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Ethnobotanical, chemical, and pharmacological knowledge of aromatic, mystical, and medicinal plants native to the Brazilian Amazon

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ABSTRACT

This research conducted a systematic review of the literature on the ethnobotany, chemical and pharmacological properties of ten species native to the Amazon, stored in the Herbarium of the Federal Institute of Pará (HIFPA). The data was collected using BRAHMS software and scientific platforms. The research also assessed the geographical distribution, habits and conservation status of these species. The plants were classified into nine botanical families, with Bignoniaceae being the most prevalent. Thirty-five diseases treated with these plants were identified, with headache being the most common. The research established connections between the ethnobotanical use, chemical compounds and pharmacological activities of species such as *Justicia pectoralis*, *Ayapana triplinervis*, *Mansoa alliacea*, *Cedrela odorata*, *Cyperus articulates* and *Conobea scoparioides*. This review has contributed to knowledge about ten Amazonian species, validating traditional uses with scientific evidence and suggesting species for future chemical and ethnopharmacological studies.

Keywords: Traditional medicine; Brazilian Amazon; Systematic review; Herbarium.

Conhecimento etnobotânico, químico e farmacológico de plantas aromáticas, místicas e medicinais nativas da Amazônia brasileira

RESUMO

Esta pesquisa conduziu uma revisão sistemática da literatura sobre a etnobotânica, propriedades químicas e farmacológicas de dez espécies nativas da Amazônia, armazenadas no Herbário do Instituto Federal do Pará (HIFPA). Os dados foram coletados a partir do software BRAHMS e plataformas científicas. A pesquisa também avaliou a distribuição geográfica, os hábitos e o estado de conservação dessas espécies. As plantas foram classificadas em nove famílias botânicas, com a Bignoniaceae sendo a mais prevalente. Foram identificadas 35 doenças tratadas com essas plantas, com dor de cabeça sendo a mais comum. A pesquisa estabeleceu conexões entre o uso etnobotânico, os compostos químicos e as atividades farmacológicas de espécies como *Justicia pectoralis*, *Ayapana triplinervis*, *Mansoa alliacea*, *Cedrela odorata*, *Cyperus articulates* e *Conobea scoparioides*. Esta revisão contribuiu para o conhecimento sobre dez espécies amazônicas, validando usos tradicionais com evidências científicas e sugerindo espécies para futuros estudos químicos e etnofarmacológicos.

Palavras-chave: Medicina tradicional; Amazônia brasileira; Revisão sistemática; Herbário.

Conocimiento etnobotánico, químico y farmacológico de las plantas aromáticas, místicas y medicinales nativas de la Amazonia brasileña

RESUMEN

Esta investigación realizó una revisión sistemática de la literatura sobre etnobotánica, propiedades químicas y farmacológicas de diez especies nativas de la Amazonia, almacenadas en el Herbario del Instituto Federal de Pará (HIFPA). Los datos se recogieron utilizando el software BRAHMS y plataformas científicas. La investigación también evaluó la distribución geográfica, los hábitos y el estado de conservación de estas especies. Las plantas se clasificaron en nueve familias botánicas, siendo Bignoniaceae la más prevalente. Se identificaron 35 enfermedades tratadas con estas plantas, siendo el dolor de cabeza la más común. La investigación estableció conexiones entre el uso etnobotánico, los compuestos químicos y las actividades farmacológicas de especies como Justicia pectoralis, Ayapana triplinervis, Mansoa alliacea, Cedrela odorata, Cyperus articulates y Conobea scoparioides. Esta revisión ha contribuido al conocimiento de diez especies amazónicas, validando los

usos tradicionales con pruebas científicas y sugiriendo especies para futuros estudios químicos y etnofarmacológicos.
Palabras clave: Medicina tradicional; Amazonia brasileña; Revisión sistemática; Herbario.

INTRODUCTION

Ethnobotany studies the dynamic relationships between plants and humans, aiming at comprehending their traditional uses and applications (ALBUQUERQUE, 2005). It also allows understanding how people classify, control, manipulate, and use plant species in their communities (ROCHA *et al*., 2015). In this sense, such a study contributes significantly to the knowledge about feeding patterns, treatments for human diseases, and religious rituals (FRANCO *et al*., 2011).

By registering and conserving species of useful flora, it contributes to the creation and consolidation of an ethnobotanical collection with biological and cultural information, which preserves plant resources and may be composed of exsiccates, raw materials, products, and artifacts. In Brazil, such collections are associated with herbaria (CORNISH; NESBITT, 2014).

The Herbarium of the Federal Institute of Pará (HIFPA - Abaetetuba Campus) has a collection with more than 1.800 species of the Amazonian flora, especially from the Lower Tocantins Region (BRAZILIAN HERBARIUM NETWORK, 2021). The material stored at this herbarium is a testimony to the research on floristic and ethnobotanical aspects of the region (COSTA; FONSECA, 2017). In this sense, one of the studies conducted was about the *Banho de Cheiro* (a sort of ritual bath) of Abaetetuba city, and had the purpose of investigating the mystical and aromatic species that are part of the traditional preparation of this ritual (Fonseca *et al*. 2018). Mystical or ritualistic plants are interesting because, for many years, they have been associated with spiritual healing (SCUDELLER *et al*., 2009), being used as lucky charms and in baths, smokers, blessings, and prayings (SILVA; ANDRADE, 2005). Furthermore, aromatic plants are species that produce essential oils, which are commonly used as raw materials in the pharmaceutical and food industries (MAIA *et al*., 2001). Essential oils are oily products extracted from aromatic plants, that can be biosynthesized as secondary metabolites in different organs of the plant (ASBAHANI *et al*., 2015). Because they have a pleasant aroma, they can join the composition of aromatic and ritualistic baths (FONSECA *et al*., 2018).

In addition to such applications, aromatic and ritualistic plants are popularly known for having medicinal purposes, and it is interesting to note that the traditional uses of medicinal plants often present a mystical character associated with the culture of a specific group. Thus, the healing process is not restricted only to the medicinal potential of plants, it also involves cultural beliefs (ALMEIDA, 2011).

Over the past few years, there has been great scientific progress involving chemical and pharmacological studies on useful plants, aiming to facilitate the development of new compounds with therapeutic properties (CECHINEL-FILHO; YUNES, 1998). And, as a strategy in this investigation, information acquired from plant consumers has been used (ELISABETSKY, 2003). Clearly, mystical and aromatic plants present potential to be explored regarding their chemical and pharmacological effects (FERREIRA; TAVARES-MARTINS, 2016). Therefore, this study ratifies the importance of the interaction between scientific and popular knowledge as a tool for the promotion of rational use of medicinal species, as well as for implementation of investments in research and innovation (VENDRUSCOLO *et al*., 2005). In this sense, the aim of this research was to conduct a systematic literature review of the ethnobotanical, chemical, and pharmacological properties of the mystical and aromatic species native to the Amazon (specifically Tocantins state) that are stored at HIFPA. Moreover, their

geographical distribution in Brazil, habits, conservation status, and the main medicinal treatments that these native plants can provide were evaluated.

MATERIAL AND METHODS

This research follows the ethical procedures proposed by Law No. 13.123 of May 2, 2015 (Biodiversity Law) (BRASIL, 2015), and it was registered in the Platform of the National System for the Management of Genetic Heritage and Associated Traditional Knowledge (SisGen) (nº A8EC4F5).

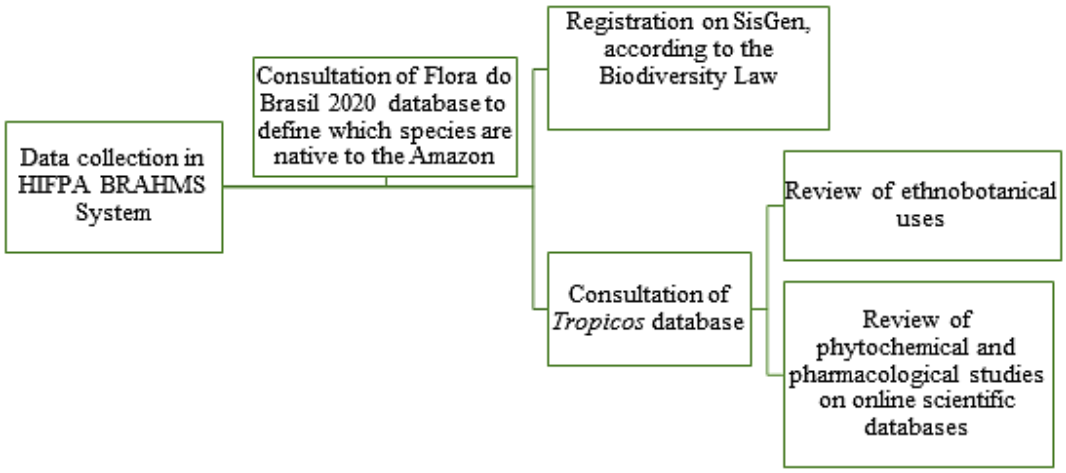
The identification of the mystical and aromatic species stored at HIFPA was based on the herbarium database, which uses the Botanical Research and Herbarium Management System (BRAHMS). It is worth noting that they were categorized as mystical and aromatic according to the literature (FERREIRA; TAVARES-MARTINS, 2016, FONSECA *et al*., 2018, MAIA *et al*., 2001). Then, at Flora do Brasil 2020 database (http://floradobrasil.jbrj.gov.br/), the distribution of each species was checked in order to verify which plants were native to the Amazon. Thus, those with a record in the Amazon Phytogeographic Domain were considered native.

A systematic literature review was performed, which is a synthesis of research related to a specific issue (GALVÃO *et al*., 2004). This study intended to determine which species have ethnobotanical uses related to phytochemical and pharmacological properties, and which species have potential for further scientific investigation.

Bibliographic research was carried out using the scientific names of the plants, including their synonyms, which were obtained from the Tropicos website (www.tropicos.org/home). For each species, a search in the main literature of the Amazon region was made (BERG, 2010; LISBOA; SILVA, 2009). Phytochemical and pharmacological information was obtained through the scientific platforms Google Scholar, PubMed, Portal periódicos CAPES, SciELO, and LILACS. The geographical distribution in Brazil, habits, and the conservation status of the species were analyzed using Flora do Brasil 2020 database.

The flow chart in Figure 1 shows the methodology described in this work. To demonstrate the results, a detailed description was presented for each plant that included: botanical family and species; mystical and aromatic applications; medicinal uses (in folk/traditional medicine); phytochemistry; pharmacological activity; and material examined for each species.

Figure 1 – Methodological approach applied in this study.



Source: Prepared by the author(s) (2025).

RESULTS AND DISCUSSION

Ten species of mystical and/or aromatic plants native to the Amazon are shown in Table 1.

Tabela 1 – Mystical and/or aromatic plants native to the Amazon stored at HIFPA. Er = herb; Ar = tree; Ci = vine; Arb = shrub; NA = not evaluated; VU = vulnerable; NO = North; ND = Northeast; CO = Midwest; SD = Southeast; SU = South.

Family/Species	Ethnobotanical uses	Habit	Conservation status	Geographic distribution in Brazil	*Voucher*
ACHANTACEAE					
Justicia pectoralis Jacq.	Mystical and aromatic	Er	NA	NO, ND, CO	Pompeu 10
ANNONACEAE					
Guatteria scandens Ducke	Mystical and aromatic	Ci	NA	NO, ND, CO, SD, SU	Ribeiro 56
ASTERACEAE					
Ayapana triplinervis (M. Vahl) R.M. King & H. Rob.	Mystical	Er	NA	NO	Pompeu 07
BIGNONIACEAE					
Bignonia nocturna (Barb. Rodr.) L.G. Lohmann	Mystical and aromatic	Ci	NA	NO, CO	Pompeu 08
Mansoa alliacea (Lam.) A. H. Gentry	Mystical	Ci	NA	NO, ND	Santos 11B
CYPERACEAE					
Cyperus articulatus L.	Aromatic	Er	NA	NO, ND, SD	Quaresma 29
MELIACEAE					
Cedrela odorata L.	Mystical and aromatic	Ar	VU	NO, ND, CO, SD, SU	Santos 04
PIPERACEAE					

Piper arboreum Aubl.	Mystical and aromatic	Arb	NA	NO, ND, CO, SD, SU	Pompeu 04
PLANTAGINACEAE					
Conobea scoparioides (Cham. & Schltdl.) Benth.	Mystical and aromatic	Er	NA	NO, ND, CO, SD, SU	Pompeu 05
SIPARUNACEAE					
Siparuna guianensis Aubl.	Mystical and aromatic	Ar	NA	NO, ND, CO, SD, SU	Pompeu 10

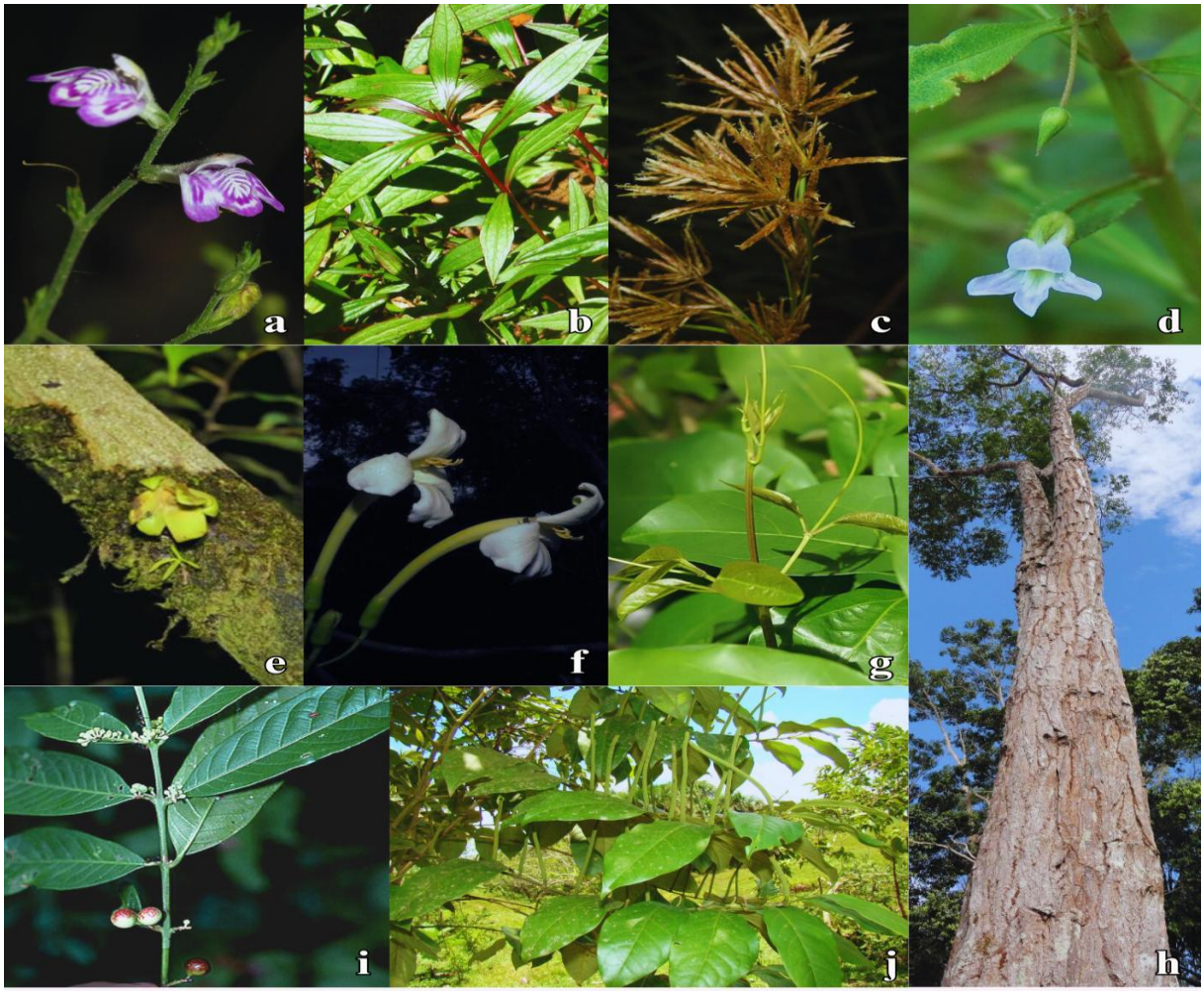
Source: Prepared by the author(s) (2025).

Nine botanical families were identified, with Bignoniaceae being the most representative, with two species. It is widely distributed in tropical and subtropical regions of Brazil, and well distributed in South America (JUDD *et al*., 2009). According to Salman *et al*. (2008), in the Amazon region, there is a wide diversity of tree species that are of great interest to humans, such as two species of the Bignoniaceae family: golden trumpet tree and copaia. This family has trees as its best-known representatives, but a large number of lianas and vines is also included (MATTOS *et al*., 2019).

Ferreira and Tavares-Martins (2016), in their study on chemistry and ethnopharmacology of mystical plants on the island of Mosqueiro (Belém, Pará, Brazil), found the family Lamiaceae to be the most representative among the mystical species. Silva and Moura (2011) corroborated that this family presents exotic genera widely used in the Amazon, differently from the present study that emphasizes only native plants.

The native species investigated corresponded to four species of herbs (*Justicia pectoralis*, *Ayapana triplinervis*, *Cyperus articulatus,* and *Conobea scoparioides)*; three species of lianas (*Guatteria scandens*, *Bignonia nocturna,* and *Mansoa alliacea*); two species of trees (*Cedrela odorata* and *Siparuna guianensis*), and one shrub-type plant (*Piper arboreum*) (Fig. 2).

Figure 2 – Species under study. a. *Justicia pectoralis.* b. *Ayapana triplinervis*. c. *Cyperus articulatus*. d. *Conobea scoparioides*. e. *Guatteria scandens*. f. *Bignonia nocturna*. g. *Mansoa alliacea*. h. *Cedrela odorata*. i. *Siparuna guianensis*. j. *Piper arboreum*.



Sources: a, b: Hammel/TROPICOS (2024), c: Flora of the World (2025), d, e: Hervebreton (2024), f: S.Sant/INPN (2008), g: Stang/TROPICOS (2024), h: Vasquez/TROPICOS (2024), i: Foster/Field Museum of Natural History (2025), j: Huamán/TROPICOS (2024).

In northeastern Brazil, *Justicia pectoralis*, popularly known as chambá, stands out as an herb used in the treatment of respiratory diseases, such as asthma, cough, and bronchitis, besides being part of the National List of Medicinal Plants of Interest to the Brazilian National Health System (SUS) (FONSECA *et al*., 2010). In addition, *Cyperus articulates,* which is cultivated by rural communities in Pará state and marketed as an aromatic plant (CASTELLANI *et al*., 2011), has its essential oil used as a natural component of several products of *Natura Cosmetics* (Brazilian company), mainly in *Ekos Priprioca* line. Also, *Siparuna guianensis,* which presents tree growth habit, is considered a plant with medicinal properties, with conservation priority in the Brazilian Cerrado region (VALENTINI *et al*., 2010).

Cedrela odorata was found to be a vulnerable species in the Amazon biome since it provides high-quality wood for the production of luxury furniture, paneling, ceilings, and construction in general (LORENZI; MATOS, 2008). It is a timber species of great commercial value that has been suffering intense exploitation for two centuries (CNCFlora, 2021). Currently, there is still a large extraction activity of this species, so it is suspected that its amount in nature has already declined by 30% over three generations (CNCFlora, 2021).

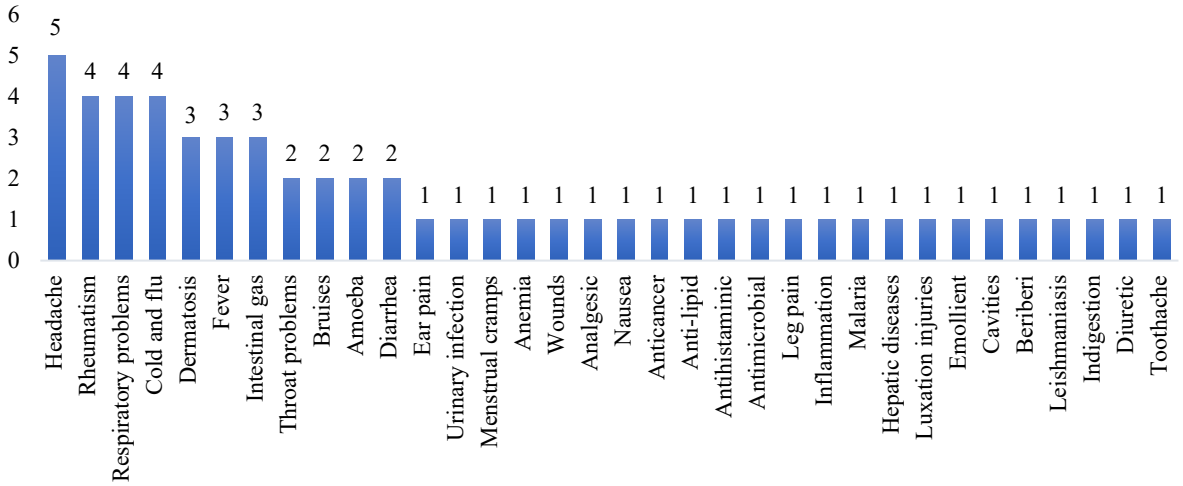
Regarding the geographical distribution of the species, it was found that they are well spread in Brazil. However, *Bignonia nocturna* occurs only in North and Midwest and *Mansoa alliacea* has been predominant in North and Northeast. Similarly, *Ayapana triplinervis* is

exclusive to the North region, inferring, therefore, that this species has presented a description of ethnobotanical use in the Amazon much more extensive than the other native plants.
During this research, much information about the mystical and/or aromatic Amazonian native plant species stored at HIFPA was collected, such as their medicinal use, phytochemical components, and pharmacological activities, which are detailed in Table 2.

According to the data collected (Tab. 2), 35 diseases were found to be treated with traditional practices using native plants, such as headache (5 species), rheumatism (4 species), asthma and bronchitis (4 species), as well as influenza and cold (4 species), which stood out for having more species applied in their respective treatments (Fig. 3).

According to the World Health Organization, approximately 80% of the world population uses traditional medicinal plants to meet their primary health care needs (BRASIL, 2016). The medicinal plant, when correctly used for a particular purpose, can be compared to an industrial drug, although the latter presents active substances that are specific to a particular disease (LORENZI; MATOS, 2008).

Figure 3 – Relationship between medicinal treatments and the number of native species.



Source: Prepared by the author(s) (2025).

Six species were found to correlate folk medicine information with their phytochemical compounds and pharmacological activities:

1) *Justicia pectoralis* (Tab. 2) – used in the treatment of pain (headache, ear pain, urinary tract infections, and abdominal cramps), in addition to treating bruises, rheumatism, fever, and throat and respiratory problems (FERREIRA, 2000; ALBUQUERQUE, 2007; LORENZI; MATOS, 2008; BERG, 2010; ALVES *et al*., 2017). In this species, the compounds umbelliferone and coumarin are correlated with antinociceptive, anti-inflammatory, sedative, and bronchodilator activities (RODRÍGUEZ-CHANFRAU *et al*., 2015).

2) *Ayapana triplinervis* (Tab. 2) – in traditional medicine, it treats throat and respiratory problems, dermatoses, tetanus, stomach ulcers, swellings, amoeba, poor digestion, cold, diarrhea, anemia, skin secretions, and wounds (FERREIRA, 2000; SILVA, 2002; JARDIM; ZOGHBI, 2008; LISBOA; SILVA, 2009; BERG, 2010). The essential oil compounds β-selinene and 2-tert-butyl-1,4-methoxybenzene ratify its antifungal and

antibacterial activities (BEGUM *et al*., 2010). Furthermore, Melo (2012) states that the hydroalcoholic extract presents antinociceptive effects.

3) *Mansoa alliacea* (Tab. 2) – it has great anticancer potential (MAIA *et al*., 2001; VILHENA-POTIGUARA *et al*., 2012). And *M. alliacea* methanolic extract has been acting particularly on breast cancer cells (DUGASANI *et al*., 2009).

4) *Cyperus articulatus* (Tab. 2) – used by the indigenous Yanomami people to treat toothache (YANOMAMI *et al*., 2015). Also, its leaf ethanolic extract shows significant antimicrobial activity (AZZAZ *et al*., 2014; HERRERA-CALDERON *et al*., 2018).

5) *Cedrela odorata* (Tab. 2) – applied in the treatments of malaria, inflammation, and itching (MING, 2006; BERG, 2010). The compound gedunin (limonoid) is related to its antimalarial action (MACKINNON *et al*., 1997). Moreover, the limonoid mexicanolide confirms the antifungal action for *Candida albicans* Berkhout, *C. neoformans* (San Felice) Vuill. and *C. gattii* (NOGUEIRA, 2018).

6) *Conobea scoparioides* (Tab. 2) – applied in the treatment of cavities, since the compound thymol present in this plant has antimicrobial properties (MAIA *et al*., 2001). So far, the species *Bignonia nocturna, Guatteria scandens, Piper arboreum,* and *Siparuna guianensis* stand out because there are no studies that correlate their ethnobotanical uses with their phytochemical and pharmacological activities. Moreover, Almeida (2011) states that there is great potential in the search for new compounds, since less than 10% of the national flora has been studied for phytochemical and pharmacological purposes, aiming at the evaluation of their therapeutic properties.

Up to the present moment, there have been no studies on the species *Guatteria scandens* focused on its pharmacological activity. Certainly, research on insecticides could be conducted due to the presence of alkaloids, compounds that have defense mechanisms against insects and predatory animals (VIEGAS-JÚNIOR, 2003).

Table 2 – Ethnobotanical, phytochemical, and pharmacological studies on mystical and/or aromatic plants native to the Amazon and stored at HIFPA.

Popular name	Species	Medicinal use	Phytochemical compounds	Pharmacological activities
Capitiú	*Siparuna guianensis* Aubl.	Rheumatism, dyspepsia, swelling, and intestinal gas (BERG, 2010; OLIVEIRA *et al*., 2009; SILVA, 2002)	Alkaloids oxoaporphine, liriodenine, and cassamedine; decanoic acid, 2-undecanone, β-myrcene, δ-elemene, germacrene D, α-limonene, bicyclogermacrene, and 2-tridecanone (essential oil); terpenic constituents and flavonoids: trans -β-elemenone, curzerene, γ-elemene, germacrone, β-yerangene, and β-cubenene (GERARD *et al*., 1986; RIOS e*t al*., 1989 Apud LEITÃO *et al*. 1999; FISCHER *et al*., 2005;	Insecticidal, antioxidant, antinociceptive, anti-inflammatory, antibacterial, and antifungal (AGUIAR *et al*., 2015; CONEGUNDES, 2017; OLIVEIRA *et al*., 2020)

			AGUIAR *et al*., 2015; CONEGUNDES, 2017; OLIVEIRA *et al*., 2020)	
Cedro	*Cedrela odorata* L.	Antipyretic, headache, leg pain, diarrhea, inflammations, flu, malaria, cold, liver diseases, and luxation injuries (Berg 2010; Lisboa & Silva 2009; Lorenzi & Matos, 2008; Ming 2006)	Reducing sugars; phenols; flavonoids; limonoids (tetranortriterpenes); sesquiterpene cadalene; limonoids mexicanolide and gedunin; tripertenes cycloeucalenone, α-and β-amirenone, and butyrospermol acetate; steroids β-sitosterol and stigmasterol (Adeoye & Bekoe 1965; Ambrozin et al. 2006; Nogueira 2018; Rosales-Castro 2016)	Antimalarial and antifungal (Mackinnon et al. 1997; Nogueira 2018)
Cipó-d'alho	*Mansoa alliacea* (Lam.) A.H. Gentry	Fever, cold, headache, rheumatism, nausea, worms, dermatosis, respiratory problems, cancer, antilipidemic, antihistamine, and antithrombotic (Coelho-Ferreira 2008; Ferreira 2000; Lisboa & Silva 2009; Maia et al. 2001; Silva 2002; Vilhena-Potiguara et al. 2012)	Reducing sugars; tannins; carotenoids; steroids; triterpenoids; coumarin derivatives; foam saponin; alkaloids; phenol and flavonoids (methanol extract) (Dugasani et al. 2009; Dutra et al. 2016; Oliveira 2013; Patel et al. 2013; Vieira 2003)	Anticancer, cholesterol-reducing, and antifungal (Dugasani et al. 2009; Rana et al. 1999; Srinivasan & Srinivasan 1995; Towne et al. 2015)
Cipó-iuíra	*Guatteria scandens* Ducke	Asthma and lice (Lisboa & Silva, 2009)	Alkaloids (Albarici et al. 2010; Di Stasi 1996; Hocquemiller et al. 1983)	None found.
Curimbó	*Bignonia nocturna* (Barb. Rodr.) L.G. Lohmann	Analgesic and headache (Ming 2006)	benzaldehyde (essential oil) and hydrocyanic acid (Fazolin et al. 2007)	Insecticidal (Fazolin et al. 2007)
Japana	*Ayapana triplinervis* (M. Vahl) R. M. King & H. Rob.	Asthma, hoarseness, eczema, dermatitis, itching, rash, ulcers, tetanus, swellings, amoeba, poor digestion, cold, diarrhea, anemia, hemorrhoids, wounds, and intestinal gas (Berg 2010; Ferreira 2000; Jardim & Zoghbi 2008;	b-selinene and 2-tert-butyl-1,4-methoxybenzene (essential oil); sterols; terpenes; free phenols; alkaloids; tannins; flavonoids; and thymohydroquinone dimethyl ether (Attokaran 2011; Begum et al. 2010; Breitmaier 2006; Davis & Croteau 2000; Dutra et al. 2016; Facknath & Lalljee 2008; Haddad et al. 2019; Melo 2012; Melo et al. 2013)	Antifungal, antibacterial, sedative, anxiolytic, antidepressant, antinociceptive, antioxidant, insecticidal, and prevention of Zika virus infection (Begum et al. 2010; Facknath & Lalljee 2008; Haddad et al. 2019; Melo 2012; Melo et al. 2013; Rajasekaran et al. 2010)

		Lisboa & Silva, 2009; Silva 2002)		
Pataqueira	*Conobea scoparioides* (Cham. & Schltdl.) Benth.	Cavities, beriberi, and leishmaniasis (Lewis & Elvin-Lewis 1977; Maia et al. 2001; Weniger et al. 2001)	Essential oil presents thymol methyl ether, thymol, α-felandrene, and p-cymene (Maia et al. 2000)	Antimicrobial (thymol) and antioxidant (Maia et al. 2001; Rebelo et al. 2009)
Pau-de-angola	*Piper arboreum* Aubl.	Carminative, antirheumatic, emollient, and luxation injuries (Berg 2010; Maia et al. 2001)	Ethanol, hexane, ethyl acetate, and hydromethanol (Dutra et al. 2016; Regasini et al. 2009)	Antifungal (Regasini et al. 2009)
Pripioca	*Cyperus articulatus* L.	Fever, headache, sore throat, and toothache (Yanomami et al. 2015)	Alkaloids, flavonoids, quinones, phenolic compounds, saponins, terpenes, and steroids (Dutra et al. 2016; Herrera-Calderon et al. 2018)	Anticonvulsant, antioxidant, and antimicrobial (Azzaz et al. 2014; Herrera-Calderon et al. 2018)
Trevo	*Justicia pectoralis* Jacq.	Headache, earache, urinary infection, luxation injuries, rheumatism, fever, abdominal cramps, and throat and respiratory problems (Albuquerque 2007, Berg 2010, Ferreira 2000, Lorenzi & Matos 2008, Silva 2002)	Coumarin, umbelliferone, tannins, flavonoids, and polyphenols (Arts & Hollman 2005, Di Stasi, 1996, Faller & Fialho 2009, Leal *et al*. 2000, Monteiro *et al*. 2005, Rodrigues-Silva *et al*. 2015; Rodríguez-Chanfrau & Rodríguez-Ferrada 2014)	Antinociceptive, anti-inflammatory, bronchodilator, and sedative (Rodríguez-Chanfrau *et al*. 2015)

Source: Prepared by the author(s) (2025).

CONCLUSION

The present study, in the context of chemistry and ethnopharmacology of Amazonian mystical and aromatic plants, presented different perspectives, with Bignoniaceae being the most representative botanical family. *Cedrela odorata,* a vulnerable species in the Amazon biome and with significant applications, is of great importance to relate its use to the conservation status since such information can assist in the development of sustainable management plans that may favor the preservation of native flora. A relevant number of treatments with medicinal plants were found. This suggests that the populations of traditional communities, usually more distant from medical facilities, prefer this therapeutic route, also associated with the high cost of drugs. Six species (*Justicia pectoralis, Ayapana triplinervis, Mansoa alliacea, Cyperus Articulatus, Cedrela odorata,* and *Conobea scoparioides*) correlated their uses in traditional folk medicine with their chemical compositions and pharmacological activities. This ratifies that ethnobotanical knowledge is important in treating diseases with traditional species. Thus, it is noticeable that the *species Bignonia nocturna, Guatteria scandens, Piper arboretum,* and *Siparuna guianensis* present potential for phytochemical and ethnopharmacological studies, which may reveal components of pharmacological interest, since they have therapeutic indications in traditional medicine. Currently, there are several academic

papers available on scientific platforms that can enable the development of literature reviews. Such reviews, when published, help other researchers to save days, even months, of work in laboratories or in the field, as well as prevent a study from repeating the same approaches and, finally, reviews can find errors, gaps, and doubts, which can be clarified by future works. The elaboration of this review contributed to a synthesis of general knowledge and established a database with systematized information about ten native species from the Amazon region. Thus, it was possible to relate information on traditional uses with scientific evidence of the effectiveness of such plants, as well as to suggest species for future chemical and ethnopharmacological studies.

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