TAXONOMY OF MELASTOMATACEAE JUSS. IN THE BRAZILIAN CERRADO: A SYSTEMATIC REVIEW OF THE LITERATURE (2012-2021)

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ABSTRACT: We present a systematic review of the current taxonomic knowledge of Melastomataceae in the Brazilian Cerrado, covering the period from 2012 to 2021. The review includes a historical approach to the studies carried out in this period, as well as the circumscriptions of the family, tribes and genera. Additionally, studies on new species, studies on the flora that represent the group, and its geographic distribution in the different phytophysiognomies of the Cerrado and Brazilian regions, along with reviews of genera, are also addressed. The objective of this work is to highlight the importance of taxonomic studies in the Brazilian Cerrado, to value existing knowledge, and to offer contributions on the potential of these researches, as well as future studies in areas that are still lacking. To carry out the systematic review, the search strategy was used with the descriptors: Melastomataceae (and) Cerrado (and) Brazil, in the databases of Periódico CAPES and Google Scholar. Initially, 5,904 publications were identified. After reading the title and abstract, 320 works that met the inclusion criteria were evaluated. In the second stage, the publications were read, and 155 were selected that aligned with the objectives of this study. Most studies focus on the description of new species, with the largest number of publications in the years 2016, 2018 and 2019, mainly in areas of rocky fields). A total of 76 municipalities were cited, distributed in 10 Brazilian states and the Federal District, with the largest number of taxonomic studies of Melastomataceae found in the states of Minas Gerais, Goiás and Bahia. Five journals stood out: Phytotaxa, Systematic Botany, Rodriguésia, Kew Bulletin and Brittonia. The Federal University of Uberlandia presented the largest number of publications of Course Completion Work and dissertations. Specialist researchers from the Federal University of Uberlândia, State University of Campinas, State University of Maringá, University of Brasília, State University of Feira de Santana, Federal University of Goiás and The New York Botanical Garden (USA) also stood out. The use of the free-walking methodology was observed instead of the fixed area plot allocation method. Based on this information, the relevance of this study is emphasized, as it addresses lesser-explored regions of the Cerrado in relation to the flora of Melastomataceae, contributing to a more comprehensive understanding of the diversity of this group in the ecosystem. This systematic literature mapping can contribute to the improvement of the group's regional data for the Cerrado.

Keywords: rocky fields, diversity, flora, literature review, systematics.

TAXONOMIA DE MELASTOMATACEAE JUSS. NO CERRADO BRASILEIRO: UMA REVISÃO SISTEMÁTICA DA LITERATURA (2012-2021)

RESUMO: Apresentamos uma revisão sistemática do conhecimento taxonômico atual de Melastomataceae no Cerrado brasileiro, abrangendo o período de 2012 a 2021. A revisão inclui uma abordagem histórica dos estudos desenvolvidos neste período, bem como as circunscrições da família, tribos e gêneros. Também são abordados os estudos das espécies novas, estudos de flora que tenham representatividade do grupo e sua distribuição geográfica nas diferentes fitofisionomias do Cerrado e regiões brasileiras, além de revisões de gêneros. O objetivo desse trabalho é evidenciar a importância dos estudos taxonômicos no Cerrado brasileiro, valorizando o conhecimento existente e oferecendo contribuições sobre o potencial dessas pesquisas, assim como de estudos futuros em áreas ainda carentes. Para realizar a revisão sistemática, utilizou-se a estratégia de busca com os descritores: Melastomataceae (and) Cerrado (and) Brasil, nas bases de dados do Periódico CAPES e no Google Acadêmico. Inicialmente, identificaram-se 5.904 publicações. Após leitura do título e resumo, foram avaliados 320 trabalhos que atendiam aos critérios de inclusão. Na segunda etapa, realizou-se a leitura das publicações e selecionaram-se 155 que estavam alinhadas com os objetivos do trabalho. A maioria dos estudos está voltada para descrição de espécies novas, com o maior número de publicações nos anos de 2016, 2018 e 2019, principalmente em áreas de campo rupestre. Foram citados 76 municípios, distribuídos em 10 estados brasileiros e no Distrito Federal, sendo que a maior quantidade de estudos taxonômicos

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de Melastomataceae foi encontrada nos estados de Minas Gerais, Goiás e Bahia. Cinco periódicos se destacaram: Phytotaxa, Systematic Botany, Rodriguésia, Kew Bulletin e Brittonia. A Universidade Federal de Uberlandia apresentou o maior número de publicações de Trabalho de Conclusão de Curso e dissertações. Pesquisadores especialistas da Universidade Federal de Uberlândia, Universidade Estadual de Campinas, Universidade Estadual de Maringá, Universidade de Brasília, Universidade Estadual de Feira de Santana, Universidade Federal de Goiás e The New York Botanical Garden (EUA) também se destacaram. Foi observada a utilização da metodologia de caminhamento livre em detrimento do método de alocação de parcelas de área fixa. Com base nestas informações, ressalta-se a relevância deste estudo por abordar regiões do Cerrado pouco exploradas em relação à flora de Melastomataceae, contribuindo para uma compreensão mais abrangente da diversidade desse grupo no ecossistema. Este mapeamento sistemático da literatura pode contribuir para o aprimoramento dos dados regionais do grupo para o Cerrado.

Palavras-chave: campo rupestre, diversidade, flora, revisão bibliográfica, sistemática.

INTRODUCTION

Melastomataceae Juss. has a pantropical distribution, with ca. of 173 genera and approximately 5,858 species (GOLDENBERG *et al.*, 2022) In Brazil, Melastomataceae is very well represented, especially in the Cerrado, Amazonian and Atlantic Forest biomes (GOLDENBERG *et al*., 2012, 2023), and their individuals are found in all states of the federation and phytogeographic domains, with 69 genera and 1,437 species (BAUMGRATZ *et al*., 2006; GOLDENBERG *et al*., 2022).

Melastomataceae is one of the families with significant ornamental importance, being represented mainly by species of the genera *Tibouchina* Aubl. and *Pleroma* D.Don, due to its showy flowers, widely used for the ornamentation in parks, neighborhoods and squares. In addition, the fruits of some *Miconia* Ruiz & Pav. species serve as food for birds and bats (ALBUQUERQUE *et al*., 2013; MELO & PASTORE, 2021). The adaptive strategies of Melastomataceae species, such as efficient seed production, facilitated dispersal of propagules, phenotypic plasticity, effective and satisfactory germination, and a faster growth rate, enhance ecological processes in natural regeneration, survival capacity, and dispersion of these organisms. These strategies are particularly important in the restoration of disturbed habitats (LORENZI, 1992; ALBUQUERQUE *et al*., 2013; RODRIGUES, 2019; VALÉRIO, 2020).

Melastomataceae is the sixth most important family in the Cerrado, with 512 species (Goldenberg et al., 2023). The Cerrado is the second largest Brazilian biome second in extent only to the Amazon (DIAS & MIZIARA, 2021; ICMBio, 2023). Biome is a biological division that reflects the ecological and functional character of the vegetation, strongly influenced by the climate and with characteristics specific to each region and a set of animal and plant species (ALLABY, 2010). The Cerrado, with an area of 2.04 million km2, is the most biodiverse savanna in the world. It is located in the central portion of Brazil, encompassing the states of Goiás, part of Minas Gerais, São Paulo, Mato Grosso, Mato Grosso do Sul, Bahia, Pará, Tocantins, Rondônia, Piauí, Maranhão, and the Federal District (KLINK & MACHADO, 2005; SANO *et al*., 2008; SANTOS *et al*., 2014).

Knowledge of species taxonomy and further studies on their classification and biodiversity facilitate accurate identification and, consequently, access to information essential for understanding the natural world (JUDD *et al*., 2009). Although the formation of scholars focusing on Melastomataceae seems to have increased the number of studies on the family, these researches still do not fully reflect the taxonomic diversity in the country. For instance, there are constant publications of new species in various areas and biomes, indicating gaps that still need to be filled, especially in unexplored areas or regions with few specialists (BICUDO, 2004; GOLDENBERG *et al*., 2012; JUSTINO *et al.*, 2021; VERSIANE & ROMERO, 2022; FONTELAS *et al*., 2022, GALI *et al*., 2022, PACIFICO & ALMEDA, 2022).

In this context, a retrospective analysis of taxonomic studies on Melastomataceae in the Brazilian Cerrado from 2012 to 2021 is presented. The aim is to identify the advancements in the understanding of the group's taxonomy and explore the prospects for acquiring new data. Additionally, the phytophysiognomies, Conservation Units, and regions of the Brazilian Cerrado that have received the most attention in these studies will be highlighted. Therefore, the objective of this chapter is to offer a comprehensive perspective on the significance of taxonomic research in the Brazilian Cerrado, emphasizing the existing scientific contributions and underscoring the potential of these studies. Furthermore, it emphasizes the need for future investigations in underexplored areas to expand our knowledge of Melastomataceae diversity.

MATERIALS AND METHODS

This is an integrative literature review with a descriptive and quantitative approach. This review indicates the thematic direction and its development over time, highlighting its application in the emergence of new works, while also pointing out gaps in knowledge (Broome, 2006).

The review was conducted in several stages, following the method proposed by Souza et al. (2010). These steps are as follows: (1) identification of the problem and formulation of a question that guides the searches in the databases; (2) definition of inclusion and exclusion criteria, as well as data collection; (3) identification of the selected studies; (4) categorization, interpretation of results and analysis; and finally (5) review with a critical analysis of the acquired knowledge.

DEFINITION OF THE GUIDING QUESTION AND KEYWORDS

This research was guided by the following question: "What was the scientific production from 2012 to 2021, whose theme relates to research on the Melastomataceae family in the Brazilian Cerrado, in a taxonomic context?" In the early part of the last decade, the Federal government launched two important calls for proposals: Edital 52/2010 (PROTAX Program), which aimed at the training of Human Resources in Taxonomy, seeking to address the serious lack of taxonomists in the country, while Edital 56/2010 (Reflora Program) aimed to promote the rescue and availability of information, for Brazil and the world, regarding samples of the Brazilian flora collected until the 20th century by foreign missions and deposited at the Royal Botanic Garden of Kew and the National Museum of Natural History in Paris (see https://www.gov.br/cnpq/pt-br/acesso-a-informacao/acoes-e-programas/programas/reflora).
The studies on the family during this time period, as well as the need for knowledge in underexplored areas, made the group promising for this systematic review, considering the significance of Melastomataceae in the different phytophysiognomies of the Cerrado (see AGUIAR, 2012; GOLDENBERG *et al*., 2015; JUSTINO *et al*., 2016; VERSIANE *et al.*, 2016; PACÍFICO & FIDANZA, 2018; ROMERO *et al*., 2018; DINIZ & SILVA, 2020; MACHADO & ROMERO, 2020; ROCHA *et al.*, 2020; BRITO, 2022; LAURIANO & ROMERO, 2022; LOURENÇO, 2022). Therefore, the following keywords and Boolean operators were used: Melastomataceae; (and) Cerrado (and) Brazil.

DATA COLLECTION

This study is an integrative bibliographic review of scientific articles found in the journal CAPES (https://www.periodicos.capes.gov.br/), which includes Web of Science, PubMed and Lilacs (Latin American and Caribbean Literature in Health Sciences), among others, and in Google Scholar (https://scholar.google.com.br/?hl=pt), whose theme is Taxonomy of Melastomataceae in the Brazilian Cerrado. The literature search was conducted from September 2021 to March 2023. Next, the titles and abstracts of the bibliographic productions were read, following the inclusion and exclusion criteria, which allowed a more in-depth understanding of the theme and selection of relevant studies. Given the ease of search and the fact that most studies were available in public access repositories, all forms of publication, including articles, theses, dissertations and course conclusion papers, were considered in this review.

EXCLUSION AND INCLUSION CRITERIA

Initially, the scientific productions used in this research were selected according to inclusion and exclusion criteria. Studies that did not fit the taxonomic area, duplicates and those that did not address the guiding question were excluded. The following characteristics were used as exclusion criteria for the articles of this systematic review: (I) articles related to plant anatomy; (II) articles on reproductive biology; (III) abstracts published in congresses and/or conferences; (IV) incomplete articles that did not present text, authors or/and full title, (V) articles and works that referred to regions outside Brazil, (VI) works related to biomes other than the Cerrado. As inclusion criteria, the articles needed to meet the following requirements: (I) studies of general flora with inclusion of at least 10 (ten) species of the study group; (II) nomenclatural changes; (III) description of new species; (IV) taxonomic review of genera; (V) floristic listings containing Melastomataceae species present in the Cerrado; (VI) taxonomic treatment of the family or lower hierarchical groups, such as tribes and genera, and (VII) articles written in English and/or Portuguese.

Publications that did not indicate Conservation Units directly linked to a biome were selected when they dealt with studies and/or floristic listings of species with distribution in the Cerrado or review of genera. We also considered studies that addressed taxonomic and/or nomenclatural notes, lectotypifications, or phylogeny, as these studies have a broad scope, given that many species mentioned in these articles have wide distribution across different biomes of Brazil.

EXTRACTING DATA FROM DOCUMENTS

The data extracted from the selected studies included information such as the names of the journals, the authors, the geographical distribution, the phytophysiognomies of occurrence, the number of species and the type of methodology mentioned in the articles. These data were tabulated in Microsoft Excel spreadsheets. Thus, through these studies, we seek to highlight the importance of taxonomic studies of Melastomataceae in the Brazilian Cerrado over the last decade. In the final stage, all articles were fully read, resulting in the final number of articles used in this review. The selected works encompass articles published in scientific journals, theses, dissertations, and course completion works, with a focus on Melastomataceae. From these sources, the following information was extracted:

(i) Methodology used to evaluate the flora of Melastomataceae;
(ii) Cerrado region evaluated;
(iii) Nationality and affiliation of the first authors;
(iv) Type of most published taxonomic work from 2012 to 2021;
(v) Conservation Unit studied, when applicable;
(vi) Periodicals and their respective Qualis.

RESULTS AND DISCUSSION

The results and discussion of the systematic review are divided into three sections of the analysis. The first section presents a brief history of the establishment and classification of the family Melastomataceae. The second section presents the morphological characteristics of Melastomataceae, as described by Brazilian specialists in the group. The third section offers an overview of the number of articles, theses, dissertations and course conclusion papers related

to the theme, as well as the journals and experts that publish on the subject in the period 2012-2021. In this section, data compiled in the form of tables and figures are also presented, accompanied by their discussion. This dataset is called Scientometrics.

TAXONOMIC HISTORY OF MELASTOMATACEAE

In 1789, Antoine Laurent de Jussieu described the family Melastomataceae in the work *Genera Plantarum*, as "Melastomae" (see w3Tropicos.org, 2023). Etymologically Melastomataceae derives from the genus Melastoma L., which in Greek means "melas" (black) and "stoma" (mouth), composing the expression "black mouth". This denomination refers to the common characteristic of the blackened fruits of some species that can stain the mouth of those who ingest them (Rennó, 1963).

De Candole (1828) organized the family into the tribes Lavoisiereae, Rhexieae, Osbeckieae and Miconieae. The genera were assigned to these tribes based on morphological characters, such as dehiscence of the anthers, type of fruit (berries or capsules), seed morphology, position of the ovary (superperous or inferous) and presence or absence of trichomes at the apex of the ovary. Several series published by Naudin (1849-1853) provide brief descriptions of various genera and some species of the family. Naudin (1849-1853) grouped the genera and species of Melastomataceae into five subfamilies – Melastomatoideae (with the four tribes Microlicieae, Lasiandreae, "Pyramidales" and Miconieae), Astronioideae, Kibessioideae, Memecyloideae and Mouririoideae (not divided into tribes), based on the type of placentation and shape and number of seeds

Triana (1872) presented a general classification for the family, in which several genera have already been relocated in the various tribes, with three subfamilies: Melastomatoideae (eleven tribes), Memecyloideae (two tribes) and Astronioideae (one tribe). The recognition of new tribes was based mainly on the combination of characters, such as the morphology of the stamens, presence or absence of pedoconnective, type of fruit and shape of the seed.

The monograph of Cogniaux (1883-1888), in the work entitled *Flora brasiliensis*, represents the most complete study of the Melastomataceae in Brazil, with descriptions of tribes, sections, genera, species, identification key for taxa, as well as illustrative plates. Even today, this monumental work subsidizes several taxonomic and floristic studies (GOLDENBERG *et al.*, 2012).

Melastomataceae has a long classification history and is currently divided into the subfamilies Kibessioideae Krasser, with the tribe Pternandreae Gilg., and its only genus, *Pternandra* W. Jack, Melastomatoideae (Ser. ex DC.) with 21 tribes (Astronieae Triana; Bertolonieae Triana; Cyphostyleae Gleason; Dinophoreae Penneys & Veranso-Libalah; Dissochaeteae Triana; Eriocnemeae Penneys & Almeda; Feliciadamieae Jacq. - Fél. former Penneys; Henrietteeae Penneys; Lavoisiereae DC.; Lithobieae Penneys & Almeda; Marcetieae M.J.R. Rocha, P.J.F. Guim. & Michelang.; Melastomateae Bartl.; Merianieae Triana; Miconieae DC.; Pyramieae Naudin; Pyxidantheae Griseb.; Rhexieae DC.; Sonerileae Triana; Rupestreeae Penneys & R.Goldenb.; Stanmarkieae Penneys & Almeda; Trioleneae Bacci) and Olisbeoideae Burnett, which is not currently divided into tribes (Goldenberg et al., 2022).

CHARACTERISTICS OF MELASTOMATACEAE

Melastomataceae Juss., Gen. Pl. 328. 1789.

Trees, shrubs, subshrubs, lianas or herbs. Branches, leaves, hypanthus, glabrous sepals or covered by trichomes of varying types. Opposite leaves, rarely alternate, verticillate or rosulated, without stipules, petiolate or sessile, whole margin or not, acrodromous ribs, rarely parallel, domatias present or not. Flowers isolated or in inflorescences of various types; Flowers (3-)4-6(-10); hypanthus smooth, leaning or winged, campanulated or not, glabrous or with trichomes of various kinds; sepals of varying shapes and lengths; actinomorphic corolla, with white, pink, lilac, purple, yellow, red or bicoloured petals, free; isomorphic, subisomorphic or dimorphous stamens, sometimes with staminodes; fillets glabrous or with trichomes; pedoconnective prolonged or not below the teak, presence of ventral and/or dorsal appendage; anthers with prolonged or non-prolonged thecae, linear, subulate, oblong, ovoid, obcuneated, sickle-shaped, straight or dorsally arched, rostrad or not, tetrasporangiate (often bisporangiate at the time of anthesis) or polysporangiate; superperous ovary, semi-inferous or inferous, glabrous or provided with scales or trichomes; stylus straight, curved, or sigmoidal, glabrous or with trichomes. Fruit capsule or berry. Seeds of varied shapes with smooth, foveolate or papillous forehead (Figure 1).

Figure 1. *Melastomataceae species* - **A.** *Cambessedesia glaziovii* **Cogn. ex A. B. Martins; B;** *Cambessedesia regnelliana* **Cogn.; C:** *Fritzschia cordifolia* **R. Romero, D. Nunes & J. R. Rocha; D:** *Miconia angelana* **R. Romero & R. Goldenb; E:** *Miconia ciliata* **(Rich.) DC.; F:** *Miconia pepericarpa* **DC.; G:** *Microlicia chrysoglandulosa* **R. Romero, Versiane, Fontelas & D. O. Diniz-Neres; H:** *Microlicia inquinans* **Naudin; I.** *Microlicia stenodonoides* **D. O. Diniz-Neres & M. J. Silva; J.** *Pleroma gertii* **P. J. F. Guim & Michelang, K.;** *Pleroma angustifolium* **(Naudin) Triana; L.** *Pterolepis repanda* **(DC.) Triana. Source: A-F; H, J, K (R. Romero); G e I (D. O. Diniz).**

SCIENTOMETRICS

We verified a total of 134 papers in the CAPES Journal and 5,770 in Google Scholar. After screening, 155 papers were selected, cataloged and analyzed. The other studies were excluded from the analysis because they did not meet the pre-established eligibility criteria. Table 1 shows the general search data, including the preliminary results and the number of publications found.

Table 1. Selection process of publications relevant to the systematic review of the literature on the theme "Taxonomy of Melastomataceae in the Brazilian Cerrado". n= number of publications found.

1 – Identification	→ Filter - Melastomataceae (and) Cerrado (and) Brazil (Ano 2012 a 2021) CAPES Journals (n=134) Google Scholar (n= 5,770) Total: 5,904	
2 – Screening	→ Works found and removal of duplicates (n=320)	
3 – Eligibility	→ Eligibility analysis through the established inclusion and exclusion criteria	
4 - Included	→ Studies included in the analysis Qualitative (n=155)	→ Production of spreadsheets and charts - Results

Most of the studies are related to studies developed exclusively in the Cerrado (57%), followed by different phytophysiognomies of the Cerrado in transition with other biomes, such as the Atlantic Forest or Caatinga (43%). There is a nomenclatural diversity of the phytophysiognomies of the Cerrado evidenced by RIBEIRO & WALTER (1998), such as the cerrado *sensu stricto.* (*cerrado denso*, *cerrado típico*, *cerrado ralo*, *cerrado rupestre*), open grassland, rocky field, *cerradão*, ciliary forest, gallery forest, dry forest, *parque de cerrado*, *veredas*, *campo sujo* and palm forest. The occurrence of several phytophysiognomies in the Cerrado is associated with cyclical events and regional variations specific to each environment, which involve physical, chemical, topographic and geomorphological aspects (IBGE, 2004). In the scope of this systematic review, the studies were analyzed, above all, in the following phytophysiognomies of the Cerrado: rocky grassland (28%), followed by cerrado *sensu stricto.* (*cerrado denso*, *cerrado típico*, open grassland and rocky field) (21%), *campo sujo* (13%), open grassland (12%) and gallery forest (8%), among others (see Figure 2).

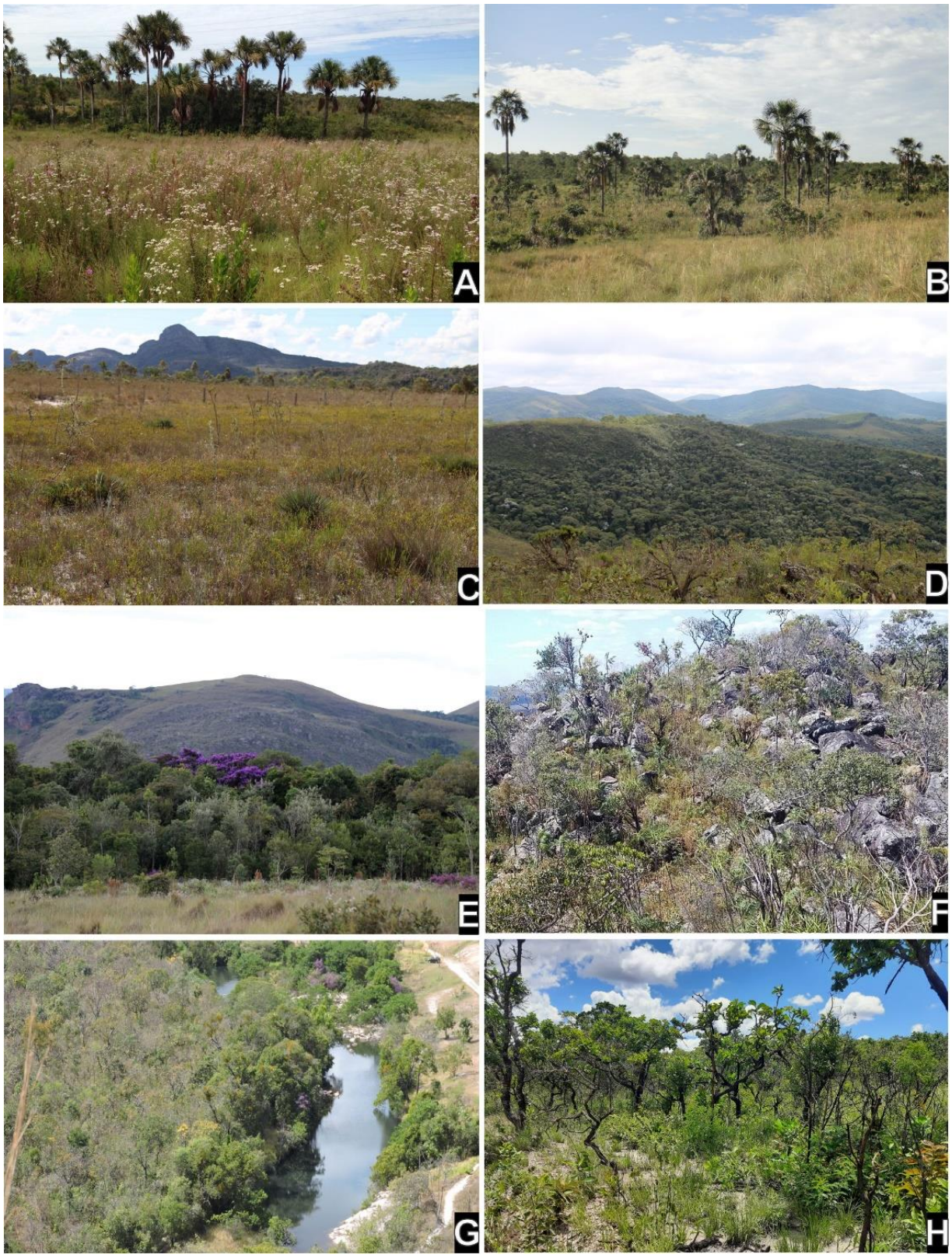

Figure 2. Phytophysiognomies of the Cerrado biome - A and B: open grassland associated with the pathway, Clube Caça e Pesca Itororó, Uberlândia; C: open grassland in stony sandy soil; rocky field in the background, Diamantina, Minas Gerais; D: Enclave of forest in the Serra de Ouro Branco, Minas Gerais; E: semideciduous forest and rocky grassland in the background, Serra de Ouro Branco, Minas Gerais; F: rocky cerrado, Chapada dos Veadeiros, Goiás; G: ciliary forest, Chapada dos Veadeiros, Goiás, and H: *cerrado típico*, Serra Dourada Biological Reserve, Goiás. Photos: A-E (R. Romero); F-H: (D.O. Diniz).

It is important to highlight that the Melastomataceae family is poorly represented in some of these phytophysiognomies of the Cerrado, which highlights the need to expand these studies in preferred environments for the group, such as the rocky field (Figure 3). In the publications evaluated, a total of 76 municipalities in 10 Brazilian states and the Federal District were mentioned. The largest number of studies on the taxonomy of Melastomataceae was found in Minas Gerais (26%), followed by Goiás (16%) and Bahia (11%). The other states ranged from 1% to 6% (Table 3.).

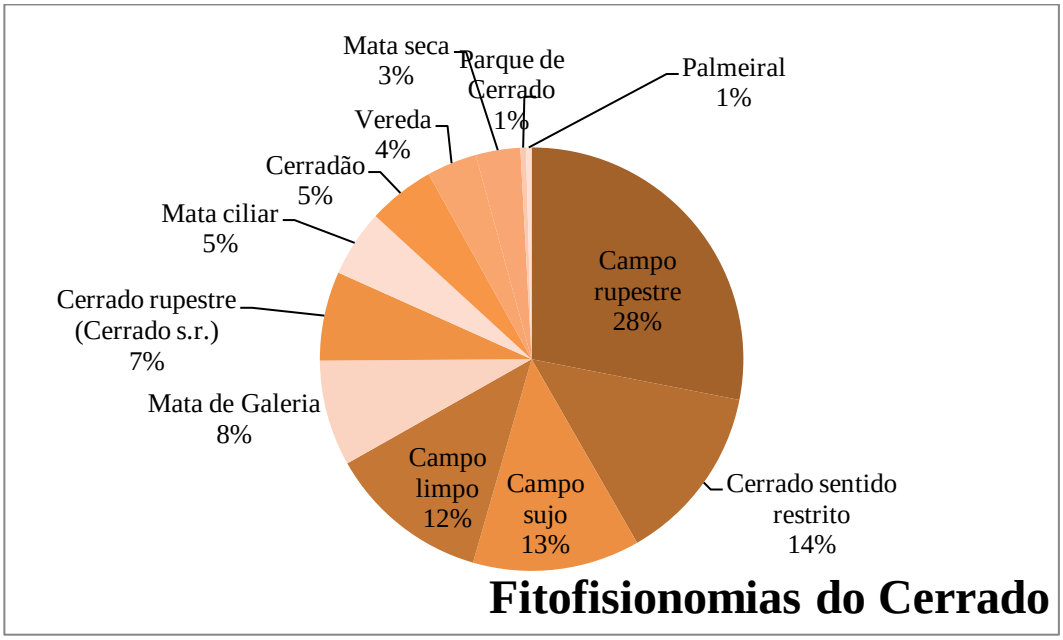

Figure 3. Distribution of studies in the different phytophysiognomies of the Cerrado.

The states of Minas Gerais, Goiás and Bahia together represented 53% of the sampled sites, especially Serra do Cipó, Biribiri State Park, Serra do Cabral and Serra do Espinhaço in Minas Gerais, Chapada dos Veadeiros in Goiás, and Chapada Diamantina and Serra Geral de Licínio de Almeida (SGLA) in Bahia (see table 2). Additionally, there are studies that do not mention a specific federal state, especially those related to phylogeny, genus review and taxonomic notes with nomenclatural changes (24%). Although the Cerrado is a significant center of diversity, only 8.3% of its areas are protected, with 2.85% corresponding to areas of full protection and 5.36% to areas of sustainable use, including Private Natural Heritage Reserves (RPPNs) (0.07%) (WWF BRASIL, 2019; MMA, 2023). It is important to emphasize that not all environments studied in this review are protected by law, either partially or entirely, as Conservation Units (see table 2).

Table 2. List of areas analyzed, by state, with taxonomic approaches of Melastomataceae in the period 2012 -2021. *Protected areas (ICMBio, 2023); n= number of studies.

STATES/AREAS STUDIED	TOTAL STUDIES
BAHIA (n=15)	
Chapada Diamantina (*Parque Nacional da Chapada da Diamantina)	9
Serra Geral de Licínio de Almeida	3
*Serra do Barbado	2

Serra dos Frios	1
GOIÁS (n=16)	
*Parque Estadual da Chapada dos Veadeiros	10
Serra dos Pireneus (*Parque Estadual da Serra dos Pireneus)	2
*Parque Estadual da Serra Dourada	2
*Reserva de Desenvolvimento Sustentável Legado Verdes do Cerrado	1
*Reserva Natural da Serra do Tombador	1
MARANHÃO (n=2)	
*Área de Proteção Ambiental do Inhamum Caxias	1
*Parque Estadual do Mirador	1
MATO GROSSO (n=2)	
Serra Ricardo Franco	1
Serra do Roncador	1
MATO GROSSO DO SUL (n=1)	
*Parque Natural Municipal do Pombo	1
MINAS GERAIS (n=52)	
Serra do Cipó (*Parque Estadual da Serra do Cipó)	12
Serra do Espinhaço (*Reserva da Biosfera da Serra do Espinhaço)	7
Serra do Cabral (*Parque Estadual Serra do Cabral)	6
*Parque Estadual do Biribiri	3
*Parque Estadual do Rio Preto	2
Clube Caça e Pesca Itororó (*Reserva Particular de Patrimônio Natural)	2
Serra da Bota	2
Serra da Canastra (*Parque Nacional da Serra da Canastra)	2
Furnas	1
Serra do Brucutú	1
Lagoa Santa	1
Serra do Itacolomi (*Parque Estadual do Itacolomi)	1
*Parque Natural Municipal da Cachoeira das Andorinhas	1
Reserva Patrimônio Natural Santuário do Caraça	1
Serra da Mantiqueira (*Área de Proteção Ambiental da Serra da Mantiqueira)	1
Serra de Ouro Branco (*Parque Estadual Serra do Ouro Branco)	1
Serras da Bocaina e de Carrancas	1
Serra Negra	1
Serra do Rola Moça	1
Serra do Gandarela	1
Serra do Curral	1
Serra Nova	1
Serra de Grão Mogol (*Parque Estadual de Grão Mogol)	1
PARANÁ (n=2)	
*Parque Estadual do Guartelá	2
SÃO PAULO (n=6)	
*Estação Ecológica de Itapeva	2
Fazenda Pedra Vermelha	2
*Parque Estadual do Juquery	1
Vale do Ribeira	1

TOCANTINS (n=1)	
Serra de Natividade (*Monumento Natural Serra de Natividade)	1
DISTRITO FEDERAL (n=7)	
Embrapa Cerrados	2
*Estação Ecológica de Águas Emendadas	2
*Parque Nacional de Brasília	1
*Reserva biológica Rebio	1
*Reserva Ecológica do IBGE - Recor	1

Goiás is among the Brazilian states that are completely inserted in the Cerrado biome (TISOTT & SCHMIDT, 2021). The state has been constantly affected by the advance of agricultural production, resulting in the loss of its native areas (DUTRA & SOUZA, 2017). According to TISOTT & SCHMIDT (2021), the states of Goiás and Mato Grosso do Sul require greater attention due to the low levels of natural vegetation remnants. In turn, Minas Gerais has 56% of its territory covered by the Cerrado and also faces an intense suppression of its vegetation cover due to various economic exploitation activities (IBGE, 2004; Borges et al., 2019). In general, the majority of the analyzed studies consist of publications on new species (28%), followed by publications on the flora of Melastomataceae (26%), general flora (19%) (mentioning at least ten species), and phylogenetic studies (10%). There was a limited number of taxonomic approach publications in the states of Tocantins, Maranhão, Piauí, Mato Grosso, and Mato Grosso do Sul, where Melastomataceae species and the Cerrado biome occur (GOLDENBERG *et al*., 2022) (see Figure 4 and Table 3).

Table 3. List of publications by state in the period 2012-2021. N/A*= studies that make no mention of a specific state.

States	Studies	References
Bahia	18	Aguiar, 2012; Freitas et al., 2012; Pataro et al., 2013; Goldenberg et al., 2015; Fagundes & Santos, 2016; Freitas & Van Der Berg, 2016; Freitas et al., 2016; Meirelles et al., 2016; Freitas, 2017; Pataro et al., 2017; Almeda & Pacífico, 2018; Jesus, 2018; Jesus et al. 2018; Pacifico & Almeda, 2018; Romero & Woodgyer, 2018; Silva et al., 2019; Pacifico & Almeda, 2020; Pacífico et al., 2021
Goiás	26	Santos et al., 2012; Machado, 2013; Resende et al., 2013; Mews, 2014; Oliveira, 2014; Versiane, 2014; Oliveira et al., 2015; Diniz-Neres, 2016; Meirelles et al., 2016; Oliveira et al., 2016; Versiane et al., 2016; Diniz-Neres & Silva, 2017; Romero et al., 2017; Diniz & Silva, 2018; Diniz-Neres & Silva, 2018; Nunes et al., 2018; Pacífico et al., 2019; Romero et al., 2019; Santos, 2019; Diniz & Silva, 2020; Ferreira-Alves & Romero, 2020; Fontelas & Romero, 2020; Machado & Romero 2020; Ferreira et al., 2021; Fontelas, 2021; Romero & Valentim, 2021
Maranhão	3	Conceição & Rodrigues, 2014; Silva et al., 2016; Velozo & Lima, 2021
Mato Grosso	3	Maracahipes et al., 2012; Oliveira et al., 2015; Versiane et al., 2020
Mato Grosso do Sul	4	Moreira, 2015; Bueno et al., 2018; Neto, 2018; Romero et al., 2018
Minas Gerais	43	Rezende, 2012; Araújo, 2013; Fidanza et al., 2013; Teixeira & Lemos Filho, 2013; Rezende et al., 2014; Meireles et al., 2014; Romero & Castro, 2014; Romero & Versiane, 2014; Oliveira et al., 2014; Pacífico & Fidanza, 2015; Romero, Silva & Simão, 2015; Araújo & Romero, 2016; Bacci et al., 2016; Casella, 2016; Justino et al., 2016; Romero & Versiane, 2016; Pacífico & Fidanza, 2017; Pacifico et al., 2017;

		Rezende et al., 2017; Romero & Rocha 2017; Almeda & Pacifico, 2018; Hemsing, 2018; Pacifico & Almeda, 2018; Pacífico & Fidanza, 2018a, Pacífico & Fidanza, 2018b; Pacifico et al., 2018; Brito, 2019; Moreira, 2019; Nunes et al., 2019; Pacifico et al., 2019; Paranhos, 2019; Romero et al., 2019; Almeda & Fidanza, 2020; Lauriano, 2020; Pacifico et al., 2020; Rocha et al., 2020; Bertolini, 2021; Pacifico et al., 2021a; Pacífico et al., 2021b; Romero & Versiane, 2021; Romero et al., 2021a; Romero et al., 2021b; Romero & Valentim, 2021
Paraná	6	Meyer & Goldenberg, 2012; Maia & Goldenberg, 2014; Goldenberg et al., 2015; Silva et al., 2015; Goldenberg et al., 2016; Maia & Goldenberg, 2019
Piauí	1	Meirelles et al., 2016
São Paulo	8	Cielo-filho et al, 2012; Souza et al., 2012; Baitello et al., 2013; Sousa, 2014; Cavassan & Weiser, 2015; Sousa & Lombardi, 2016; Mendonça, 2018; Maia & Goldenberg, 2019
Tocantins	2	Reginato, 2014; Oliveira et al., 2015
Distrito Federal	10	Silva & Felfili, 2012; Albuquerque et al, 2013; Fernandes, 2013; Melo, 2013; Carvalho, 2015; Giotto, 2015; Horstmann, 2015; Oliveira et al., 2015; Fontelas, 2017; Gomes, 2018
N/A*	40	Goldenberg et al., 2012a; Goldenberg et al., 2012b; kriebel, 2012; Caddah, 2013; Michelangeli et al., 2013; Romero, 2013a; Romero, 2013b; Gamba & Almeda, 2014; Reginato, 2014; Romero & Versiane, 2014; Silva et al., 2014; Meirelles, 2015; Lima, 2016; Meyer, 2016; Michelangeli et al., 2016; Reginato, 2016; Reginato & Michelangeli, 2016; Rocha et al., 2016; Lima et al., 2017; Martins & Almeda, 2017; Oliveira, 2017; Oliveira et al., 2017; Rocha et al., 2017; Rocha et al., 2018; Silva, 2018; Alves, 2019; Braga, 2019; Brito, 2019; Brito et al., 2019; Bochorny et al., 2019; Colli-Silva et al., 2019; Guimarães et al., 2019; Michelangi et al., 2019; Caddah et al., 2020; Michelangeli et al., 2020; Penneys, et al., 2020; Augustim, 2021; BFG, 2021; Sartor, 2021; Versiane et al., 2021

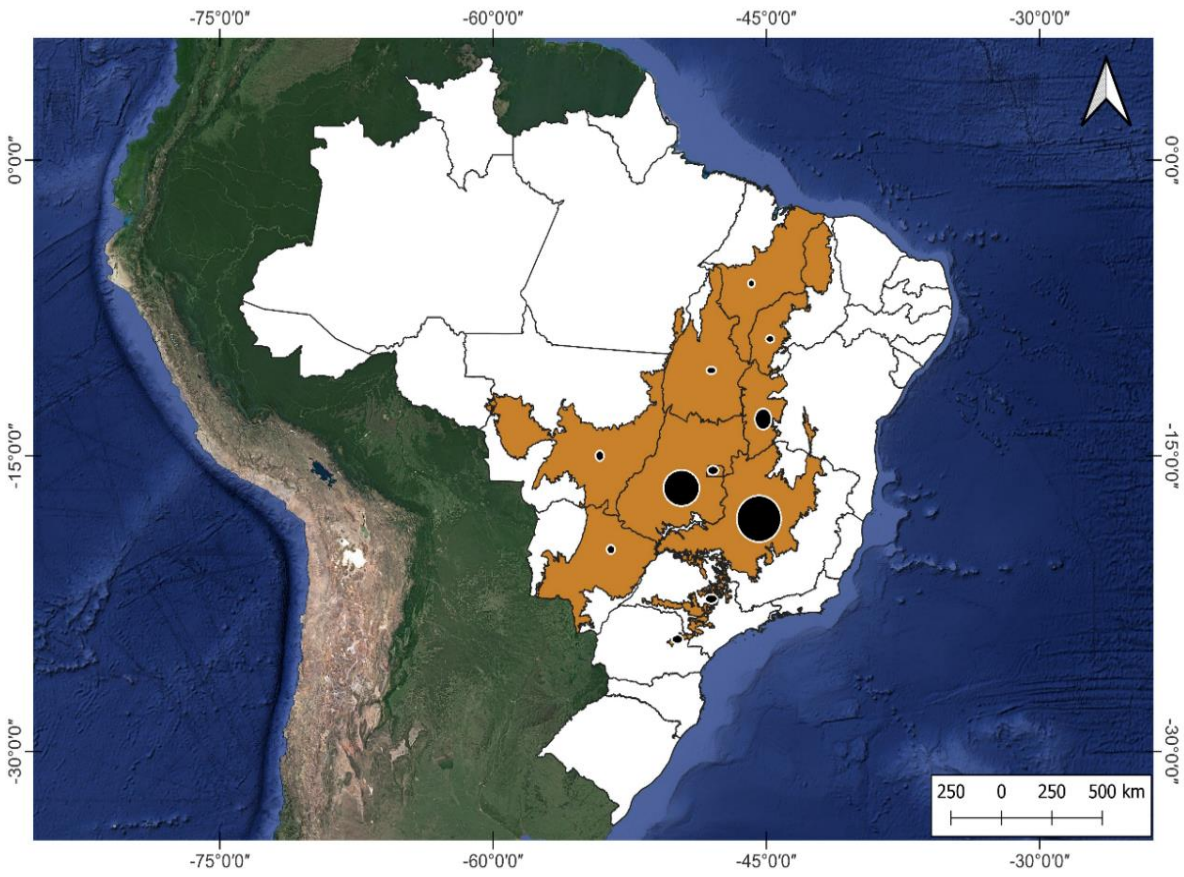

Figure 4. Map of Brazil with the extent of the Cerrado biome in orange (according to IBGE, 2005). The sizes of the black circles represent, schematically, the magnitudes relative to the amount of studies carried out in this biome.

The years 2016, 2018 and 2019 gather the largest number of publications, highlighting the importance and continuity of these studies, especially in areas of the Cerrado with few studies (Table). The increase in the number of publications on the Cerrado in this period was also observed by TAVARES & SOUSA (2022), whose study focused on a bibliometric survey of the Cerrado landscape, with the majority of the productions concentrated in the fields of Ecology, Environmental Sciences and Biodiversity Conservation. In summary, the increase in the number of publications with Melastomataceae taxonomy approaches may be correlated with the growth of publications on the Cerrado in the same period. This is possibly related to current environmental issues, with an approach and concern for the use, management and conservation of the Cerrado biome (Tavares & Sousa, 2022). KNEUBIL & SILVA (2020), in their bibliometric analysis, verified that the scientific production on the Cerrado is on the rise, with particular prominence in the last decade, indicating a growing trend in studies on this topic (see Figure 5).

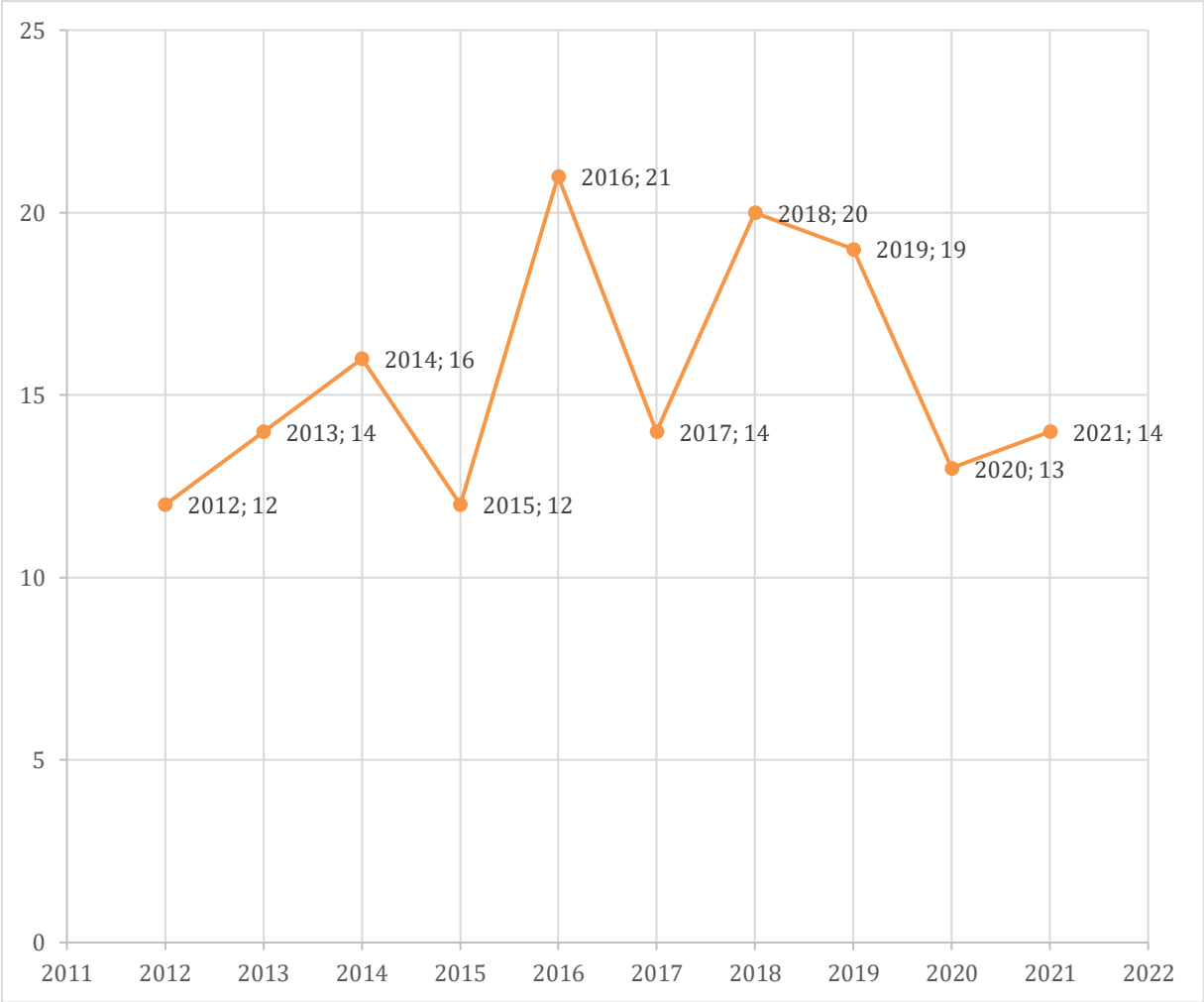

Figure 5. Quantitative studies on the taxonomy of Melastomataceae in the Brazilian Cerrado from 2012 to 2021.

Table 4. Number and type of studies on the taxonomy of Melastomataceae in the Brazilian Cerrado from 2012 to 2021.

Type of study	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Taxonomic novelty	2	2	4	4	3	5	9	6	6	5	45
Melastomataceae flora	5	3	4	3	9	4	4	2	4	3	41
General flora	4	5	4	4	3	2	4	2		2	30
Phylogeny		1	1		3	1	1	3	2	4	16
Taxonomic notes with nomenclatural changes		2	2				1	3	1		9
Genus review and phylogeny	1	1	1	1	2						6
Genus review	1				1	1	1	1			4
Typification						1		1			2
New occurrence record								1			1
Overall total	**12**	**14**	**16**	**12**	**21**	**14**	**20**	**19**	**13**	**14**	**155**

The Brazilian Cerrado is a hotspot that has undergone fragmentation due to soil erosion, extinction of several species, invasion of exotic species, water pollution, ecosystem degradation, changes in the fire regime and imbalances in the carbon cycle, resulting in significant environmental damage (OVERBECK *et al*., 2015; STRASSBURG *et al*., 2017; REIS *et al*., 2022).

The diversity of plant species, especially those restricted to regions with high levels of endemism, can easily disappear if their ecosystems experience increased anthropogenic pressure (KLINK & MACHADO, 2005; STRASSBURG *et al*., 2017; DAMASCUS *et al*., 2018). Although the Cerrado is a fire-adapted biome, the use of fires to stimulate the regeneration of pastures and open up new agricultural lands has led to nutrient loss and soil compression and erosion (SANTOS *et a*l., 2014; DURIGAN & RATTER, 2016; ROCK & BIRTH, 2021).

According to estimates, the Cerrado has 12,378 species of angiosperms, of which 4,663 (37.6%) are endemic to this biome (Flora do Brasil, 2023), which demonstrates its high diversity. In this review, based on the sum of each publication, 1,439 species were cited in flora surveys of the group. SOBRAL & STEHMANN (2009) showed that between the beginning of 1990 and the end of 2006, 2,875 new species of angiosperms were identified, ranging from weeds to trees, 1,194 in the Atlantic Forest, 966 in the Cerrado and 582 in the Amazon. This represents an average of 169 new species descriptions per year, or approximately one new species described every other day (1990-2006), which taxonomists consider a surprising rate (SOBRAL & STEHMANN, 2009). Unfortunately, amid the increasing rates of conversion of natural environments into anthropic ones, a large part of this unique diversity of the Cerrado is being lost (ICMBio, 2023).

Regarding the discovery and publication of new species, the genus *Microlicia* D.Don stands out with 86% of the published species. In a recent molecular study, VERSIANE *et al.* (2021), expanded the circumscription of *Microlicia and included the genera* Chaetostoma DC., *Lavoisiera* DC., *Stenodon* Naudin and *Trembleya* DC. in *Microlicia.* This study represented an advance in the knowledge of the phylogeny of the tribe Lavoisiereae DC. (formerly recognized as Microlicieae) and a better understanding in the circumscription *of Microlicia*, the most diverse genus of the tribe with approximately 250 species (VERSIANE *et al*., 2021). The delimitation of *Microlicia* species has been a major challenge due to the high degree of morphological variation of the genus, and in the past, there has been difficulty in recognizing the species as new (ROMERO & WOODGYER, 2014; VERSIANE *et al*., 2021; FONTELAS *et al.*, 2022). This review analyzed the publications of 59 new *species of Microlicia, eight species of Trembleya* (currently in Microlicia, see VERSIANE *et al*., 2021), four *species of Tibouchina*, three species of Fritzschia, *two species of Miconia*, and one species of the genera *Chaetostoma (currently in* Microlicia, see VERSIANE *et al*., 2021), *Pleroma* and *Poteranthera* in Cerrado areas in the last 10 years. *Leandra* Raddi, *Miconia* Ruiz & Pav., *Microlicia and* Tibouchina *are complex and* abundant genera in the Brazilian Cerrado, and are naturally the most studied and have provided the training of specialists in these groups (GOLDENBERG *et al*., 2012; GOLDENBERG *et al.*, 2022).

In addition to the significant increase in the number of new species, there have also been important advances in the classification of the family, mainly related to tribal compositions (see MICHELANGELI *et al.*, 2016; ROCHA *et al.*, 2018; BOCHORNY *et al*., 2019; GUIMARAES *et al*., 2019; MICHELANGELI *et al.*, 2019; PENNEYS *et al.*, 2020), as well as advances in the review of genera [e.g., *Poteranthera* Pong. (KRIEBEL, 2012); *Leandra* Raddi sect. *Leandra* REGINATO (2016); *Adelobotrys* DC. and *Graffenrieda* DC. (LIMA, 2016); *Lavoisiera* DC. (MARTINS & ALMEDA, 2017); *Fritzschia* Cham. (SILVA, 2018) and *Henriettea* DC. (BRITO, 2019)].

In the last ten years there have also been advances in the knowledge of the phylogeny of important groups of Melastomataceae occurring in the Brazilian Cerrado (see GOLDENBERG *et al*, 2012; CADDAH, 2013; MICHELANGELI *et al.,* 2013; GAMBA & ALMEDA, 2014; REGINATO, 2014; MEIRELLES, 2015; MEYER, 2016; MICHELANGELI *et al*., 2016; REGINATO, 2016; REGINATO & MICHELANGELI, 2016; ROCHA *et al*., 2016; ROCHA *et al.* 2017; ROCHA *et al.*, 2018; BRAGA, 2019; BOCHORNY *et al.,* 2019; GUIMARAES *et al.,* 2019; MICHELANGELI *et al*., 2020; PENNEYS *et al.,* 2020; AUGUSTIN, 2021; PACIFIC *et al*., 2021; SARTOR, 2021; VERSIANE *et al.,* 2021). Most genera of Melastomataceae have had their tribal circumscription confirmed by DNA analysis and morphological characters (GOLDENBERG *et al.,* 2022).

The characterization of botanical group lineages, through molecular and morphological analyses, allows a better understanding of the evolutionary relationships between tribes, genera and species (JUDD, 2009; AMORIM *et al*., 2021; SEBASTIANI *et al.*, 2022). Some changes have been incorporated into the monographs, such as the proposed new genus *Rupestrea* R.Goldenb., Almeda & Michelang. (GOLDENBERG *et al*., 2015), the segregation of *Tibouchina* Aubl. in *Chaetogastra* DC., *Pleroma* D.Don and *Tibouchina* Aubl. (GUIMARÃES *et al.*, 2019), the synonymizations of *Behuria* Cham. and *Dolichoura* Brade under *Huberia* DC. (BOCHORNY *et al.*, 2019) and *Clidemia D.Don*, Conostegia *D.Don*, Leandra *Raddi*, Ossaea *DC. , Pleiochiton* Naudin ex A.Gray and *Totoca* Aubl. under *Miconia* Ruiz & Pav. (MICHELANGELI *et al.*, 2016, 2019). During the time period of this research, a new occurrence of the genus *Fritzschia* Cham. was recorded for the state of Bahia (SILVA *et al.*, 2019), taxonomic notes with nomenclatural changes were made, as well as typifications of Melastomataceae species (e.g. ROMERO, 2013; ROMERO & VERSIANE, 2014; SILVA *et al*., 2014; LIMA *et al*., 2017; ALMEDA & PACIFIC, 2018; ALVES, 2019; BRITO *et al*., 2019; MAIA & GOLDENBERG, 2019; MICHELANGELI *et al.*, 2019; MOREIRA, 2019; CADDAD *et al*., 2020; ROMERO *et al.*, 2022).

The economic potential of Melastomataceae has been explored in recent years due to its ornamental importance (ALBUQUERQUE *et al*., 2013; ROCHA *et al*., 2020; DEWALT *et al.*, 2022). In addition, species that serve as food for birds and bats, and possess adaptive strategies essential for the survival of these organisms, may be viable alternatives in the restoration of disturbed habitats (LORENZI, 1992; ALBUQUERQUE *et al*., 2013; VALERIO, 2020; MELO & PASTORE, 2021).

Regarding the journals that published on the topic, the results of this review highlighted the journals Phytotaxa, Systematic Botany, Rodriguésia, Kew Bulletin and Brittonia. The fact that these journals have a high impact factor reinforces the relevance of the study. It was observed that a greater number of publications related to the theme of this study comes from Undergraduate Final Projects and dissertations from the Federal University of Uberlândia. When analyzing the first author of each work, there was an emphasis on expert researchers from the Federal University of Uberlândia (MG), State University of Campinas (SP), State University of Maringá (PR), University of Brasília (DF), State University of Feira de Santana (BA), Federal University of Goiás (GO) and The New York Botanical Garden (USA). It is important to note that several articles have been published in collaboration with authors from different institutions (see

Figure **6.**).

This result confirms the information of KNEUBIL & SILVA (2020), where the Federal University of Uberlândia, Federal University of Goiás, State University of Campinas and University of Brasília are among the 15 Higher Education Institutions and research institutes with the largest number of publications on the Cerrado biome in the period of 1960 and 2019. Furthermore, regarding the first authors of each publication, the results indicated that 90% of

the publications are by experts affiliated with Brazilian institutions, 9% are from North American institutions (e.g., The New York Botanical Garden, California Academy of Sciences, University of North Carolina Wilmington and New York University), and only 1% come from Spain, represented by a single publication (e.g. Universidad Autónoma de Madrid). This information corroborates Tavares & Sousa (2022), who point out that more than 80% of the studies that analyze the landscape of the Brazilian Cerrado are conducted in Brazil, and that the country receives the highest number of citations in the articles. KNEUBIL & SILVA (2020), in a review of publications in the Cerrado, also highlight a greater concentration of scientific production in Brazil.

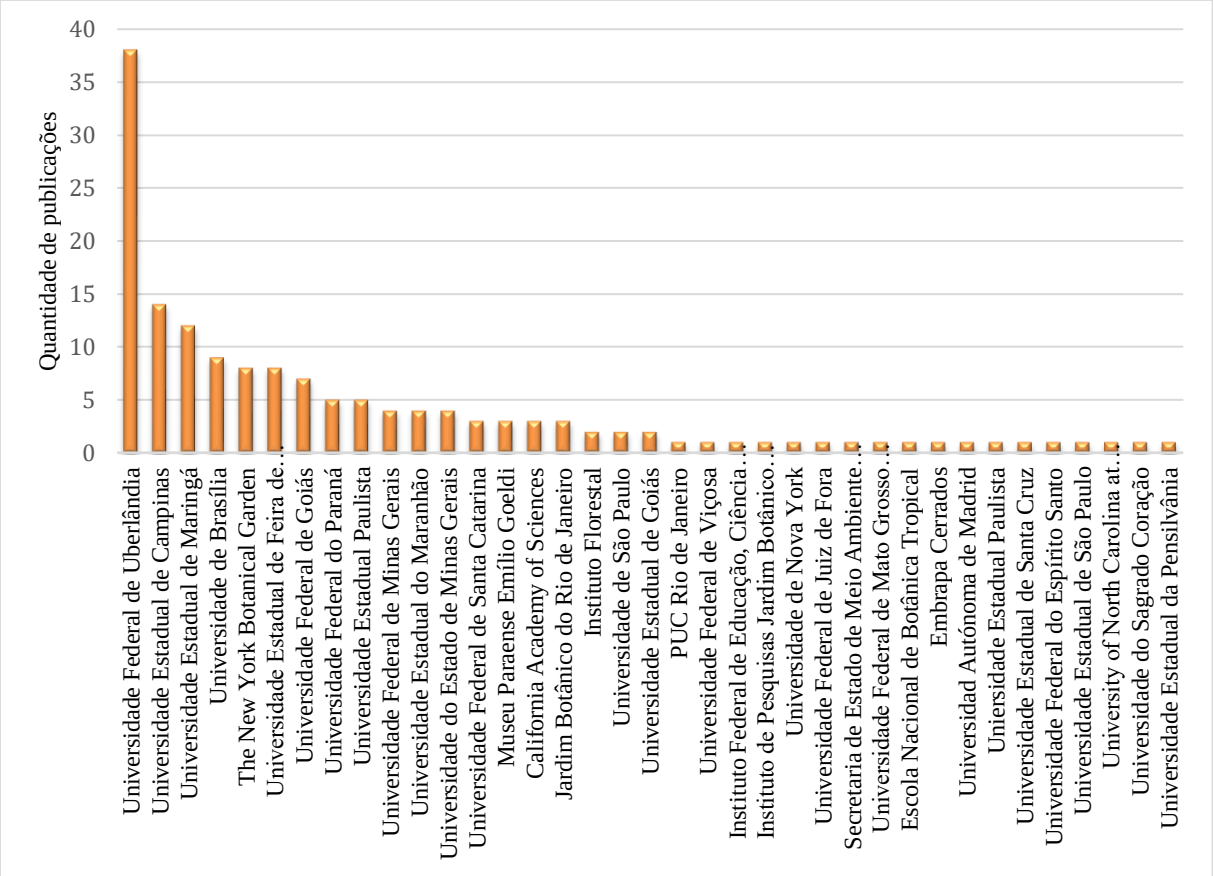

Figure 6. Institutions of the first authors of each analyzed study (articles, theses, dissertations and TCCs) with studies on the taxonomy of Melastomataceae in the Brazilian Cerrado.

The studies resulting from this review are published in 38 journals with ISSN in whose classifications in Qualis Journals are up to date (see

Table 5.), as well as in undergraduate final projects, dissertations and theses presented in 37 public and private educational institutions. The analyzed studies consist of scientific articles published in journals (74%), dissertations (12%), theses (7%) and undergraduate final projects (7%), which were considered here as publications due to their easy of accessibility through

public repositories (Figure 7). It is noteworthy that the majority of scientific articles were published in journals with Qualis classifications A3, A4, B1 and B2. This indicates high quality and/or the rigorous standards of these journals, as a higher Qualis classification (A1) signifies a better publication or, at the very least, stricter competition standards that the article was subjected to, highlighting the importance of studies with taxonomic approaches to Melastomataceae in the Cerrado (FIGUEIREDO FILHO *et al.*, 2014, see Table 5).

Table 5. Journals, number of publications, Qualis Journals classification, and ISSN of each journal. Legend: Nº PUB = Number of publications; * Journals without Qualis classification.

Journals	Nº PUB.	QUALIS	ISSN
Botanical Journal of the Linnean Society	4	A1	0024-4074
Journal of Biogeography	1	A1	0305-0270
Scientific Reports	1	A1	2045-2322
Molecular Phylogenetics and Evolution	1	A1	1055-7903
Taxon	4	A2	0040-0262
Brazilian Geographical Journal	1	A3	2179-2321
Flora	1	A3	0367-2530
International Journal of Plant Sciences	2	A3	1058-5893
Plant Systematics and Evolution	1	A3	0378-2697
Acta Botânica Brasílica	1	A4	0102-3306
PhytoKeys	2	A4	1314-2003
Phytotaxa	23	A4	1179-3155
Polibotánica	1	A4	1405-2768
Systematic Botany	16	A4	0363-6445
Biota Neotropica	2	B1	1676-0603
Brazilian Journal of Botany	2	B1	0100-8404
Kew Bulletin	7	B1	0075-5974
Brittonia	7	B1	0007-196X
Hoehnea	2	B1	0073-2877
Journal of The Torrey Botanical Society	1	B1	1095-5674
Nordic journal of botany	1	B1	0107-055X
Rodriguésia	10	B1	0370-6583
Bioscience Journal	1	B2	1516-3725
Check List	3	B2	1809-127X
Novon	1	B2	1055-3177
Pesquisa Agropecuária Tropical	1	B2	1517-6398
Revista Arquivos Científicos	1	B2	2595-4407
Journal of the Botanical Research Institute of Texas	1	B3	1934-5259
Agrarian Academy	1	B4	2357-9951
Revista do Instituto Florestal	1	B4	0103-2674
Sitientibus série Ciências Biológicas	2	B4	2238-4103
Boletim De Botânica	3	C	0302-2439
Heringeriana	1	C	1983-6996
IF Série Registros	1	C	0103-3360
Revista Saúde e Meio Ambiente	1	C	2447-8822
Aprendendo Ciência	1	*	2237-8766

Iheringea, série botânica	2	*	2446-8231
Preprints	1	*	2310-287X

Source: Sucupira Platform. Available at: https://sucupira.capes.gov.br/sucupira/public/consultas/coleta/veiculoPublicacaoQualis/listaConsultaGeralPeriodicos.jsf. Accessed: January 12, 2023.

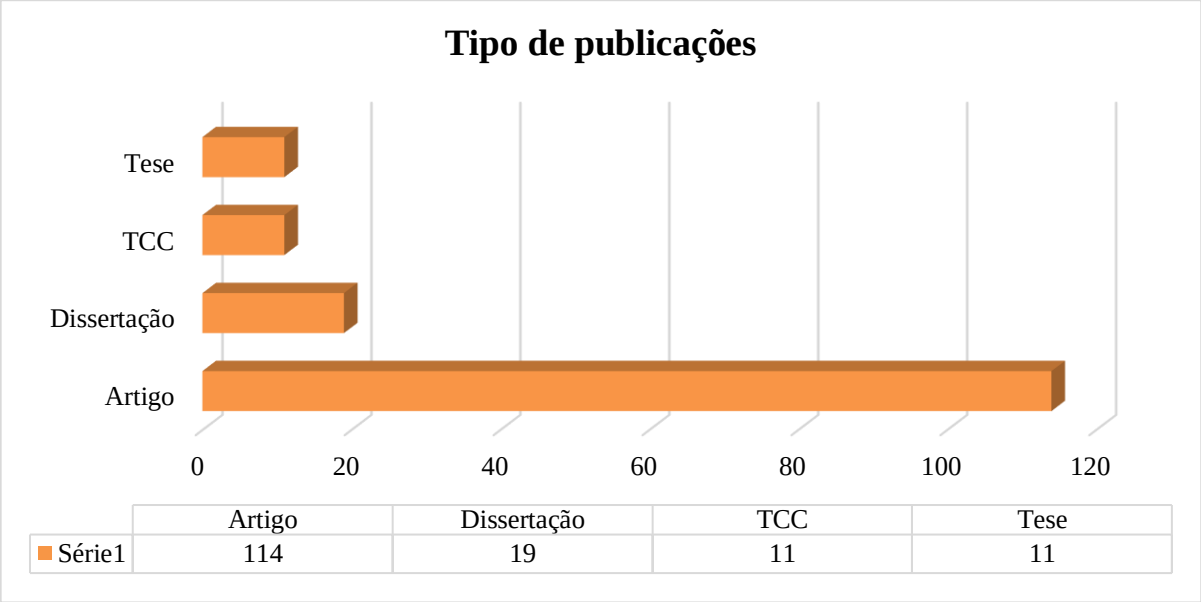

Figure 7. Type and quantity of publications with studies on the taxonomy of Melastomataceae in the Brazilian Cerrado.

The most adopted methodology in taxonomic studies of the Melastomataceae family in the Cerrado was the collection by free walking proposed by FILGUEIRAS *et al.* (1994) present in 102 publications (69%). A smaller number of taxonomic and flora studies of Melastomataceae were performed through plot allocation (7%). In addition, there is a significant number of works carried out through the consultation of herbaria, either in person or virtually (24%). It is known the importance of botanical collections for the knowledge of the Brazilian flora, especially in areas of the Cerrado, which are highly promising and constantly reveal new species. However, it does not diminish the importance of consulting herbaria (FONTELAS *et al.*, 2022). Botanical collection has several implications for accurate identification, both from a scientific point of view and for resource management.

Taxonomy is a science dedicated to botanical naming and identification, being crucial for the understanding of species (ROTTA *et al.*, 2008). The existing knowledge gaps in our classification system, the lack of properly trained taxonomists, and the effects these deficiencies have on our ability to manage and utilize our biological diversity are known as taxonomic impediments (ANONYMOUS, 1998; NAKAJIMA & ROMERO, 1999; ENGEL *et al*., 2021).

The flora of Brazil is a valuable part of its scientific, cultural, and economic heritage and is recognized as a world leader in floristic diversity (Flora do Brasil, 2023). Plant phylogeny and taxonomy are areas of science that investigate the diversity of plants, through groupings, according to origin and their evolutionary relationships, through the sequencing of molecular and morphological data (SOUZA & LORENZI, 2012).

The greater the knowledge base available for the botanical identification, nomenclature and classification of species, and the greater the number of taxonomists engaged and adequately

supported to assess diversity, including infrastructure of Herbaria and/or museums for the maintenance of biological collections, the easier it will be to apply this knowledge in the development of biodiversity conservation policies and strategies, given the scenario of deforestation that Brazil and the world are facing, and the lower the taxonomic impediment (NAKAJIMA & ROMERO, 1999; SOUZA & LORENZI, 2012; SOARES-SILVA *et al*., 2022).

FINAL CONSIDERATIONS

After the bibliographic analysis, it was found that in the last decade, the majority of studies focused on the publication of new species. The importance of botanical collections for the knowledge of flora is evident, especially in Cerrado areas, which have often been sources of taxonomic discoveries and present high endemism. The urgency to describe the new species in our biomes may be directly related to the threat of extinction that many of them face, since some have a restricted geographical distribution. Among the phytophysiognomies of the Cerrado, most species were found in rupestrian fields and cerrado *sensu stricto*. The states of Minas Gerais, Goiás and Bahia stood out for the largest number of studies with taxonomic sampling of Melastomataceae. After a systematic review that included publications on taxonomic novelties, new occurrences, floristic surveys, nomenclatural changes, typifications, phylogeny studies and review of genera, a lack of taxonomic publications on the Melastomataceae family in some Cerrado areas in the last decade was observed. We highlight the importance of future studies that address less explored regions of the Cerrado during this period, such as Tocantins, Maranhão, Piauí, Mato Grosso, Mato Grosso do Sul, and São Paulo, in order to enhance the understanding of the family's diversity in this biome. These states have areas with Cerrado vegetation and are also home to Melastomataceae species. Research on the taxonomy and phylogeny of Melastomataceae in the Brazilian Cerrado has advanced significantly in the last ten years. These studies highlight the diversity of this family in the biome, resulting in part from the training of specialists with experience in various regions of the country. The data in this review come from preliminary research and, therefore, additional studies in other periods are needed to fill the existing gaps due to the scarcity of research in certain regions of the Cerrado. These future studies will contribute to the scientific literature in this thematic area. After all, knowledge about Melastomataceae in the Cerrado must be in constant motion, incorporating new information and discoveries.

This systematic mapping of the literature contributes to the refinement of the group's data, providing a regionalized view of the family in the Cerrado, and fosters new approaches to overcome the taxonomic impediment. In this sense, it is essential to promote discussions on the importance of encouraging the training of more engaged and well-trained taxonomic specialists in species identification, with more herbaria and/or museums available to maintain biological collections. The application of this knowledge to the system of biodiversity preservation policies and strategies requires coordinated efforts to prevent wildfires, combat deforestation, and manage areas in a sustainable manner, such as the creation of more conservation units.

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