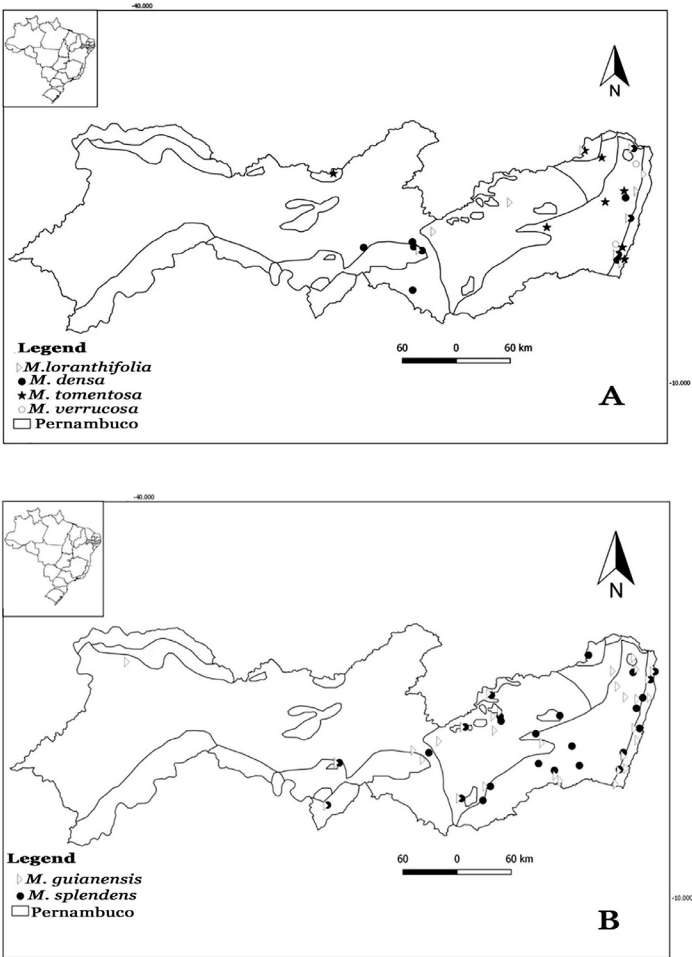


Figure 5. Distribution map of *Myrcia* species in Pernambuco. A. *M. loranthifolia*, *M. densa*, *M. tomentosa*, *M. verrucosa*. B. *M. guianensis*, *M. splendens*.

Of the 31 species occurring in Pernambuco, 23 species are endemic to Brazil and six endemics to the Northeast (Santos et al. 2024). Twenty-eight species are found in some State Environmental Protection Area or Conservation Unit. The study also revealed the occurrence of two species for Pernambuco: *M. laricina* and *M. hirtiflora*.

In the study area, *Myrcia* species were recorded in 63 cities and three phytogeographic zones of the State (Coast, Forest and Caatinga). Most species were represented in the Mata and Littoral Zone (26 spp.). Regarding the Caatinga zone, *Myrcia* can be found well distributed in the Agreste subzone (12 spp.), and a slightly smaller number of species in the sertão subzone (9 spp.) (Figures 2–5). *Myrcia arenaria* has its first published record for humid forest in the municipality of Brejo da Madre de Deus.

Twelve species are found exclusively in the Mata and Littoral zone. Species that were previously found only in the Mata and Littoral zone (Flora do Brasil 2020), were identified in the Caatinga zone as *M. aethusa* and *M. arenaria*. Some species were located only in the Caatinga zone, precisely in the Agreste subzone (*M. isaiana*, *M. ovina* *M. neolucida*) and sertão subzone (*M. neoclusiifolia*).

Myrcia DC., Dict. Class. Hist. Nat. 11: 406. 1827.

Shrubs or trees. Monopodial or sympodial branching. Trichomes simple or dibrachiate. Leaves simple, opposite couplets or crusades.

Inflorescences normally in branched panicles, bracts and bracts elliptical, lanceolate, linear, rhomboid, deltoid, rounded; Flowers 4-5 merous, calyx lobes free, partially free or fused, floral disc pilose or glabrous, ovary 2-3 locules; Fruits globose, subglobose, ellipsoid, conical; Thin testa seed; embryo with foliaceous, folded cotyledon and long hypocotyl.

Key for identification of *Myrcia* in the state of Pernambuco, Brazil

- 1 Floral disc pilose.....2
- 1' Floral disc glabrous.....10
- 2 Staminal ring thick, anthers with symmetrical thecae that curve and open completely at dehiscence.....3
- 2' Staminal ring narrow, anthers with vertically displaced asymmetric thecae that retain curvature at dehiscence.....6
- 3 Fruits globose.....4
- 3' Fruits ellipsoid.....5
- 4 Leaves not bullate; bracts linear.....4. *M. bergiana*
- 4' Leaves bullate; bracts elliptical.....12. *M. isaiana*
- 5 Leaves opposite crusade, midvein impressed adaxially; bracts lanceolate to rhomboid.....25. *M. splendens*

- 5' Leaves opposite dystic, midvein sulcate adaxially; bracts linear.....27. *M. sylvatica*
- 6 Inflorescence axis, hypanthium, flowers and fruits with floury surface; fruit conical.....30. *M. vittoriana*
- 6' Inflorescence axis, hypanthium, flowers and fruits with smooth surface; fruit globose to subglobose.....7
- 7 Leaves sessile to subsessile.....8
- 7' Leaves petiolate.....9
- 8 Leaves 7–12 × 4 cm; bracteoles deltoid 24. *M. rosangelae*
- 8' Leaves 17–23 × 4.5–8 cm; bracteole lanceolate.....7. *M. grazielae*
- 9 Apex of leaf blade rounded or obtuse, calyx lobes ovate to broad triangular.....31. *M. sp.*
- 9' Apex of the blade acuminate or acute, calyx lobes rounded.....26. *M. springiana*
- 10 Calyx lobes fused.....11
- 10' Calyx lobes free.....14
- 11 Flower buds breaking longitudinally in an irregular shape.....3. *M. arenaria*
- 11' Flower buds breaking transversely in a shape of a calyptra.....12
- 12 Leaf blades oblong, spatulate, orbicular.....19. *M. neoclusiifolia*
- 12' Leaf blades elliptical, or ovate-elliptic.....13
- 13 Branch sympodial; leaves 4.5–5.2 × 2.6–3.4 cm.....20. *M. neolucida*
- 13' Branch monopodial; leaves 10–14.5 × 4–4.2 cm.....17. *M. loranthifolia*
- 14 Calyx lobes falciform 29. *M. verrucosa*
- 14' Calyx lobes rounded, acute, deltoid, ovate to broad triangular.....15
- 15 Ovary 3–4 locular.....16
- 15' Ovary 2 locular.....21
- 16 Inflorescence thyrsoid 17
- 16' Inflorescence panicular or racemose.....18
- 17 Leaves 13.5 × 5 cm; fruit pubescent.....13. *M. lacerdaeana*
- 17' Leaves 6.7 × 3.2 cm; fruit glabrous.....1. *M. aethusa*
- 18 Leaves linear.....14. *M. laricina*
- 18' Leaves elliptical, largely elliptical, lanceolate, oval, oboval, rounded, oblong.....19
- 19 Leaves 18.5 × 8.4 cm.....15. *M. laxiflora*
- 19' Leaves 2.5–7.5 × 1–3.5 cm.....20
- 20 Hypanthium tomentose to pubescent; immature fruit orange 21. *M. ovina*
- 20' Hypanthium glabrous to puberulous; immature fruit reddish 8. *M. guianensis*
- 21 Inflorescence symmetrical 22
- 21' Inflorescence asymmetric 23
- 22 Branching monopodial; leaves 6.2 × 2.1 cm; floral bud puberulous.....6. *M. densa*
- 22' Branching sympodial; leaves 7.5 × 4 cm; floral bud pubescent.....18. *M. mutabilis*
- 23 Leaves subsessile.....10. *M. hypophaea*
- 23' Leaves petiolate.....24
- 24 Leaves obovate.....16. *M. littoralis*
- 24' Leaves elliptical, broad-elliptical, lanceolate, orbicular, ovate.....25
- 25 Leaves with 7–9 pairs of secondary veins.....28. *M. tomentosa*
- 25' Leaves with 10–20 pairs of secondary veins.....26
- 26 Leaves 21 × 10 cm 11. *M. insularis*
- 26' Leaves 3.3–17 × 2.3–7.5 cm.....27
- 27 Floral buds clavate.....9. *M. hirtiflora*

- 27' Floral buds obconic, oboval or turbinate.....28
- 28 Inflorescence 21 cm long.....5. *M. decorticans*
- 28' Inflorescence 6–15 cm long.....29
- 29 Bracts lanceolate.....2. *M. amazonica*
- 29' Bracts linear.....30
- 30 Base of leaf blade wedge-shaped; fruit 9–10 × 7–8 mm.....23. *M. racemosa*
- 30' Base of leaf blade obtuse or rounded; fruit 5–7 × 5–9 mm.....22. *M. polyantha*

1. *Myrcia aethusa* (O. Berg) N. Silveira, (1985: 67). Fig. 6A

Tree, 6–9 m tall, inserted in *Myrcia* sect. *Reticulosae* (Fernandes et al. 2020), this species is characterized by elliptical or oval leaves (6.7 × 3.2 cm), glossy on the abaxial side, very evident veins and punctuations, inflorescences in brachyblasts, axillary or terminal. It resembles *M. lacerdaeana* in that it has strongly reticulated veins and a thyrsoid inflorescence but can be distinguished mainly by its obtuse to attenuate leaf base and glabrous fruit (vs. cuneate base and pubescent fruits *M. lacerdaeana*).

Distribution, ecology and phenology: Endemic to Brazil, distributed in the Northeast (Bahia, Pernambuco), Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo) and South (Paraná, Rio Grande do Sul, Santa Catarina) regions, in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco, it occurs in the inside of the seasonal forest and in the Caatinga zone at elevations of 565–960 m (Fig. 2A). Flowering in December and January.

Specimens examined: BRAZIL, PERNAMBUCO: Brejo da Madre de Deus, Malhada, 18.I. 2000, fl., *A.G. Silva et al. 208* (PEUFR, RB); idem, Mata da Malhada, 31 de janeiro de 2000, fl., *A.G. Silva et al. 340* (IPA); Taquaritinga do Norte, sítio Cafundó, 28.XII.1972, fl., *Andrade-Lima 72-7161* (IPA, RB).

2. *Myrcia amazonica* DC. (1828:20). Fig. 6B

Tree, 3–8 m tall, belongs to *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016). *Myrcia amazonica* can be recognized by the elliptical or oval leaves heavily brownish on both sides, lanceolate bracts and the inflorescence, bracts, bracteoles and hypanthium densely covered by rusty trichomes. In the flower bud, the ovary stands out for being more hairy than the sepals.

Distribution, ecology and phenology: Distributed in Tropical America (POWO 2024). In Brazil, it is found in all regions of the country, in the domains of the Amazon Cerrado and Atlantic Forest (Santos et al. 2024). In Pernambuco, it was observed on the edge and inside the seasonal forest in Brejos de Altitudes da Caatinga (565–1030 m) (Fig. 2B). Flowers from October to January and fruits in December and May.

Specimens examined: BRAZIL, Pernambuco: Brejo da Madre de Deus, Propr. Bituri, 28.XII.1966, fl., *Andrade-Lima 66-4887* (IPA, RB); Brejo da Madre de Deus, Propr. Bituri, 06.XI. 1998, bt., *L.M. Nascimento et al. 139* (PEUFR); Pesqueira, Serra do Ororubá, Mata da Faz. São Francisco, 11.I.1995, fr., *M. Correia 142* (RB).

3. *Myrcia arenaria* L.L. Santos, M.F. Sales & Sobral (2016: 123). Fig. 6C

Shrub or tree, 2.5–6 m tall, included in *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016). *Myrcia arenaria* has an inflorescence with short

Myrcia of Pernambuco

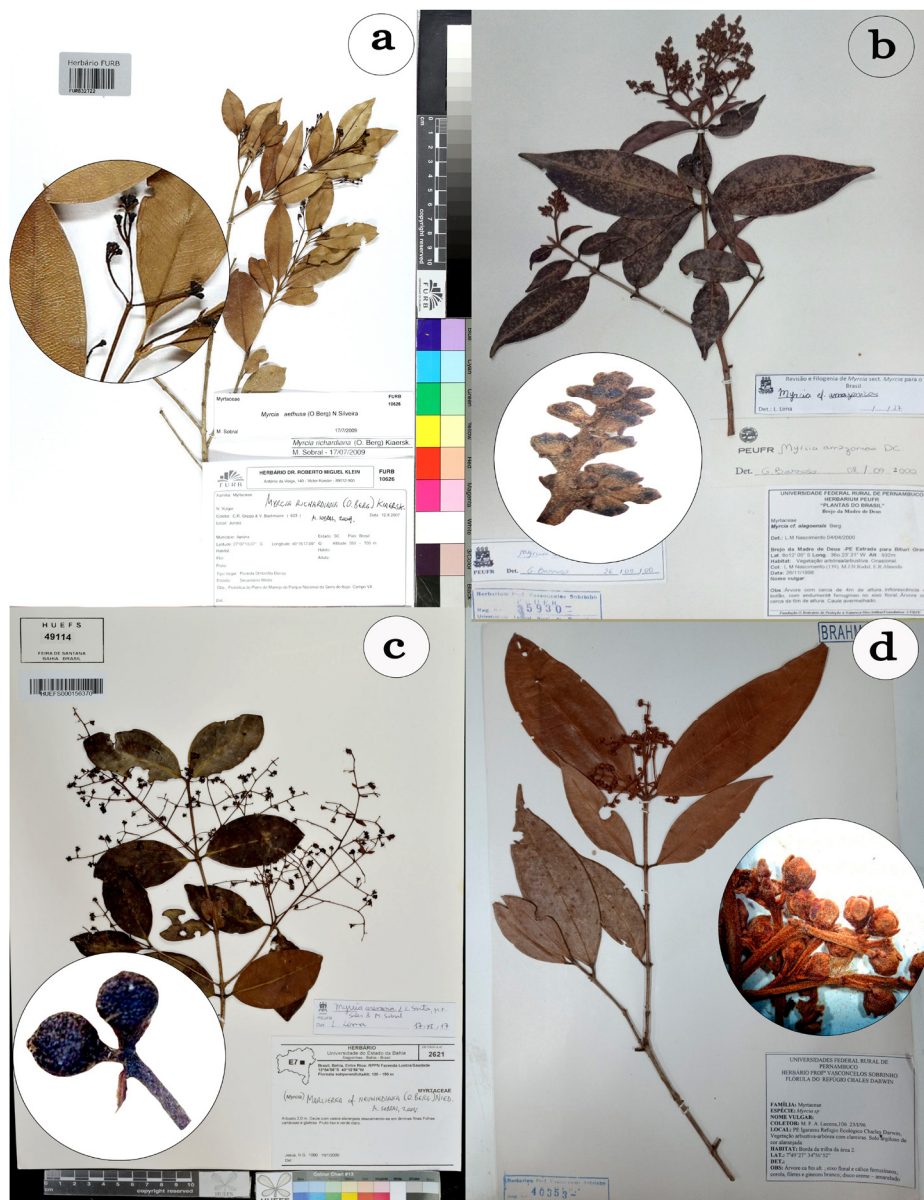


Figure 6. a. *Myrcia aethusa* (O. Berg) N. Silveira. Habit and floral bud in detail (C. R. Grippa & V. Bachmann 623). b. *Myrcia amazonica* DC. Habit (L. M. Nascimento et al. 246) and floral bud in detail (L. M. Nascimento et al. 135). c. *Myrcia arenaria* L.L. Santos, M.F. Sales & Sobral. Habit and floral bud in detail (N. G. Jesus 1090). d. *M. bergiana* O. Berg. photo at field.

lateral branches and concave to oval shaped bracts. In the State, it is the only species of the section with fused flower buds, breaking longitudinally in an irregular shape, while the other species present free floral buds.

Distribution, ecology and phenology: It is endemic to Brazil distributed in the Northeast region in the states of Alagoas, Bahia, Pernambuco and Sergipe, in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco it is found in the Atlantic Forest, Reserva Particular do Patrimônio Natural Fazenda Bituri, in the Reserva Dois Irmãos, mainly in open and closed restinga forests, in this study it is recorded for the first time in humid forests of the Caatinga (Fig. 3B). Flowers in February and between September and December, and fruits in March and December.

Specimens examined: BRAZIL, Pernambuco: Brejo da Madre de Deus, Fazenda Bituri, Bituri de baixo, 16.III.1996, fr., *M.C. Tschá et al.* 712 (PEUFR, RB); idem, Mata do Bituri, 29 de fevereiro de 2000, fl., *A.G. Silva & L.M. Nascimento* 244 (PEUFR, RB); Cabo de Santo Agostinho, Distrito de Ponte dos Carvalhos, Restinga da Praia do Paiva, área 2, mais aberta, 20.X.1997, fl., *A. Sacramento* 195 (PEUFR); Cabo de Santo Agostinho, Distrito de Ponte dos Carvalhos, Restinga da Praia do Paiva, 04.XI.1998, fr., *A. Laurênio* 1018 (PEUFR); Ipojuca, RPPN Nossa Srª do Oiteiro de Maracaípe. 31.VIII.2008, fl., *J.B. Oliveira et al.* 92 (UFP) Paulista, Praia da Conceição, a margem da estrada, 16.XI.1961, bot., *S. Tavares* 860 (UFP); Recife, Dois irmãos, 15.XII.1988, fl., *M.A Cruz & A. Rossano* 72 (UFP).

4. *Myrcia bergiana* O. Berg (1857:194). Fig. 6D

Shrub or tree, 1.5–8 m tall, inserted in *Myrcia* sect. *Myrcia* (Lucas et al. 2016). *Myrcia bergiana* is mainly characterized by the presence of rusty indumentum on the young leaves and floral buds. It differs from the other species of *Myrcia* sect. *Myrcia* in the study area has young leaves and floral buds with hyaline, whitish, yellowish or brownish indumentum. It is similar to *M. splendens* by the elliptic, lanceolate or oval leaves, but is distinguished morphologically by the globose fruits (vs. ellipsoid fruits in *M. splendens*).

Distribution, ecology and phenology: It is endemic to Brazil, distributed in almost all states of the Northeast region (Alagoas, Bahia, Paraíba, Pernambuco, Rio Grande do Norte, Sergipe) and in the Southeast region in the state of Espírito Santo, in the Caatinga and Atlantic Forest domains (Santos et al. 2024). In Pernambuco, it is found on the edge and interior of restinga, in the Atlantic Forest of the Refúgio Ecológico Charles Darwin, Mata da Usina São José, Mata Engenho Macaxeira, and in the Reserva Biológica de Saltinho (Fig. 4A). Flowering from January to June and fruiting from March to July.

Specimens examined: BRAZIL, Pernambuco: Cabo de Santo Agostinho, Ilha de Tatuoca, 14.IV.1997, fl., *J.E. Paula s.n.* (VIC 29611); idem, povoado do Tiriri de Dentro, 29 de julho de 2011, fr., *L.R. Silva 351* (HST, RB); Goiana, Porto de Pedra, 09.V.1989, fl., *M.L. Guedes & M.D.B. de Moura 1729* (PEUFR); Igarassu, Refúgio Ecológico Charles Darwin, 05.IV.1996, bot., *M. Oliveira 271* (PEUFR); Itamaracá, Macaxeira, 30.III.1998, bot., *A. Laurênio 953* (PEUFR); idem, Trilha dos Holandeses, caminho para Vila Velha, 31.X.2021, bot., *J.G.S. Alves & L. Lima 141* (HESBRA); Jaboatão dos Guararapes, Prazeres, capoeira nos Montes Guararapes, 02.II.1930, bot., *B. Pickel 2326* (IPA); Tamandaré, Restinga de Ariquindá, 30.IV.2002, fr., *S.S. Lira 340* (PEUFR, BHCB).

5. *Myrcia decorticans* DC. (1828:22). Fig. 7A

Tree, 3–4 m tall, inserted in the *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016), this species can be easily recognized by the orbicular or ovate leaves and elongated panicles to 21 cm. It differs from *M. polyantha* by inconspicuous secondary veins on both sides of the leaf blade and by triangular to deltoid calyx lobes (vs. conspicuous secondary veins on both sides of the leaf blade and rounded calyx lobes in *M. polyantha*).

Distribution, ecology and phenology: Species recorded from Tobago to Northeast Brazil (POWO 2024), to the states of Alagoas, Bahia, Pernambuco and Sergipe in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco it is found on the edge of the Atlantic Forest of the Reserva Particular do Refúgio Ecológico Charles Darwin and in fragments of the Usina São José (Fig. 3A). Fruiting from February to May and in October.

Specimens examined: BRAZIL, Pernambuco: Goiana, BR 101, 06.IV.1983, fr., *A. Chiappeta & R. Barreto s.n.* (IPA 31191); Igarassu, Refúgio Ecológico Charles Darwin, Área 2, 19.II.1996, fr., *M. Falcão 122* (PEUFR, MAC); Paulista, Reserva Ecológica de Caetés, *A.D. Bocage et al. 72* (IPA); Recife, Dois Irmãos, Mata de Dois Irmãos, *Dora et al. s.n.* (IPA 52849).

6. *Myrcia densa* (DC.) Sobral (2006: 136). Fig. 7B

Shrub, 1.2–2 m tall, belongs to *Myrcia* sect. *Sympodiomyrcia* (Santos et al. 2018). This species has ovate, obovate, narrowly elliptic leaf blade, ca. 6.2 × 2.1 cm, and inconspicuous tertiary venation.

M. densa resembles *M. mutabilis* in symmetrical inflorescence arrangement, turbinate flower bud morphology, and is differentiated by having monopodial branching, obtuse to rounded leaf blade base, puberulous floral buds (vs. sympodial branching, leaf blade base, pubescent floral buds in *M. mutabilis*).

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast region to the states of Bahia, Paraíba, and Pernambuco, and in the Southeast to Minas Gerais, in the Caatinga, Cerrado, and Atlantic Forest domains (Santos et al. 2024). In Pernambuco it occurs at the forest edge, both in Caatinga and Atlantic Forest, with a record for the Parque Nacional do Catimbau (Fig. 5A). Flowers from November to February, fruiting in January and April.

Specimens examined: BRAZIL, Pernambuco: Buíque, Sopé da Serra, 12.I.1996, fr., *K. Andrade 297* (PEUFR, NY); Buíque, Vale do Catimbau, 03.IV.2000, fr., *A.P.S. Gomes 510* (IPA, MAC); Buíque, Vales do Catimbau, 12.II.2008, fl., *H.B. Oliveira et al. 12* (HST); Cabo de Santo Agostinho, Suape, III.1993, *O. Lira s.n.* (UFP 08506); Goiana, próximo à estrada da Usina Matari, 28.XII.1965, fl., *Andrade-Lima 65-4359* (IPA); Rio Formoso, Praia de Guadalupe, 1986, *P. Coelho 50690* (IPA); Sirinhaém, praia de Guadalupe, 28.IX.2001, fl., *J. Cantarelli et al. 621* (IPA); Tamandaré/Rio Formoso, entrada Zé Batista, Mata da Burlia, 29.IV.2009, fr., *B.S. Amorim 480* (UFP, NY).

7. *Myrcia grazielae* NicLugh. (2012:238-240). Fig. 7C

Tree, ca. 5–7 m tall, inserted in *Myrcia* sect. *Gomidesia* (Amorim et al. 2019), its main characteristics are elliptic to oblong leaves with slightly short and acuminate apex and obovate flower buds with golden trichomes. *Myrcia grazielae* is similar to *M. rosangelae* by its sessile to subsessile leaves and is differentiated by large (17–23 × 4.5–8 cm) lanceolate bracteoles (vs. smaller (7–12 × 4 cm), deltoid bracteoles).

Distribution, ecology and phenology: It is endemic to Brazil, and occurs in the Northeast region of the country, in the states of Alagoas, Bahia, and Pernambuco (Santos et al. 2024). In Pernambuco, it can be found at the margin or in the interior of the Atlantic Forest surrounding Reserva Particular do Patrimônio Privado Frei Caneca (Fig. 2B). Flowers and fruits between January and March.

Specimens examined: BRAZIL, Pernambuco: Vicência, Engenho do Jundiá, córrego do Piriri, margem da mata, 7.I.1961, fl., *S. Tavares 572* (HST, US); Vicência, Serra da Mascarenhas, margem da estrada do Engenho Chichá, Fazenda Rochedo, 28.XI.1957, fl., *Andrade-Lima 57-2816* (IPA); Jaqueira, RPPN Frei Caneca, Mata Cabogi, trilha principal, caminho para riacho do Quengo, interior da mata. 11.III.2010, fr., *B. S. Amorim 817* (UFP, NY).

8. *Myrcia guianensis* (Aubl.) DC. (1828: 245). Fig. 7D

Shrub or tree, 0.5–8.5 m tall, inserted in *Myrcia* sect. *Aguava* (Lima et al. 2018). *Myrcia guianensis* can be identified by the obovate or elliptical leaves with evident punctuations on the abaxial side and terminal peduncle with 1–3 flowers. This species is similar to *Myrcia ovina* in leaf and flower shape and size but is distinguished by having glabrous to pubescent hypanthium and reddish fruit (vs. tomentose to pubescent hypanthium and orange fruit in *M. ovina*).

Distribution, ecology and phenology: Distributed in Trinidad and Panama to the South of Tropical America (POWO 2024). In Brazil, it occurs in all regions of the country and covers all phytogeographic domains (Santos et al. 2024). In Pernambuco it is widely distributed

Myrcia of Pernambuco

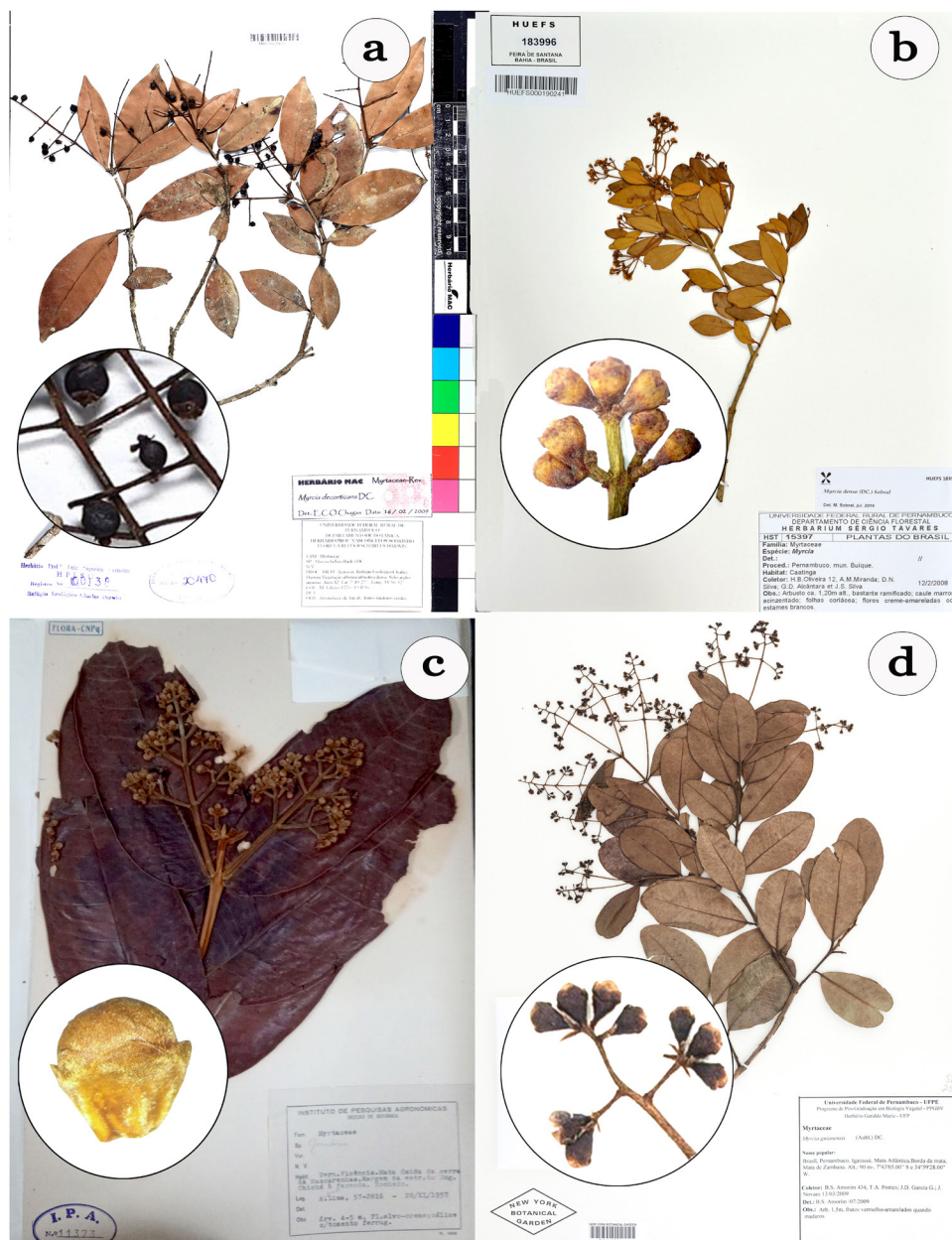


Figure 7. a. *Myrcia decorticans* DC. Habit and fruits in detail (*M. Falcão 122*). b. *Myrcia densa* (DC.) Sobral. Habit (*H.B. Oliveira et al. 12*) and floral bud in detail (*J. A. Siqueira-Filho et al. 2708*). c. *Myrcia graziellae* NicLugh. Habit and floral bud in detail (*A. Lima 57-2816*). d. *Myrcia guianensis* (Aubl.) DC. Habit (*B.S. Amorim 434 et al.*) and floral bud in detail (*J.A. Siqueira-Filho et al. 2708*).

(Fig. 5B) and can be found in different vegetation types and several Conservation Units. Flowering and fruiting all year round.

Specimens examined: BRAZIL, Pernambuco: Agrestina, Serra da Árvore Solitária, 21.III.2005, fl., *Y. Melo 19* (UFP); Arcoverde, Serra das Varas, Mata da Jacú, trilha principal, 22.II.2006, fr., *R. Pereira et al. 2695* (IPA, HUEFS); Barreiros, Mata da Gia, 03.XII.1999, bot., *J.R.R. Cantarelli et al. 235* (PEUFR); Belo Jardim, na subida do morro da árvore solitária, 21.III.2005, fl., *J.R. Maciel et al. 17* (PEUFR); Brejo da Madre de Deus, Fazenda Bituri, 14.III.1996, fr., *L.F. Silva et al. 176* (PEUFR, RB); Buíque, estrada Buíque, Catimbau, 04.IV.1995, fr., *A. Laurênio & A.P.S. Gomes 29* (PEUFR); idem PARNA do Vale do

Catimbau, Serra de Jerusalém, 12.I.2012, bt. *J.A. Siqueira-Filho et al. 2708* (HVASF); Cabo de Santo Agostinho, Engenho Boa Vista, Mata do Zumbi, 14.III.1995, fl., *D.R. Siqueira & M.N.J. Rodal 82* (PEUFR); Caruaru, Limite Caruaru - Agrestina, Inselbergue Pedra do Guariba, 26.II. 2008, fr., *P. Gomes et al. 762* (UFP, HUEFS); Escada, Engenho Conceição, 10.VI.1967, fr., *I. Pontual 551* (PEUFR, UFP); Floresta, Inajá, Reserva Biológica de Serra Negra, 21.VII.1995, fr., *M.C. Tschá, et al. 152* (PEUFR, NY); Garanhuns, Morro do Mogano, cerrado ao lado do Cruzeiro, 20.I.1972, fl., *without collector* (RB); Iati, RRPN, Fazenda Brejo, Brejo de Altitude, 11.IX.2008, fr., *M. Oliveira 3535* (HVASF); Igarassu, Refúgio Ecológico Charles Darwin, 20.III.1997,

fl., *M.F.A. Lucena et al.* 245 (PEUFR); Igarassu, Mata de Zambana, 13.III.2009, fr., *B.S. Amorim* 434 (UFP); Ipojuca, Mata do Muro Alto, em frente ao futuro Ekoara, 20.III.2010, bot., *M. Ibrahim, et al.* 190 (HUEFS); Ipubi, Serra das Placas, 11.II.1998, fr., *C. Ferreira* 61836 (IPA); Itamaracá, Forte Orange, Trilha dos Holandeses, 31.XI.2021, fl./ fr., *J.G.S. Alves & L. Lima* 142 (HESBRA); Maraial, Engenho Curtume, 24.IV.1997, fl., *G.S. Baracho & J.A. Siqueira-Filho* 547 (HVASF); Nazaré da Mata, Mata da Alcaparra, 29.V.2010, *M.J. Silva* 85250 (IPA); Pesqueira, Serra de Ororubá, numa capoeira, 23.II.1962, fr., *J. Mattos & N. Mattos* 9803 (SP); Recife, Mata de Dois Irmãos, mod 11 ind. 54, 14.II.1990, bot., *M.L. Guedes s.n.* (RB 369136); Rio Formoso, Mata do Ribeira, 27.II.2002, bot., *S.S. Lira et al.* 291 (PEUFR); São José da

Coroa Grande, Fazenda Morim, 05.IV.2009, fr., *B.S. Amorim et al* 474 (UFP, NY); Sirinhaém, Mata de Xanguá, borda da Mata, 10.II.2004, bot., *M. Oliveira A. A. Grillo* 1529 (UFP, RB); Tacaratu, BR 316, próximo a Petrolândia., 28.I.2009, fl./ fr., *V.D. Silva* 76 (HVASF); Tamandaré, Mata da Bulia, borda da mata, REBIO Saltinho, 29.V.2009, fr., *B. S. Amorim & A. Alves-Araújo* 470 (UFP, NY).

9. *Myrcia hirtiflora* DC. (1828: 249). Fig. 8A

Shrub or tree, 2–6 m tall, belonging to *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016). *Myrcia hirtiflora* has inflorescences, flowers and fruits covered with lanuginous, whitish to cream trichomes. It is often confused with *Myrcia tomentosa* in herbaria, because it has clavate

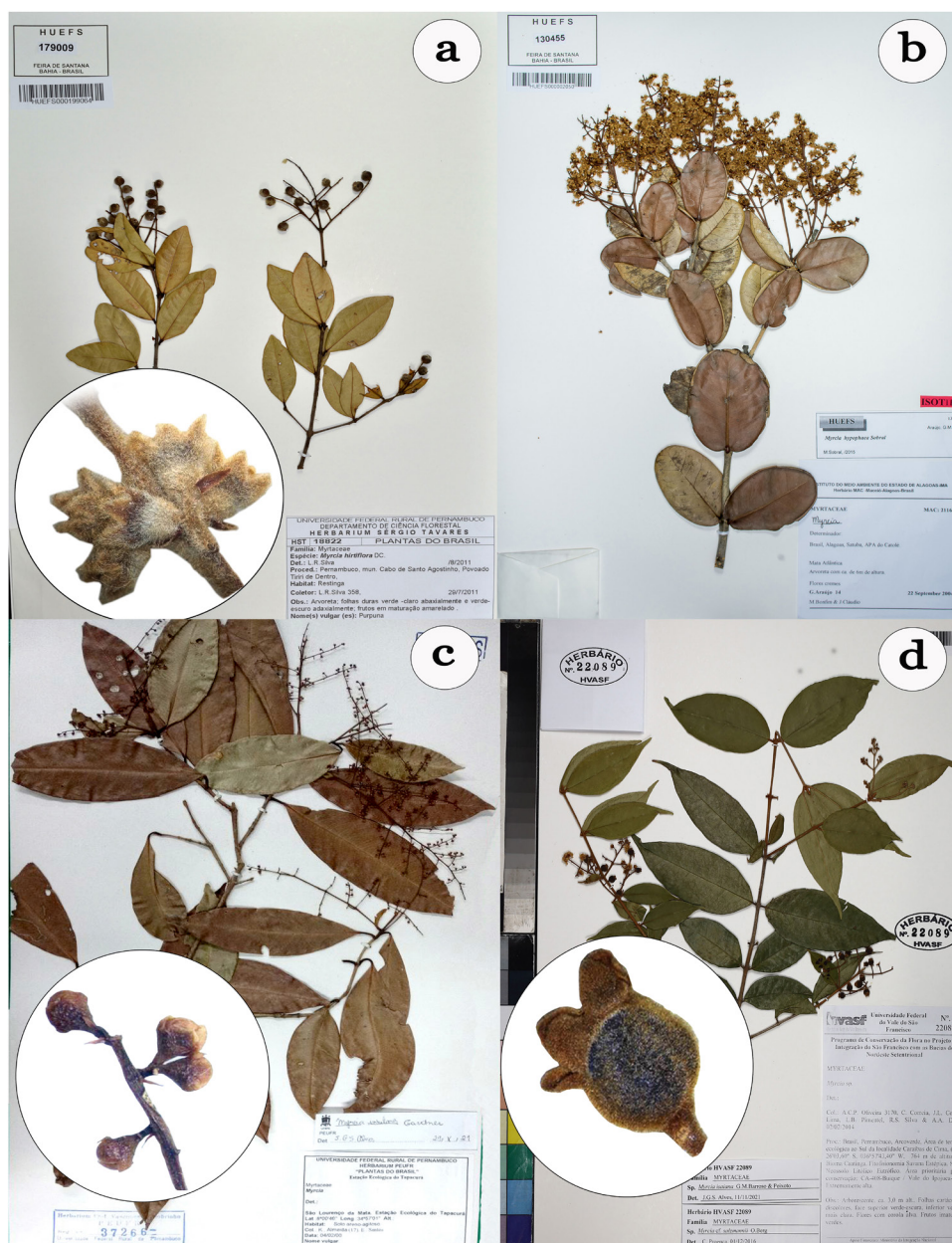


Figure 8. a. *Myrcia hirtiflora* DC. Habit (*L.R. Silva* 358) and floral bud in detail (*A. Sacramento* 574). b. *Myrcia hypophaea* Sobral. Habit (*G. Araújo* 14). c. *Myrcia insularis* Gardner. Habit and floral bud in detail (*K. Almeida & E. Santos*, 17). d. *Myrcia isaiana* G.M. Barroso & Peixoto. Habit (*A.C.P. Oliveira et al.* 3170) and fruit in detail (*A.G. Silva* 365).

and sessile flower buds. However, it can be differentiated by the carthaceous leaves, evenly distributed on the extremities of the branches, inconspicuous secondary and tertiary veins, triangular calyx lobes, fruit with woolly indumentum (vs. membranous leaves concentrated in spirals on the extremities of the branches, conspicuous secondary and tertiary veins on the abaxial side, fruit with tomentose indumentum in *M. tomentosa*).

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast region in the states of Bahia and Sergipe in the Atlantic Forest domain (Santos et al. 2024). It is recorded here for the first time for Pernambuco and can be found in open shrubby restinga and on rocks (Fig. 4A), and in the Parque Estadual Mata do Zumbi, at altitudes of 57 m. It flowers from November to January and fruits from March to July and in October.

Specimens examined: BRAZIL, Pernambuco: Cabo de Santo Agostinho, Área Projeto Suape, Mata do Zumbi, Estação B, 1.XI.1977, fl., *Andrade-Lima & Medeiros Costa 53* (IPA); idem, Engenho Boa vista, Mata do Zumbi, 18.I.1995, fl., *D.R. Siqueira, 49 et al.* (PEUFR); idem, Distrito do Ponte dos Carvalhos, Praia do Paiva, 25.III.1997, fr., *A. Sacramento & A.M.S. Reis 46* (PEUFR); idem, Povoado Tiriri de Dentro, 29.VII. 2011, fr., *L.R. Silva 358* (HST); idem, Ponte dos Carvalhos, Restinga da Praia do Paiva, 04.XI.1996, *A. Sacramento 574* (IPA); Tamandaré, Loteamento Estrela-do-Mar, 15.V.1999, fr., *M.F.A. Lucena et al. 718* (PEUFR); idem, Mata do Gia, 03.XII.1999, fl., *A. Sacramento 598* (PEUFR); idem, Restinga de Ariquindá, 09.IV.2003, fr., *S.S.Lira et al. 561* (PEUFR).

10. *Myrcia hypophaea* Sobral (2015: 216). Fig. 8B

Tree, 7–10 m tall, inserted in *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016). It is characterized by orbicular, obovate, rarely elliptical leaves, multi-flowered inflorescence, small vinaceous red flowers. It is confused with *Myrcia decorticans*, because of the position and architecture of the inflorescence, but is especially distinguished by the subsessile leaves, dark on the abaxial side, rounded apex (vs. petiolate leaves, dark on the adaxial side, acute or obtuse apex in *M. decorticans*).

Distribution, ecology and phenology: It is endemic to Brazil with an exclusive distribution in the northeastern region of the country to the states of Alagoas, Bahia, Paraíba, and Pernambuco, in the Atlantic Forest domain (Santos et al. 2024). In the study area, it is recorded only in wet forests of the Zona da Mata (Fig. 2A).

Specimens examined: BRAZIL, Pernambuco: Igarassu, Usina São José, Fragmento Chave, sem data, fl., *T.N.F. Guerra 137* (PEUFR).

11. *Myrcia insularis* Gardner (1842: 536). Fig. 8C

Tree, ca. 12 m tall, belongs to *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016), *Myrcia insularis* is recognized by its elliptic, broad elliptic or lanceolate leaves (ca. 21 × 10 cm long.) with obtuse to rounded apex, pyramidal-shaped inflorescence, obovate buds, lanceolate bracts, and linear bracteoles.

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast (Bahia, Pernambuco), Southeast (Espírito Santo, Rio de Janeiro, São Paulo), South (Paraná), to the Atlantic Forest domain (Santos et al. 2024). In Pernambuco, it occurs in the Atlantic Forest, in the Estação Ecológica do Tapacurá (Fig. 4B), flowering in February.

Specimens examined: BRAZIL, Pernambuco: Recife, Mata do Curado, 12.XI.1970, *I.C.C. Bulhões s.n.* (UFP 03309); idem, Mata do Curado, Exército, 04.X.1994, *R. Pereira s.n. et al.* (IPA 56846); São Lourenço da Mata, Estação Ecológica do Tapacurá, 04.II.2000, fl., *K. Almeida & E. Santos 17* (PEUFR).

12. *Myrcia isaiana* G.M. Barroso & Peixoto (1990: 8). Fig. 8D

Shrub or tree, 1–9 m tall, included in *Myrcia* sect. *Myrcia* (Lucas et al. 2011). *Myrcia isaiana* can be identified by the large globose flower buds and by the fruits having an elongated calyx. It is confused with *Myrcia splendens* for having bulged leaves, however the leaves in *M. isaiana* are strongly bulged, revolute and the fruits are globose, while in *M. splendens* the leaves are flat or slightly bulged, not revolute and the fruits are elliptic.

Distribution, ecology and phenology: It is endemic to Brazil, occurs in the Northeast (Alagoas, Bahia, Pernambuco), Southeast (Espírito Santo, Rio de Janeiro, São Paulo) and South (Paraná) regions, in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco, it is found in the humid forest in open shrubby-arboreal Caatinga, and within the Seasonal Forest of the Parque Ecológico de Serra Negra and the Parque Nacional do Catimbau (Fig. 3A), at elevations 456–960m. It flowers from October to January and fruits from December to February.

Specimens examined: BRAZIL, Pernambuco: Arcoverde, Área de tensão ecológica ao Sul da localidade Caraíbas de Cima, 02.II.2014, fr., *A.C.P. Oliveira 3170* (HVASF); Bezerros, Parque Ecológico de Serra Negra, 27.XII.1995, bot., *M. Tschá et al. 435* (PEUFR); Brejo da Madre de Deus, Mata do Malhada, 18.I.2000, bot., *C.A.M. Oliveira et al. 51* (PEUPR), Buíque, Parque Nacional do Catimbau., 25.I.2011, fl., *O. Marcondes & F.F. Christianne 5428* (HVASF); Caruaru, Brejo dos Cavalos, Fazenda Caruaru, 01.XII.1994, bot., *M. Tschá et al. 1* (PEUFR); Pesqueira, Serra do Ororubá, Mata da Fazenda São Francisco, 11.I.1995, fr., *M. Correa & G. M Barroso 172* (RB).

13. *Myrcia lacerdaeana* O. Berg (1857: 193). Fig. 9A

Tree, ca. 9 m tall, included in *Myrcia* sect. *Reticulosae* (Fernandes et al. 2020). This species is characterized by elliptic to oblong leaves (13.5 × 5 cm) and by having a much more hairy ovary than calyx, as well as large calyx lobes ca. 5 × 6 mm. It shares characteristics of rib shape and inflorescence with *M. aethusa*, but differs by the mentioned characters of this species.

Distribution, ecology and phenology: It is endemic to Brazil, occurs in the Northeast region in the states of Alagoas, Bahia and Pernambuco and Southeast in Espírito Santo to the Atlantic Forest domain (Santos et al. 2024). In Pernambuco it occurs in areas of Atlantic Forest in the Estação Ecológica do Tapacurá (Fig. 2B). Flowering in March.

Specimens examined: BRAZIL, Pernambuco: São Lourenço da Mata, Estação Ecológica do Tapacurá, 19.III.2000, fr., *K. Almeida 31* (PEUFR, NY).

14. *Myrcia larinica* (O. Berg) Burret ex Luetzelbg. (1926: 201). Fig. 9B

Inserted in *Myrcia* sect. *Aguava* (Lima et al. 2018), *Myrcia larinica* stands out among all *Myrcia* species in the study area for its linear leaves with spiral or verticillate phyllotaxis and globose, usually costate fruits.

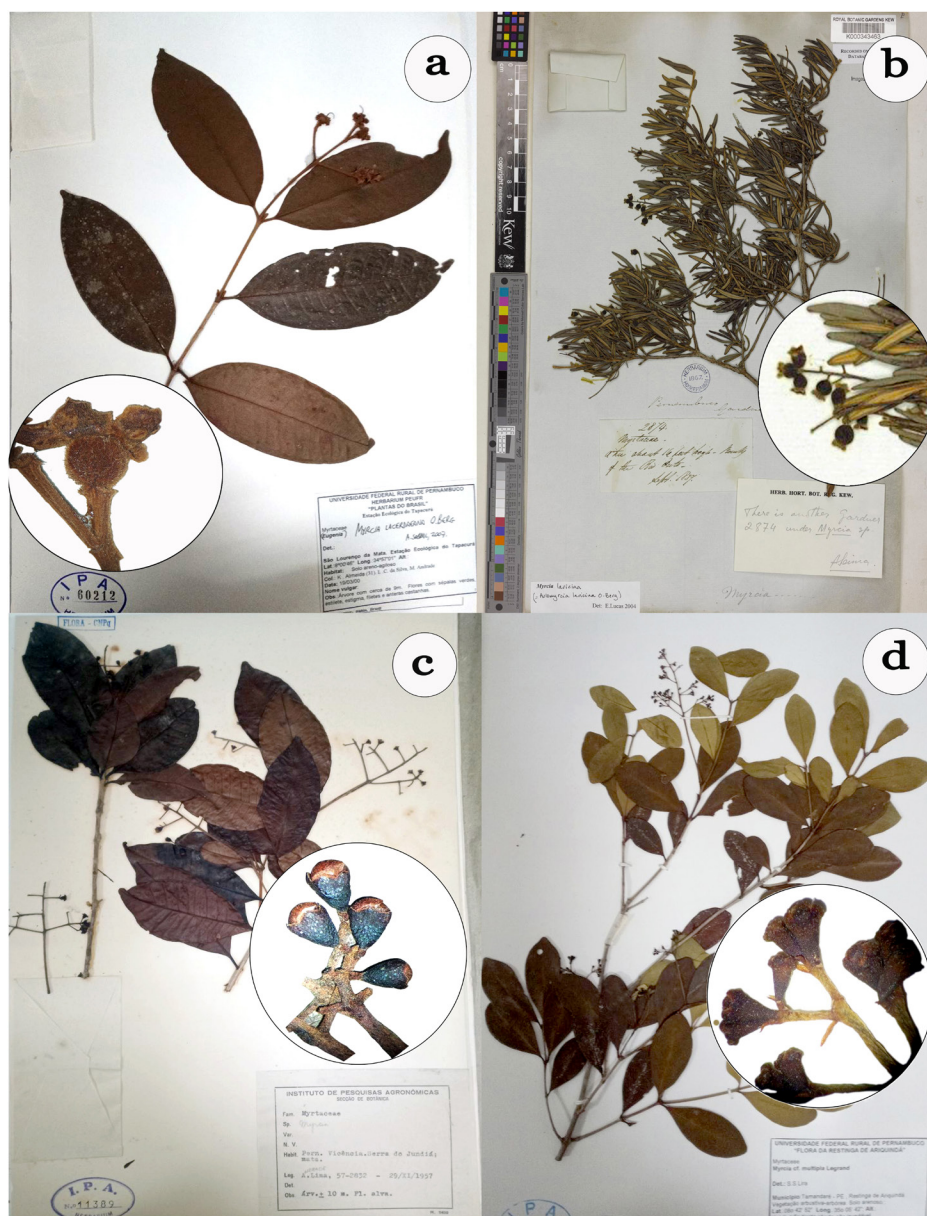


Figure 9. a. *Myrcia lacerdaiana* O. Berg. Habit and fruit in detail (K. Almeida et al. 31). b. *Myrcia laricina* (O.Berg) Burret ex Luetzelb. Habit and fruit in detail (T. M. Moraes 503). c. *Myrcia laxiflora* Cambess. Habit and flora bud in detail (A. Lima 57-2832). d. *Myrcia littoralis* DC. Habit and flora bud in detail (S.S. Lira et al. 408).

Distribution, ecology and phenology: It is endemic to Brazil distributed in the northern regions to the state of Tocantins, northeastern to Bahia, and southeastern to Minas Gerais, in the Cerrado domain (Santos et al. 2024). Recorded for the first time for Pernambuco. Fruiting in January.

Specimens examined: BRAZIL, Pernambuco: Margens do Rio Preto, 09.I.1839, fr., G. Gardner 2874 (K). Idem, 09.I.1839, fr., G. Gardner 2875 (K).

15. *Myrcia laxiflora* Cambess. (1829 [1832]: 319). Fig. 10C

Tree, ca. 10 m tall, inserted in *Myrcia* sect. *Aguava* (Lima et al. 2018). *Myrcia laxiflora* has elliptic leaves (ca. 18.5×8.4 cm long) with conspicuous secondary veins, obtuse apex, short reduced calyx lobes, practically undifferentiated from the others.

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast to the State of Pernambuco and Southeast to the States of Espírito Santo, Minas Gerais, Rio de Janeiro, and São Paulo, in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco it has only one record in the Zona da Mata (Fig. 4A). Flowering in November.

Specimens examined: BRAZIL, Pernambuco: Vicência, Serra do Jundiá, 29.XI.1957, fl., Andrade-Lima 2832 (IPA, RB).

16. *Myrcia littoralis* DC. (1828: 249). Fig. 9D

Shrub or tree, 3–4 m tall, belongs to *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016), *Myrcia littoralis* is recognized by obovate leaves with rounded, emarginated or obtuse apex, glabrous young branches and turbinate flower buds. It resembles some morphotypes of *Myrcia*

guianensis that have obovate leaf, but is distinguished by the glabrous young branches, ovary locules 2 (vs. young branches sparsely or moderately covered by trichomes, ovary locules 3 in *M. guianensis*).

Distribution, ecology and phenology: It is endemic to Brazil distributed in the Northeast (Alagoas, Bahia, Paraíba, Pernambuco, Sergipe) and Southeast (Espírito Santo) regions, in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco, it occurs in the interior of restinga and in non-inundable open forest (Fig. 2A). It flowers in October and bears fruit in April.

Specimens examined: BRAZIL, Pernambuco: Tamandaré, Restinga de Ariquindá, 30.X.2002, bot., S.S. Lira et al. 408 (IPA); idem, Restinga de Ariquindá, 09.IV.2003, fr., S.S. Lira 553 et al. (IPA).

17. *Myrcia loranthifolia* (DC.) G.P. Burton & E. Lucas (2020: 36).
Fig. 10A

Shrub or tree, 2–15 m tall, belongs to *Myrcia* sect. *Calyptranthes* (Lourenço et al. 2020), *Myrcia loranthifolia* is characterized by

monopodial branching, leaves 10–14.5 × 4–4.2 cm, ovate-elliptic, acute to acuminate apex. Floral buds that open into calyptra with yellowish or brownish trichomes and globose fruits.

Distribution, ecology and phenology: It is endemic to Brazil and distributed in almost all regions of the country, except in the North, in the Cerrado and Atlantic Forest domains (Santos et al. 2024). In Pernambuco, it is found in restinga, on the margin as well as in the interior of the Atlantic Forest in Ombrophilous Forest and Seasonal Forest, in the Mata do Bituri, Reserva Ecológica do Catimbau, Refúgio Ecológico Charles Darwin, Mata da Usina São José and Mata Dois Irmãos, at altitudes 30–1030 m (Fig. 5A). Flowering from October to May and fruiting from January to July and October.

Specimens examined: BRAZIL, Pernambuco: Brejo da Madre de Deus, Mata do Bituri, margem da estrada, 19.X.1999, fl., C.A.M Oliveira et al. 42 (SP); Buíque, Serra do Catimbau, 18.X.1994, bot., E. Menezes 20 (PEUFR); Buíque, Serra do Catimbau-Paraíso, 08.III.1996, fr., A. Laurênio et al 346 (PEUFR); Cabo de Santo Agostinho, área projeto



Figure 10. a. *Myrcia loranthifolia* (DC.) G. P. Burton & Lucas. Habit and floral bud in detail (J.R.R. Cantarelli et al. 217). b. *Myrcia mutabilis* (O. Berg) N. Silveira. Habit and floral bud in detail (L.M. Nascimento & A.G. da Silva 470). c. *Myrcia neoclusiifolia* (DC.) G. P. Burton & Lucas. Habit and floral bud in detail (N. B. Costa & Silva 149). d. *Myrcia neolucida* A.R. Lourenço & E. Lucas. Habit and floral bud in detail (A.C.P. Oliveira et al. 3226).

Suape, Ponta das Pedras Pretas, 11.I.1978, fr., *Andrade-Lima & Medeiros-Costa 161* (IPA); Goiana, km 50 da estrada Recife-Goiana, 28.XII.1965, bot., *Andrade-Lima 65-4346* (IPA); Igarassu, Refúgio Ecológico Charles Darwin, 08.V.1997, fl., *M. Moraes 21* (PEUFR); Recife, Dois Irmãos, Jardim Zoológico, 25.X.1967, fr., *I. Pontual 671* (PEUFR); Rio Formoso, Praia dos Carneiros, 04.I.1968, bot., *O.C. Lira 172* (IPA); São Vicente Férrer, Mata do estado; margem direita do açude, 19.V.1998, fr., *E.M.N. Ferraz & A.G. Bispo 300* (PEUFR); Tamandaré, Mata de Momocaba, 02.XII.1999, fl., *J.R.R. Cantarelli et al. 217* (PEUFR).

18. *Myrcia mutabilis* (O. Berg) N. Silveira (1985: 88). Fig. 10B

Shrub to tree, 2–6 m tall, inserted in *Myrcia* sect. *Sympodiomyrcia* (Santos et al. 2018). *Myrcia mutabilis* can be identified by sympodial branching, abaxial face of mature leaves with rusty indumentum and young leaves densely covered by rusty trichomes on both faces, base of leaf blade caudate, flower bud pubescent.

Distribution, ecology and phenology: Endemic to Brazil, distributed in the Northeast (Bahia, Pernambuco), Center-West (Distrito Federal, Goiás, Mato Grosso do Sul) and Southeast (Espírito Santo, Minas Gerais) regions, in the Caatinga, Cerrado, and Atlantic Forest domains (Santos et al. 2024). In Pernambuco it occurs in the interior and on the edge of the Atlantic rainforest, Mata do Bituri (Fig. 4A). Flowers in October, November and January, fruiting February, March and December.

Specimens examined: BRAZIL, Pernambuco: Brejo da Madre de Deus, Fazenda Bituri, 04 .II.1995, fr., *C.S. Zickel et al. 7* (PEUFR); idem, Bituri de Baixo, 16.III.1996, fr., *M. Oliveira et al. 254* (PEUFR); idem, Estrada para Bituri Grande, 26.XI.1998, fl., *L.M. Nascimento et al. 136* (PEUFR); idem, Trilha da mata, área sombreada, 19.I.1999, *L. M. Nascimento et al. 184* (PEUFR); idem, Mata do Malhada, 18.I.2000, bot., *C.A.M. Oliveira et al. 53* (PEUFR); idem, Mata do Bituri, 29.II.2000, fr., *A.G. Silva & L.M. Nascimento 253* (PEUFR); idem, Mata do Malhada, 21.XI.2000, fl., *L.M. Nascimento & A.G. da Silva 470* (PEUFR); Bonito, without date, fr., *A.G. Silva 392* (PEUFR).

19. *Myrcia neoclusiifolia* A.R. Lourenço & E. Lucas (2018: 78). Fig. 10C

Tree, 8–10 m tall, inserted in the *Myrcia* sect. *Calyptanthes* (Lourenço et al. 2020). *Myrcia neoclusiifolia* is recognized by sympodial branching, oblong, spatulate, orbicular leaves and rounded to obtuse apex.

Distribution, ecology and phenology: Endemic to Brazil, distributed in the Northeast (Bahia, Pernambuco), Center-West (Distrito Federal, Goiás, Mato Grosso do Sul) and Southeast (Espírito Santo, Minas Gerais) regions, in the Caatinga, Cerrado, and Atlantic Forest domains (Santos et al. 2024). In Pernambuco it is a little collected species, occurring in the Chapada do Araripe, in Caatinga vegetation (Fig. 4B). Flowering in July.

Specimens examined: BRAZIL, Pernambuco: Serrolândia, Chapada do Araripe com destino a Exu, 29.VI.1994, fl., *M.B. Costa e Silva 149* (PEUFR).

20. *Myrcia neolucida* A.R. Lourenço & E. Lucas (2018: 79). Fig. 10D

Tree, 3–4 m tall, belongs to *Myrcia* sect. *Calyptanthes* (Lourenço et al. 2020), *Myrcia neolucida* easily recognized by sympodial branch,

leaves 4.5–5.2 × 2.6–3.4 cm, elliptical and the branches, leaves, flowers and ovary glabrous or with few whitish trichomes, and also by the green coloration in the dried leaves and brownish-green buds.

Distribution, ecology and phenology: Distributed in North and South America (Venezuela, Bolivia, Colombia, Suriname, and French Guiana) (POWO 2024). In Brazil it occurs in all regions, in the Amazon, Cerrado, and Atlantic Forest domains (Santos et al. 2024). In Pernambuco it is found in high altitude wetlands in the Caatinga domain, in a priority area for conservation, Buíque/Vale do Ipojuca (Fig. 4A). Flowering and fruiting in February.

Specimens examined: BRAZIL, Pernambuco: Arcoverde, Serra das Varas, 21.II.2006, fr., *R. Pereira et al. 2613* (IPA); idem, Serra das Varas, 03.II.2014, bot., *A.C.P. Oliveira et al. 3226* (HVASF).

21. *Myrcia ovina* Proença & Landim (2014: 221). Fig. 11A

Belonging to section *Myrcia* sect. *Aguava* (Lima et al. 2018), *Myrcia ovina* is mainly identified by the presence of long, soft whitish indumentum on the abaxial side of the leaves, in addition to bracteoles that are larger than the flower buds. It shares leaf and flower shape characteristics with *Myrcia guianensis*, but differs by the characters cited under the comments of that species.

Distribution, ecology and phenology: It is endemic to Brazil, occurring in the Northeast region of Brazil for the states of Pernambuco and Sergipe in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco it is found in rocky outcrops of the highland wetlands (Fig. 2A).

Specimens examined: BRAZIL, Pernambuco: Bezerros, Parque Ecológico de Serra Negra, 12.VI.2009, fr., *B.S. Amorim 484 et al.* (UFP).

22. *Myrcia polyantha* DC. (1828: 252). Fig. 11B

Shrub to tree, 1.5–3 m tall, included in *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016), *Myrcia polyantha* is recognized by the shape of the elliptic to oval leaves with obtuse to rounded base, multiflorous panicles, fruits 5–7 × 5–9 mm. It is similar to *Myrcia decorticans*, the characters that differentiate the two being discussed under the entry of this species.

Distribution, ecology and phenology: It is endemic to Brazil, occurs in the Northeast region in the states of Alagoas, Bahia, Ceará, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe, for the domains of Caatinga, Cerrado and Atlantic Forest (Santos et al. 2024). In Pernambuco, it is found in the Atlantic Forest (Florestas Serranas), Restinga and Caatinga, both in preserved and anthropized areas, also associated with rocky outcrops (Fig. 3B). Flowering in two periods, October and November, July and August, and fruiting from January to April.

Specimens examined: BRAZIL. Pernambuco: Brejo da Madre de Deus, Mata do Malhada, 31.X.2000, fr., *L.M. Nascimento & A.G. da Silva 452* (HUEFS, PEUFR); Floresta, Reserva Biológica de Serra Negra, 29.XI.1996, fl/ fr., *L.M. Nascimento & D.S. Pimentel. 20* (PEUFR); Santa Cruz da Baixa Verde, Olho d'Água, Serra da Madeira, 8.VIII.2013, fl., *A. Laurênio 3260* (HESBRA); Jataúba, Fazenda Balame, 17.XI.1995, fl., *F.B.P. Mouro 316* (MAC); Tamandaré, beira da estrada, Mata da Pedra do Conde, 08.I.2010, fr., *B.S. Amorim & J.B. Oliveira 521* (UFP, NY); Triunfo, Sítio Laje, 12.II.2019, fr., *J.G.S. Alves et al. 101* (HESBRA); idem, 15.XI.2014, bot., *N.D.S. Brito & A. Laurênio 1* (HESBRA). Tupanatinga, 24.XI.2005, bot., *A. Bocage et al. 1045* (HUEFS).

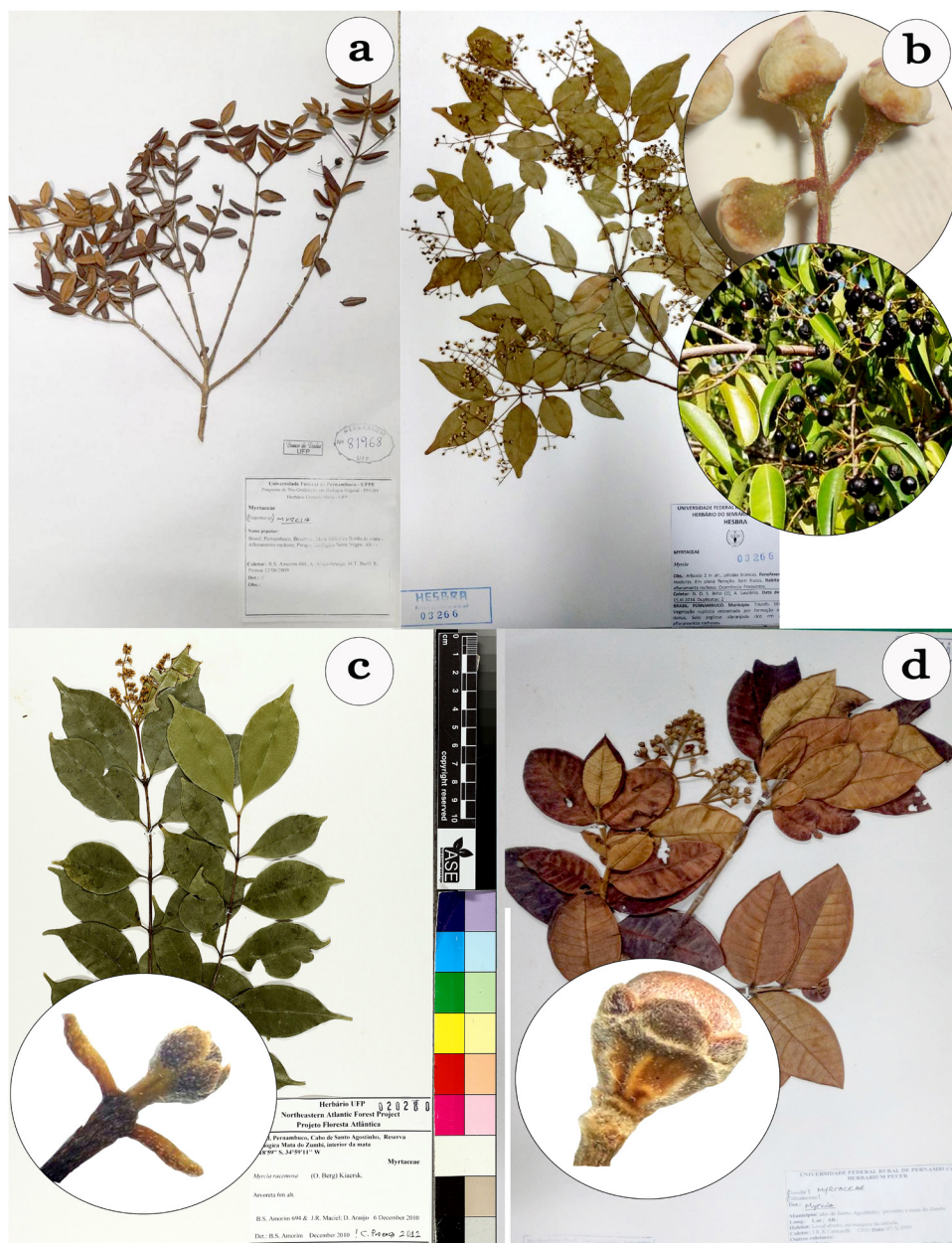


Figure 11. a. *Myrcia ovina* Proença & Landim. Habit (B.S. Amorim et al. 484). b. *Myrcia polyantha* DC. Habit, floral bud and fruit in detail (N.D.S. Brito & A. Laurênio 1). c. *Myrcia racemosa* (O.Berg) Kiaersk. Habit and floral bud in detail (B.S. Amorim et al. 694). d. *Myrcia rosangelae* NicLugh. Habit and floral bud in detail (J.R.R. Cantarelli 230).

23. *Myrcia racemosa* (O. Berg) Kiaersk. (1893: 72). Fig. 11C

Tree, 4–5 m tall, inserted in *Myrcia* sect. *Aulomyrcia* (Lucas et al. 2016), *Myrcia racemosa* is characterized by elliptic to oblong leaves, long acuminate to caudate apices, base of blade obtuse or rounded, fruits 5–7 × 5–9 mm, and whitish trichomes on the surface of leaves, inflorescences, buds, and young fruits.

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast (Alagoas, Bahia, Pernambuco, Sergipe), Southeast (Espírito Santo, Rio de Janeiro, São Paulo) and South (Paraná, Santa Catarina), in the Cerrado and Atlantic Forest domains (Santos et al. 2024). In Pernambuco, it occurs in Restinga, edge and interior of the Atlantic Forest, in the Reserva Biológica Mata do Zumbi, Usina São

José, Área de Proteção Ambiental de Guadalupe and Mata da Pedra do Conde (Fig. 2C). It flowers from December to March and July, fruiting in two periods from January to April, July and August.

Specimens examined: BRAZIL, Pernambuco: Barreiros, Mata da Gia, 03.XII.1999, fl., J.R.R. Cantarelli et al. 228 (PEUFR); Cabo de Santo Agostinho, Engenho Boa Vista, Mata do Zumbi, 18.I.1995, fr., D.R. Siqueira et al. 57 (PEUFR); idem, Reserva Mata do Zumbi, 6.XII.2010, fl., B.S. Amorim et al. 694 (UFP); Igarassu, Usina São José, Mata dos Macacos, 06.VI.2007, fr., J.S. Marques & N.A. Albuquerque 190 (IPA, BHCB); Rio Formoso, Mata do Ribeira, 27.II.2002, fr., S.S.Lira et al. 294 (PEUFR); São Vicente Férrer, Mata do Estado, 12.II.1999, bot., E.M.N. Ferraz et al. 612 (PEUFR); Tamandaré,

APA de Guadalupe, Mata da Gia, 03.XII.1999, fl., *A. Sacramento* 597 (PEUFR).

24. *Myrcia rosangelae* NicLugh. (2012: 19-23). Fig. 11D

Shrub, ca. 2 m tall, included in *Myrcia* sect. *Gomidesia* (Amorim et al. 2019). *Myrcia rosangelae* has oval sessile to subsessile leaves, expanded inflorescences with symmetrically distributed flowers, obovate flower buds, lanceolate bracts and deltoid bracteoles.

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast region in the states of Alagoas, Bahia, Pernambuco and Sergipe, it occurs in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco, it is found in an open site, at the margin of the Mata do Zumbi (Fig. 2B). Flowering in October.

Specimens examined: BRAZIL, Pernambuco: Cabo de Santo Agostinho, Next to Mata do Zumbi, 07.X.1999, bot., *J. R. R. Cantarelli* 203 (PEUFR).

25. *Myrcia splendens* (Sw.) DC. (1828: 244). Fig. 12A

Shrub or tree, 1–10 m tall, belongs to *Myrcia* sect. *Myrcia* (Lucas et al. 2011). *Myrcia splendens* shows great variety in leaf morphology, it has elliptic, ovate or lanceolate leaves, with central vein printed on the adaxial side, acuminate apex, long or short acuminate, flower buds obovoid to globose and ellipsoid fruit with densely or sparsely trichomes. It resembles *Myrcia sylvatica* in leaf blade shape and fruit form and is distinguished by the distichous opposite leaves, reflexed on the branches, grooved central vein and linear bracts.

Distribution, ecology and phenology: Distributed from Mexico, Caribbean Islands to Argentina (POWO 2024). In Brazil it occurs in all regions and phytogeographic domains (Santos et al. 2024). In Pernambuco, it has a wide distribution, being found in Atlantic Forest, Steppic Savanna, Caatinga and Cerrado ecotone of several Conservation Units, in elevations of 126–1100m (Fig. 5B). Flowering from January to July, October to December, and fruiting from February to July.

Specimens examined: BRAZIL, Pernambuco: Bezerros, Parque Municipal de Serra Negra, 12.IV.1995, fr., *M. Sales et al.* 581 (PEUFR); Brejo da Madre de Deus, Propriedade de Bituri, 16.X.1980, bot., *M.A. Maia Filho* 24 (IPA, RB); Buíque, Parque Nacional do Catimbau, 25.I.2011, fl., *M. Oliveira & C.F. Fonseca* 5428 (HVASF, HUEFS); Cabo de Santo Agostinho, Engenho Boa Vista, Mata do Zumbi, 13.I.1995, bot., *D.R. Siqueira & M.M. Buarque* 37 (PEUFR, RB); Camaragibe, Aldeia, 17.II.2013, bot., *J. E. L. Torres s.n. & W. B. Santos* (HST, HUEFS 203122); Caruaru, Brejo dos Cavalos, 07.XII.1988, bot., *M.L. Guedes et al.* 1670 (PEUFR); idem, Brejo dos Cavalos, 06.I.1999, fl., *J.A. Siqueira Filho & G.S. Baracho* 859 (HVASF); Floresta, Inajá, Reserva Biológica de Serra Negra, 09.III.1995, fl., *A.P.S. Gomes et al.* 06 (PEUFR); Iati, RPPN Fazenda Brejo, 29 de dezembro de 2009, bot., *M. Oliveira* 3743 (HVASF); Igarassu, Refúgio Ecológico Charles Darwin, borda da trilha da área 2, 23.I.1996, fl., *M.F.A. Lucena* 106 (PEUFR, MAC); Jaqueira, RPPN Frei Caneca, borda da mata, 31.I.2013, fl., *B.S. Amorim et al.* 1781 (UFP, MAC); Jataúba, Fazenda Balame, 26.VII.1995, fl., *F.B.P. Moura* 404 (MAC, HUEFS); Pesqueira, Serra do Ororubá, Mata da Fazenda São Francisco, 11.I.1995, fl., *M. Correa & M.B. Barroso* 397 (UFU, RB); Recife, Mata de Dois Irmãos, Açude do Prata, 28.XII.1960, fl., *S. Tavares* 561 (PEUFR); Rio Formoso, Rebio Saltinho, 26.IX.2002, bot., *A.C. Sevilha* 2634 (CEN); São Vicente Ferrer, Mata do Estado, 28.XII.1995, bot.,

M.C. Tschá et al. 473 (PEUFR); Sirinhaém, Usina Trapiche, Engenho Coelhas, Interior da mata, 21.XII.2010, bot., *B.S. Amorim et al.* 700 (UFP, ASE); Tacaratu, Distrito de Tacaratuzinho, Sítio dos Morcegos, 14.I.2009, fl., *J.G. Carvalho-Sobrinho* 1780 (HVASF).

26. *Myrcia springiana* (O. Berg) Kiaersk. (1893: 102). Fig. 12B

Shrub or tree, 2–6 m tall, inserted in *Myrcia* sect. *Gomidesia* (Amorim et al. 2019). *Myrcia springiana* is recognized by elliptic to oval, acuminate or acute apex, free calyx, obconic buds, rounded calyx lobes.

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast to the states of Alagoas, Bahia, Pernambuco, and Southeast to Espírito Santo and Minas Gerais, in the Cerrado and Atlantic Forest domains (Santos et al. 2024). In Pernambuco, it is found in the Atlantic Forest of Usina São José, RPPN Frei Caneca, Parque Estadual Dois Irmãos and the Jardim Botânico do Recife (Fig. 3A). Flowers in November and fruiting from February to April and July.

Specimens examined: BRAZIL, Pernambuco: Igarassu, Mata da Piedade, próximo a córrego d'água, 02.III. 2010, fr., *J.A.N. Souza et al.* 630 (UFP); Jaqueira, RPPN Frei Caneca /Ageró, 06.XI.2003, bot., *A. Viana et al.* 512 (UFP); idem, RPPN Frei Caneca, Mata do Monteiro, caminho para Pedra do Cruzeiro, 01.VII.2011, fr., *B.S. Amorim et al.* 969 (UFP); idem, RPPN Frei Caneca, Mata Quengo, 24.IV.2014, fr., *B.S. Amorim et al.* 1986 (UFP); Recife, Parque Estadual Dois Irmãos, 13.IV.2010, fr., *B.S. Amorim* 630 (UFP); Recife, Jardim Botânico do Recife, Borda da mata, próxima à entrada principal Floresta Atlântica, 24.IV.2014, fr., *B.S. Amorim & J.R. Maciel* 1985 (UFP); Sirinhaém, Usina Trapiche, Engenho Jaguaré, 15.II.2014, fr., *R. Karla et al.* 29 (IPA).

27. *Myrcia sylvatica* (G.Mey.) DC. (1828: 244). Fig. 12C

Shrub or tree, 1–15 m tall, inserted in *Myrcia* sect. *Myrcia* (Lucas et al. 2016). *Myrcia sylvatica* can be recognized by its ovate or lanceolate leaves, with acuminate-caudate apex, central venation sulcate adaxially, young leaves slightly reddish and pilose style the base, oboval flower buds, ellipsoid fruit. It is similar to *Myrcia splendens*, being differentiated by the characters mentioned in the description of this species.

Distribution, ecology and phenology: Distributed in Central (Costa Rica, Panama) and South America (French Guyana, Suriname, Bolivia, Venezuela, Peru, Colombia, and Brazil) (POWO 2024). In Brazil, it occurs in the North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima), Northeast (Alagoas, Bahia, Ceará, Paraíba, Pernambuco), Midwest (Mato Grosso), in the domains of Amazonia, Caatinga, Cerrado, Atlantic Forest (Santos et al. 2024). In Pernambuco, it can be found on the edge or in the interior of the Atlantic Forest and Caatinga, associated with rocky out crops between 60 and 1100 m altitude (Fig. 4B), being widely distributed in the Conservation Units of the state. Flowering from January to April and October to December, fruiting from January to July, and December.

Specimens examined: BRAZIL, Pernambuco: Barreiros, Mata da Gia, 03.XII. 1999, bot., *J.R.R. Cantarelli et al.* 239 (PEUFR); Bonito, 24.XI.1994, fl., *M.L. Soares et al.* 14 (PEUFR); Brejo Madre de Deus, Mata da Fazenda Oriente, 08.I.1990, fl., *D. Belo s.n.* (PEUFR 36140); Camutanga, Mata de Olho D'água, 07.III.2001, bot., *M.N. Rodrigues*

Myrcia of Pernambuco

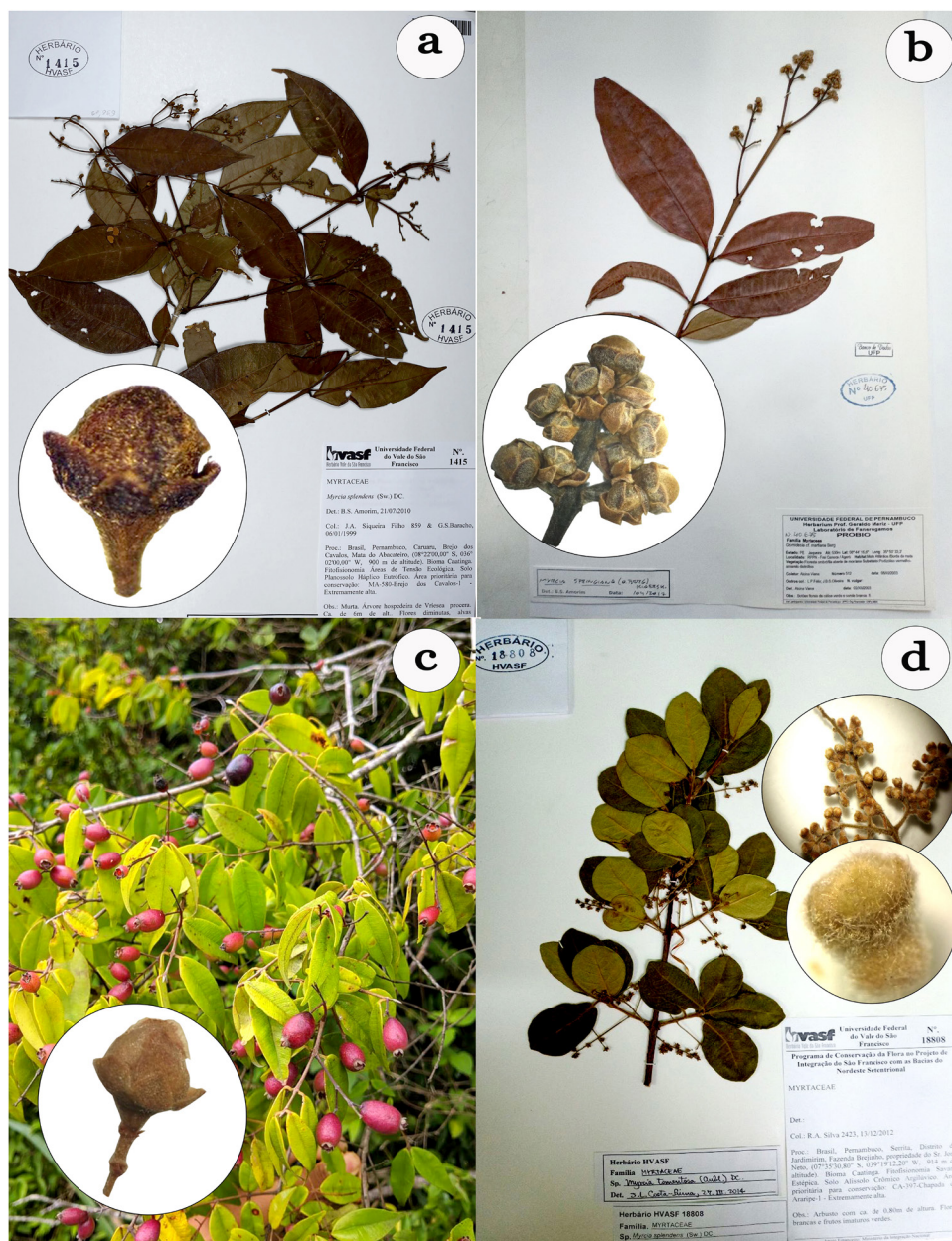


Figure 12. a. *Myrcia splendens* (Sw.) DC. Habit and floral bud in detail (J.A. Siqueira Filho & G.S. Baracho 859). b. *Myrcia springiana* Kiaersk. Habit and floral bud in detail (A. Viana et al. 512). c. *Myrcia sylvatica* DC. Photo at field of fruitful habit and floral bud (J.G.S. Alves 57). d. *Myrcia tomentosa* DC. Habit and floral bud in detail (R.A. Silva 2423).

1631 (MAC); Caruaru, Serra Brejo dos Cavalos, 07.XII.1988, bot., M.L. Guedes et al 1672 (PEUFR); Escada, Engenho Conceição, 30.VI.1967, fr., I. Pontual 561 (PEUFR, ESA); Garanhuns, Morro do Mangano, 06.I.1977, fl., I. Pontual 1342 (PEUFR, ESA); Goiana, Mata do Engenho Megaó, 16.VI.1998, fr., A. Laurênio et al. 1084 (PEUFR); Iati, RPPN Fazenda Brejo, Borda da mata, 29.XII.2009, bot., M. Oliveira 3744 (HVASF); Igarassu, Margem estrada para Itapessuma, 25.I.1959, fl., S. Tavares 476 (PEUFR); Inajá, Reserva Biológica de Serra Negra, 20.VII.1995, fr., E. Ferraz & E. Freire 266 (PEUFR, US); Itamaracá, Mata do Jaguaribe, 17.III.1998, bot., A. Laurênio et al. 883 (PEUFR); Itaquitinga, Mata de Cruzinha, Usina São José, 18 de dezembro de 2008, fl., J.A.N. Souza 312 (HVASF); Jaqueira, RPPN

Frei Caneca, Pedra do Cruzeiro, 04.I.2002, fl., J.A. Siqueira Filho 1205 (HVASF); Jaboatão dos Guararapes, Muribeca, aterro sanitário, 02.XI.2010, bot., A.M. Miranda & J. Ferraz 6250 (HST, UFRN); Lagoa dos Gatos, RPPN Pedra D'Anta, na margem da estrada, 18.XII.2010, bot., A.V. Melo Silva et al. 685 (UFP, NY); Maraial, Lagoa dos Gatos, Serra do Urubu, Perdra do Espelho, 20.IV.1994, fr., A.M. Miranda & L.P. Félix 1600 (PEUFR); Palmares, Sítio Retiro, 28.XII.1963, fl. F. Paiva 3157 (PEUFR); Pesqueira, Fazenda São Francisco, 27.VII.1995, fr., M. Correia & F. Moura 250 (PEUFR); Recife, Dois Irmãos, Horto de Dois irmãos, 27.I.1982, fl., A. Chiappeta et al. s.n. (PEUFR, ESA 006569); Rio Formoso, Engenho Terra d'água, 21.II.1995, bot., A.M. Miranda & L.P. Félix 2075 (HST, UFRN); Santa Cruz da Baixa Verde,

Olho d'Água, Serra da Madeira, 06.XII.2014, fr. *A. Laurênio* 3122 (HESBRA); São José da Coroa Grande, Engenho Morim, Mapa de Campina, 17.III.2010, fr., *B.S. Amorim et al.* 602 (UFP, RB); São Vicente Ferrer, Mata do Estado, borda da mata, 12.XI.1995, bot., *A. Laurênio et al.* 245 (PEUFR); Sirinhaém, Usina Trapiche, Engenho Coelhas, borda da mata, 21.XII. 2010, fl., *B.S. Amorim et al.* 705 (UFP, MAC); Tamandaré, APA de Guadalupe, Engenho Mamocaba, 02.XII.1999, fl., *A. Sacramento et al.* 577 (PEUFR); Tamandaré/Rio Formoso, Mata da Bulia, REBIO Saltinho, borda da mata, 29.V. 2009, fr., *B.S. Amorim & A. Alves-Araújo* 469 (UFP, MAC); Triunfo, beira da estrada, próximo ao Pico do Papagaio, 20.XI.2017, fr., *J.G.S. Alves* 57 (HESBRA); Triunfo, Sítio Retiro, 21.III.2018, fr., *J.G.S. Alves et al.* 86 (HESBRA).

28. *Myrcia tomentosa* (Aubl.) DC. (1828: 245). Fig. 12D

Shrub or tree, 1–8 m tall, included in *Myrcia* sect. *Tomentosae* (Lannoy et al. 2019). *Myrcia tomentosa* is characterized by the presence of tomentose trichomes on all parts of the plant, the leaves are membranaceous, elliptic, broad elliptic or obovate, with 7–9 pairs of conspicuous secondary veins, concentrated in spirals at the ends of the branches and sessile flower buds.

Distribution, ecology and phenology: Distributed in Panama, Trinidad and Tobago, French Guiana, Suriname, Venezuela, Bolivia, and Brazil (POWO 2024). In Brazil, it occurs in all regions of the country, in the domains of Amazonia, Caatinga, Cerrado, Atlantic Forest (Santos et al. 2024). In Pernambuco, it occurs in Atlantic Forest, Caatinga and Restinga, present in several Conservation Units of the State (Fig. 5A). Flowering in two periods: from January to April and from October to December, fruiting from January to April and December.

Specimens examined: BRAZIL, Pernambuco: Arcoverde, Serra das Varas, Mata da Jacú, 29.III.2006, fr., *M.B. Costa e Silva et al.* 2124 (IPA, HUEFS); Belo Jardim, Pedra do Caboclo, 11.I.2012, fr., *B.S. Amorim* 1364 (UFP, NY); Bonito, 21.IV.1994, fr., *A.M. Miranda & L.P. Félix* 1657 (PEUFR); idem, 24.XI.1994, fl., *M.L. Soares* 118 (PEUFR); Brejo Madre de Deus, idem, Mata do Bituri, 29.II.2000, fl., *A.G. da Silva & L.M. Nascimento* 252 (PEUFR); Buíque, Parque Nacional do Catimbu, 25.I.2011, fr., *M. Oliveira* 5419 (HVASF); Cabo de Santo Agostinho, Cabo, Área-projeto Suape, parte posterior (Estação C), 05.X.1977, fl., *Andrade-Lima & Medeiros-Costa* 27 (IPA, RB); Camocim de São Félix, Fazenda Nossa Sra. de Nazaré, 09.I.2012, bot., *B.S. Amorim et al.* 1339 (UFP, NY); Camutanga, 02.III.2001, fl., *M.N. Rodrigues* 1605 (MAC); Caruaru, Murici, Brejo dos Cavalos, Parque Ecológico Municipal Vasconcelos Sobrinho, 25.II.1994, fl., *M. Borges et al.* 10 (PEUFR); Garanhuns, Morro do Magano, Cerrado ao lado do Cruzeiro, 20.I.1972, fr., *without collector* (RBR, RB); Garanhuns, Morro do Magano, 06.I.1977, fr., *I. Pontual* 1341 (PEUFR, ESA); Goiana, RPPN Fazenda Tabatinga, 29.XI.2011, fl., *D. Cavalcanti et al.* 625 (UFP, NY); Igarassu, Mata da Usina São José/ Fragmento Zambana, 29.XI.2008, fl., *M.A.M. Silva* 96 (PEUFR); Itamaracá, trilha dos Holandeses, caminho para Vila Velha, 31.X. 2021, fl., *J.G.S. Alves & L. Lima* 140 (HESBRA); Lagoa dos Gatos, Chã de Panela, 21.IV.1994, fr., *A.M. Miranda et al.* 1657 (HST, HUEFS); Lagoa do Ouro, Reserva Biológica Federal da Pedra Talhada, 12.XI.2015, fl., *L. Nusbaumer* 4783 (G, MAC); Maraial, Serra do Urubu, 20.IV.1994, fr., *A.M. Miranda & L.P. Félix* 1564 (PEUFR); Recife, Mata de Dois Irmãos, 21.XI.1966, fl., *J. Soares s. n.* (PEUFR); Rio Formoso, Praia dos Carneiros, 04.I.1968, bot., *O.C. Lira* 68174

(IPA, RB); São Joaquim do Monte, Br. PE, limite Caruaru-Agrestina, inselberge Pedra do Guariba, 15.VII.2007, fl., *P. Gomes* 736 (HVASF); São Lourenço da Mata, Estação ecológica do Tapacurá, 13.III.1998, fr., *A. Laurênio & V. Santos* 844 (PEUFR); São Vicente Ferrer, Mata do Estado, 28.XII.1995, fr., *M.C. Tschá et al.* 463 (PEUFR, NY); Serrita, Distrito de Jardimirim, Fazenda Brejinho, propriedade do Sr. José Neto, 13.XII.2012, fl., *R.A. Silva* 2423 (HVASF); Tamandaré, Restinga, 22.II.1995 fr., *A.M. Miranda* 2102 (HST, INPA); Triunfo, Sítio Laje, 12.II.2019, fr., *J.G.S. Alves et al.* 99 (HESBRA).

29. *Myrcia verrucosa* Sobral (2006 [2007] : 77). Fig. 13A-B

Shrub or tree, 2–4 m tall, included in *Myrcia* sect. *Gomidesia* (Amorim et al. 2017). *Myrcia verrucosa* stands out among other *Myrcias* species occurring in the state by the falciform calyx lobes, (vs. rounded, acute, deltoid, ovate to broad triangular calyx lobes in the other *Myrcia* species).

Distribution, ecology and phenology: It is endemic to Brazil, distributed in the Northeast region to the states of Bahia, Pernambuco, Sergipe and Southeast to Espírito Santo, in the Atlantic Forest domain (Santos et al. 2024). In Pernambuco it occurs in the Atlantic Forest of the Estação Ecológica de Caetés and the Usina São José (Fig. 5A). Flowering in three periods (January, August and October) and fruiting in April and July.

Specimens examined: BRAZIL, Pernambuco: Cabo, Área Projeto Suape, Mata do Zumbi (estação B), 19.X.1977, bot., *Andrade-Lima & Medeiros-Costa* 36 (IPA, BHCB); idem, Engenho Boa vista, 11.VIII.1995, fr., *D.R. Siqueira & M.M. Buarque* 93 (PEUFR); idem, Engenho Boa Vista, trecho norte, 10.I.1996, bot., *D.R. Siqueira & M.M. Buarque* 130 (PEUFR); Igarassu, Usina São José, Engenho Cruzinha, Mata da Zambana, 19.VII.2008, fr., *A.C.B. Lins e Silva* 355 (IPA, UPGB); Paulista, Estação Ecológica de Caetés, coletado próximo a trilha, 02IV.2013, fr., *T.N.F. Guerra & M. Chagas* 228 (UFP, RB).

30. *Myrcia vittoriana* Kiaersk. (1893: 102). Fig. 13C-D

Shrub or tree, ca. 2.5–6 m tall, included in section *Myrcia* sect. *Gomidesia* (Amorim et al. 2017). *Myrcia vittoriana* is distinguished from the other species of the section by presenting inflorescence axis, hypanthium, flowers and fruits with farinaceous surface, conical fruit, orange immature and grayish mature. While the other species of *M.* sect. *Gomidesia* have inflorescence axis, hypanthium, flowers and fruits with smooth surface, pubescent to pubescent, globose to subglobose fruit. It can be confused with *Myrcia springiana* by the elliptic leaf blade, oval, rarely lanceolate and by the symmetrical flower distribution in the inflorescence.

Distribution, ecology and phenology: It is endemic to Brazil, occurring in the Northeast (Alagoas, Bahia, Pernambuco) and Southeast (Espírito Santos, Rio de Janeiro) to the Atlantic Forest domain (Santos et al. 2024). In Pernambuco, it occurs in the coastal area, in Parque Dois Irmãos and in Mata do Zumbi (Fig. 3A). Flowers in January and fruits in May.

Specimens examined: BRAZIL, Pernambuco: Cabo de Santo Agostinho, Mata do Zumbi, 10.I.1996, fl., *D.R. Siqueira et al.* 130 (PEUFR, RB); Recife, Mata de Dois Irmãos, 10.V.1993, fr., *L. Griz* 05 (UFP); Recife, 03.I.1990, fl., *M.L. Guedes s. n.* (UFP/RB); Recife, Mata de Dois Irmãos, 13.X.1967, fl., *A. Lima* 5080 (IPA).

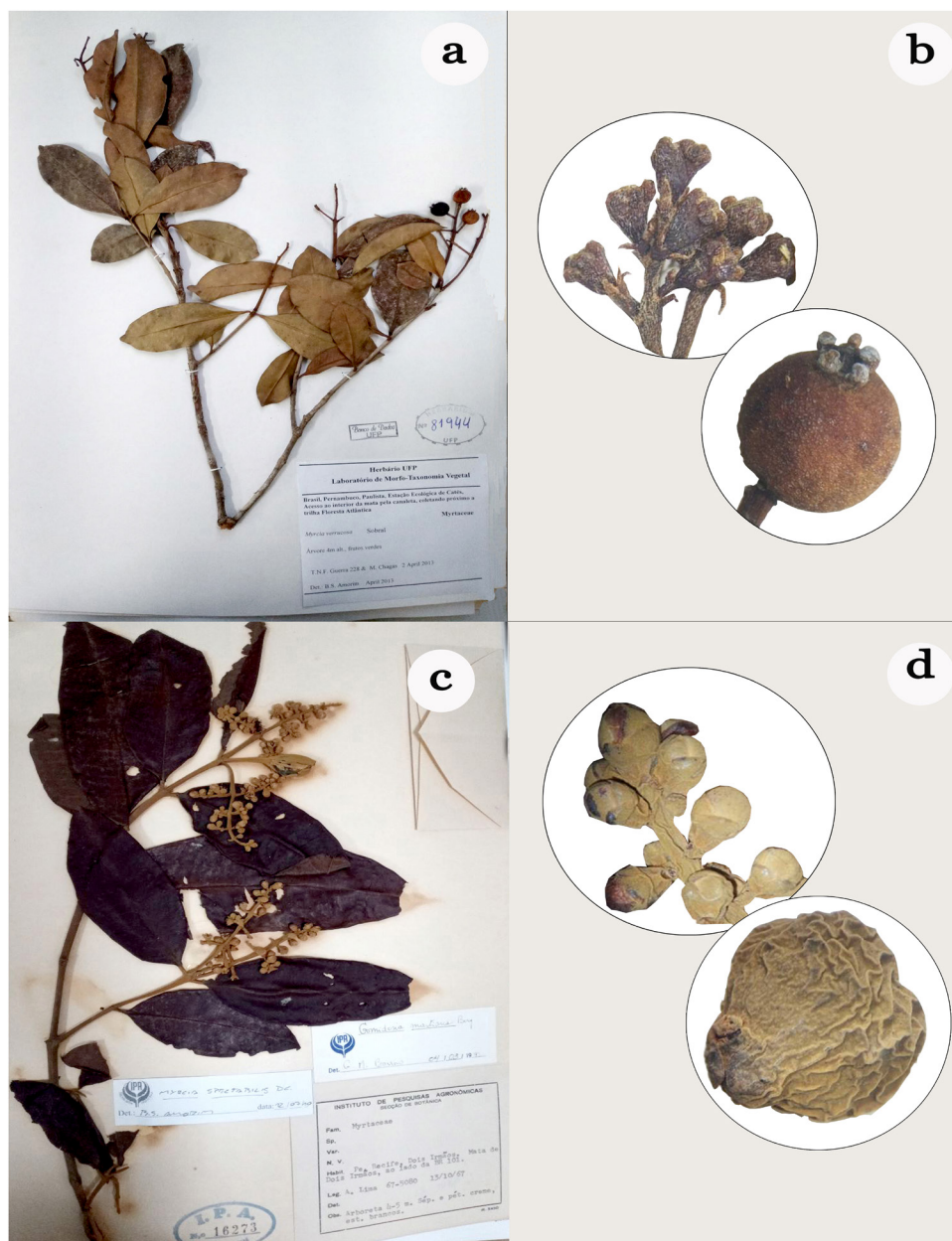


Figure 13. a-b. *Myrcia verrucosa* Sobral Habit, floral bud and fruit in detail (T.N. F. Guerra & M. Chagas 228). c-d. *Myrcia vittoriana* Kiaersk. Habit, floral bud and fruit in detail A. Lima 67-5080).

31. *Myrcia* sp.

The species presents unique morphological characteristics such as leathery, oboval or elliptical-oboval leaves, rare obtuse rounded apex, ovate to broad triangular calyx lobes, acute apex, densely covered with trichomes, which become it distinctive from the other species listed to Pernambuco.

We believe that the taxon is a new species, however, the material examined is an incomplete unicate, without the flowers, beyond this the label indicates only the municipality of Bonito and does not detail the exact local of collection, which makes it difficult to carry out new collections.

Specimens examined: BRAZIL, Pernambuco: Bonito, without date, fr., A.G. Silva 440 (PEURF);

Discussion

Few works of *Myrcia* were conducted for the Northeast of Brazil or to Pernambuco State. The most recent study is the Amorim (2021), who studied the genus for a transitional area of the Northeast of Brazil. However, the author focused her analysis on the Amazon domain in the state of Maranhão, and only one species was in common with our results: *Myrcia neoclusiifolia*.

Santos (2013) conducted a study of *Marlierea* (current synonym of *Myrcia*) also for Northeast, and mentioned the occurrence of three species of *Marlierea*: *M. tomentosa*, *M. pilodes* (Kiaersk.) and *M. neuwiediana* (O. Berg) Nied. that nowadays are recognized as: *Myrcia strigipes* Mart., *Myrcia mutabilis* and *Myrcia neuwiediana* (O. Berg)

E.Lucas & C.E.Wilson, respectively), differing in part of our results, since only *Myrcia mutabilis* was registered in our area of study. The other two species were not found in the herbarium cited by this author.

Amorim and Alves (2011, 2012) are studies restricted for the state of Pernambuco. Amorim and Alves (2011) to the Usina São José, in the municipality of Igarassu, where they cited eight species of *Myrcia* (*M. bergiana*, *M. guianensis*, *M. racemosa*, *M. spectabilis*, *M. splendens*, *M. sylvatica*, *M. tomentosa*, *M. verrucosa* and *Calyptanthes dardanoi* (current synonym for *Myrcia loranthifolia*). Corroborating our results, except *Myrcia spectabilis*, that we corrected the identification for *M. springiana*.

Afterwards, the same authors (2012) carried out a study for the state of Pernambuco and recorded the occurrence of 12 species of *Myrcia* adding to their previously work mentioned above: *M. densa*, *M. insularis*, *M. multiflora* and *M. tenuivenosa*, two for *Marliera* (*M. excoriata* and *M. tomentosa*) and for *Calyptanthes* and *Gomidesia* one species each: *C. dardanoi* and *G. blanchetiana*. Although Amorim and Alves (2012) have mentioned the occurrence of *Myrcia multiflora*, *Myrcia tenuivenosa* and *Marliera excoriata* to Pernambuco, we do not agree with these identifications. Instead, we believe that the correct identifications are *M. polyantha*, *M. amazonica* and *Myrcia arenaria*, respectively (species mentioned in our results). Our results contemplate these species related by Amorim and Alves (2012), and increase the number of species from 12 to 31 spp. Consequently, we update the richness, distribution and morphology of *Myrcia* for the state of Pernambuco.

Regarding *Myrcia arenaria*, it has already been recorded in vegetation of Restinga, Atlantic Forest, and dry forest of Caatinga domain (Santos et al. 2016; Melo et al. 2023). However, here this taxon has its first record for the humid forest of Caatinga, in the municipality of Brejo da Madre de Deus.

Our results bring many updates which will be useful for understanding the group and its identifications by taxonomists in the herbaria of Pernambuco. We also highlight the importance and necessity of more studies of *Myrcia* in the state, including a greater field collection that can reveal even more novelties.

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Author Contributions

André Laurênio de Melo: conceived the idea and structured the manuscript; contributed to the writing of the text, and the interpretation of the results.

Juliana Gleice dos S. Alves: wrote the manuscript.

Leidiana Lima dos Santos: helped in the identifications and revision of text.

Rafaela Alves Pereira-Silva: contributed to revision of the text and created the plate of photos.

Conflicts of Interest

We, the authors, declare that we have no conflicts of interests related to the publication of this manuscript.

Data Availability

URL of the dataset: <https://doi.org/10.48331/scielodata.JTAAKH>

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