Chapter 16
An Overview of the Cultural and Popular Use of *Baccharis*

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Abstract It is widely known that *Baccharis* is an important genus from the ethnobotanical point of view, but a general revision of their usage was never produced. Through the revision of recent and classic ethnobotanical studies, we made a compilation of data regarding the popular uses of several species of *Baccharis* in South America. Commentaries on the usage of species of *Baccharis* are here presented and grouped by general use. The main categories of use found were as alimentary plants, for the construction of utensils, dye plants, and as medicinal plants. Medicinal uses were classified according to ICD-11. We found that *Baccharis* species are mostly used as medicinal plants, particularly for the treatment of general alignments, external injuries, and digestive diseases. *Baccharis articulata* and *B. trimera* (= *B. crispa*) were the most cited species in the consulted studies. Our results reiterate the importance of this genus in the popular knowledge of communities of South America.

Keywords Ethnobotanical knowledge · Food security · Medicinal plants · Plant popular use

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G. W. Fernandes et al. (eds.), *Baccharis*,
https://doi.org/10.1007/978-3-030-83511-8_16

1 Introduction

Many species of *Baccharis* L. are known and used by different traditional communities in many countries around the globe, particularly in Latin America. According to Aguilar et al. (2007) and Molares et al. (2009), the broad usage of *Baccharis* in traditional medicine can be attributed to the phytochemical aspects of the plants, which are rich in flavonoids and terpenes.

Several different uses are reported for *Baccharis* in the traditional literature, including as food, forage for livestock, tools, dye plants, and charcoal, but the ethnobotanical knowledge related to species of this genus is prominently linked to their use as medicine, as noted by Molares et al. (2009). According to Ariza Espinar (1973) and Heiden et al. (2009), many species of *Baccharis* used as medicine have winged stems and are known as "carquejas" (or a variety of names derived from it) and are usually used as chagrin in the form of infusions. Many other species, mostly more robust plants with a shrubby habit, are known as "vassouras" ("brooms") and used for a wide variety of ends, including use as charcoal and crafting of tools (Pio Corrêa 1931; Rodrigues et al. 2002).

In Brazil, there are many sources of information by various naturalists regarding the ethnobotany of *Baccharis.* Brandão (2010) mentions the account of C.J.F. Bunburry, an English naturalist who traveled through Rio de Janeiro and Minas Gerais from 1833 to 1835, regarding the usage of the "carqueja" (*Baccharis crispa* Spreng. or one of its synonyms, such as *B. trimera* DC.):

> "... It is excessively bitter and extensively used in medicine by Brazilian people, particularly for horses."
>
> "The entire plant is extremely bitter and surpasses the quina de Genciana (*Gentiana lutea* L.). It is used against intermittent fevers."

Currently, *Baccharis* species continue to be used in Brazilian popular medicine. *Baccharis trimera* (Less.) DC. (now synonymous with *B. crispa* Spreng.), for example, is listed in the Relação Nacional de Plantas Medicinais de Interesse ao Sistema Único de Saúde -RENISUS (National List of Medicinal Plants of Interest to the Unified Health System) (Brasil 2019) and is indicated by the Formulário de Fitoterápicos da Farmacopéia Brasileira (Pharmacotherapeutic Formulary of the Brazilian Pharmacopoeia) as an antidispeptic (Brasil 2011, 2018). Many species of the genus are commercialized in popular markets, and multiple similar species may be used interchangeably for the treatment of the same diseases (Heiden et al. 2009).

In this context, the objective of the present work was to compile ethnobotanical information of *Baccharis* species.

2 Material and Methods

For the development of this revision, we consulted published articles, monographs, MSc dissertations, and PhD theses. Works on traditional uses of *Baccharis* were accessed through a search on digital databases such as PubMed (https://www.ncbi.nlm.nih.gov/pubmed/), Web of Science (https://clarivate.com/products/web-of-science), Scopus (https://www.scopus.com), Scielo (https://www.SciELO.org/php/index.php), and in University libraries. Searches were conducted without a limiting period. Classical Pharmacognosy and Phytotherapy textbooks were also reviewed. The traditional use was reviewed on recognized ethnobotanical references about Brazilian Flora.

Popular and scientific names of species of *Baccharis* are cited according to their original citations in the consulted literature, disregarding any nomenclatural or taxonomic issues involving these names. This includes original citations of species presently included in *Baccharis*, but previously circumscribed in different genera, such as *Baccharidastrum triplinervium* (Less.) Cabrera (= *Baccharis vulneraria* Baker). Authorship of scientific names follows IPNI (http://www.ipni.org).

The expressions used to describe folk uses found in the ethnobotanical literature were cited as in the original works. Popular therapeutic indications for species of *Baccharis* species found in ethnobotanical surveys were classified according to ICD-11 (WHO 2018).

3 Ethnobotanical Uses

The ethnobotanical data found are presented in the following categories of use.

Alimentary Use

Some species of *Baccharis* are used in the preparation of beverages. *Baccharis articulata* (Lam.) Pers. (“carquejinha”) is cited by Kinupp and Lorenzi (2014) as a nonconventional food plant and as sporadically employed in cooking and brewing homemade beers. It is also part of the recipe for a little slimy drink. According to Ferreira (1998), *B. genisteloides* (Lam.) Pers. replaces hops in beer brewing and Hurrell et al. (2011) cite the use of branches to flavor bitter drinks.

Baccharis gilliesii A.Gray, known as “yerba de obeja” (“sheep’s weed”), is used as forage for livestock, in general, in some rural communities in Argentina, and noted as being particularly enjoyed by sheep, hence its popular name (Muiño 2010). *Baccharis salicifolia* (Ruiz & Pav.) Pers. (“chilca”) is also used as forage in these communities (Muiño 2010). Zardini (1984) cites *B. incarum* Wedd. as being used as forage in Argentina and also as being consumed as food by humans in northern

Chile. According to Loredo-Medina et al. (2002), *Baccharis conferta* Kunth ("escoba") is used as forage in Mexico.

According to Zardini (1984), *B. rufescens* Spreng. is consumed as a salad in Argentina, where there are also records of it being used as a spice in substitution of salt.

Utensils

In the classic work of Pio Corrêa (1931), several uses are cited for species of *Baccharis*, including their usage as material for the constructing of rustic brooms ("vassouras").

Baccharis dracunculifolia DC. is one of the most cited species in the construction of domestic utensils in Brazil. Rodrigues et al. (2002) mention the use of this species (popularly called "alecrim") as firewood and as a broom in the Brazilian state of Minas Gerais. It is also mentioned with these uses in Santa Catarina, denominated by "vassoura-branca" and "vassourão" (Zuchiwschi et al. 2010; Pereira et al. 2016) and in São Paulo (Oliveira Junior et al. 2018). In Rio Grande do Sul, it is known as "vassourão" and used for crafting domestic and agricultural utensils, for structural use, and for firewood (Chaves 2010).

Zardini (1984) mentions ethnobotanical usages of several species of *Baccharis* in Argentina, including a few used as tools: the wood of *Baccharis boliviensis* (Wedd.) Cabrera, *B. dracunculifolia, B. incarum* Wedd., *B. polifolia* Griseb. and *B. tucumanensis* Hook. & Arn. is used as charcoal; *B. notosergila* Griseb. is predominantly used in the crafting of brushes; *B. spartioides* DC. is also used in the crafting of brushes, which are said to be very aromatic and useful to repel insects, and the branches of the plant are also used as brooms.

According to Loredo-Medina et al. (2002), *Baccharis conferta* Kunth ("escoba") is used for the production of handicrafts and for industrial use in Mexico.

Dye Plants

Branches of various species of *Baccharis* are used for dyeing in South America.

According to Ferreira (1998), when the branches are cooked in aluminum and stainless steel pots, the coloration is yellow-gold; when they are cooked in used iron pots or rusty cans, the coloration is yellow-green. *Baccharis calliprinos* Griseb. is used as a dye plant, mostly to obtain the color yellow and *B. notosergila* is used to obtain the color black, which is then used to paint pottery (Zardini 1984).

Baccharis genistelloides, *B. latifolia* (Ruiz & Pav.) Pers., and *B. odorata* Kunth are cited by Usca and Linares (2012) as used in a few communities in Ecuador as dye plants. The usage of *B. latifolia* as a dye plant is also reported by Zardini (1984), this time in Argentina. Some Andean communities still retain the tradition of using

some vegetable dyes extracted from shrub species (*Baccharis incarum* (Wedd.) Perkins) such as "thola" (Vidaurre et al. 2006).

Medicinal Use

The therapeutic uses of the species cited as medicinal were compiled and classified according to the international classification of diseases; ICD-11 (WHO 2018) is explained in Table 16.1. A total of 41 species are listed in Table 16.2, which also includes the chapters of ICD-11 used to classify them, their vernacular names found in the consulted literature, and the references of the usages.

Figure 16.1 summarizes the number of species cited for each chapter of ICD-11. Of the 22 categories, 14 could be associated with the medicinal uses found in the consulted literature. No mentions for Chaps. 4, 6, 7, 8, 9, 10, 19, and 20 were found in the consulted literature. Most species of *Baccharis* with known medicinal use could be classified under category 21, a rather unspecific category that mostly covers symptoms not suitable for the other chapters. Among the most cited uses classified hereunder, Chap. 21 covers the usage of *Baccharis* for the treatment of general fevers, inflammations, rheumatism or pain in general, and general malaise. Many species are also commonly used for the treatment of general external injuries (Chap. 22) and for diseases of the digestive system (Chap. 13).

Of the 41 species named in our revision, *B. articulata, B. trimera*, and *B. genistelloides* are the most versatile, with their uses being classified under Chaps. 11, 10, and 9 of ICD-11, respectively. *Baccharis articulata* and *B. trimera* are particularly notable for being the most cited species in our revision, which evidences their statuses as two of the most widely used medicinal plants in southern South America, especially in Argentina and southern Brazil. According to Heiden et al. (2009), however, *B. trimera* is to be treated as a synonym of *B. crispa*, which is also extensively cited in the consulted literature.

The use of several species of *Baccharis* for the digestive system can be explained by the fact that people seek bitter plants to alleviate the symptoms of poor digestion. Olivier and van Wyk (2013) affirm that the use of bitter tonics is an ancient practice believed to have beneficial effects on digestion and high bitterness values presented by these plants may at least be partly ascribed to the bitter tonic effect, that is, the stimulation of gastric juices via the nervus vagus.

Multiple recent sources exist to provide information regarding the usage of *Baccharis* as medicine, particularly traditional studies of ethnobotany. Still, some records of the use of *Baccharis* species as medicinal are found in historical works, such as Pio Corrêa (1931), which in his classic work "Dicionário das Plantas úteis do Brasil" related several medicinal uses for different species of *Baccharis*, such as digestive and as tonics.

Interesting information is provided by Ferreira (1998), who cites the use of *Baccharis genisteloides* in the rural regions of Argentina, where the population believes that the plant is effective in simultaneously combating male impotence and

Table 16.1 Classification of the popular therapeutic indications for *Baccharis* species found in ethnobotanical surveys according to ICD-11 (WHO 2018)

Chapter	International Classification Diseases	Popular uses
01	Certain infectious or parasitic diseases	As anthelmintic, anti-inflammatory, and antibacterial. For infections, hepatitis, leprosy, malaria, nephritis, syphilis, cholera, and Chagas disease
02	Neoplasms	As anticancer
03	Diseases of the blood or blood-forming organs	For anemia and "to the blood"
05	Endocrine, nutritional, or metabolic diseases	To increase the appetite, weakness, anorexia, weight loss, diabetes, hypoglycemic, depurative, menopause, glycosuria. To lower triglycerides and cholesterol
11	Diseases of the circulatory system	For angina and stroke. As hypotensive, restore blood circulation, and varicose veins
12	Diseases of the respiratory system	For asthma, cough, influenza. As anticatarrhal
13	Diseases of the digestive system	For hemorrhoids, constipation, dyspepsia, ulcers, gastritis, nausea, treat heartburn. As antidiarrheic, choleric action, colagoga, tonic, liver, hepatoprotective, digestive, stomach, eupeptic, hepatic stimulant, gastropathy, inflammation of the spleen and gallstones
14	Diseases of the skin	For growth and hair loss, acne treatment, and dermatitis
15	Diseases of the musculoskeletal system or connective tissue	For spine pains
16	Diseases of the genitourinary system	For vaginal lavage, menstrual cramps, metritis, and gynecological disorders. For treating maladies of the kidneys, kidney stone, kidney disease. As a diuretic, urinary tract infection and bladder inflammation
17	Conditions related to sexual health	For male impotence, female sterility, venereal diseases, aphrodisiac, contraceptive, and female fertility regulator
18	Pregnancy, childbirth or the puerperium	To treat postpartum complications, as abortive
21	Symptoms, signs, or clinical findings, not elsewhere classified	For treatment of malaise, inflammation, rheumatism, muscular pains, bones, headaches, cramps. As analgesic, antiseptic, antispasmodic, febrifuge, stimulant action, smooth muscle relaxant (vasodilator action), reduce swelling, jaundice, food poisoning, and fortifier
22	Injury, poisoning, or certain other consequences of external causes	For wounds, burns, ulcers, trauma, contracted diseases of animals, against snakebites and purification and relaxation. As antiseptic and depurative

The categories for which no citations for use of *Baccharis* species were found were excluded

Table 16.2 *Baccharis* species, traditional popular names, chapters of ICD-11, and references

Baccharis species, traditional popular names	Traditional uses according to the Classification of Diseases (ICD-11) (chapters)	References
Baccharidastrum triplinervium (Less.)Cabrera (Erva-santa, erva-santa-maria)	22	Garlet and Irgang (2001) and Soares et al. (2004)
Baccharis altimontana G.Heiden, Baumgratz & R.Esteves	01, 05, 13, 21	Santos et al. (2014)
Baccharis anomala DC. (Parreirinha)	01, 13, 16, 22	Kubo (1997) and Garlet and Irgang (2001)
Baccharis artemisioides Hook. & Arn. (Mío-mío-blanco, pichana-blanca, perkan-kachú, plan-romeriyu, romerillo, romerillo-blanco, romerillo-malo)	21, 22	Zardini (1984)
B. articulata (Lam.) Pers. (Carqueja, carqueja-branca, carqueja-crespa, carqueja-doce-carquejinha, carquejinha-branca, carquejinha-do-campo, carquejinha-miúda, carquejilla, yacaré-ruguai, killá-fosí, kilá-foshí, l'e- tañoni, caá-cambu-y-guazu, cacapeguazú, yaguareté-caá)	01, 03, 05, 11, 12, 13, 15, 16, 17, 21, 22	Pio Corrêa (1931), Mariante (1984), Zardini (1984), Simões et al. (1986), Martins et al. (1994), Alice et al. (1995), Lopes (1997), Kubo (1997), Ferreira (1998), Koch (2000), Pavan-Fruehauf (2000), Garlet and Irgang (2001), Soares et al. (2004), Barbosa (2005), Goleniowski et al. (2006), Barros et al. (2007), Souza (2007), Baldauf et al. (2009), Ceolin et al. (2009), Steffen (2010), Haeffner et al. (2012), Quiroga et al. (2012), Battisti et al. (2013), Santos et al. (2014) and Acosta et al. (2017)
Baccharis calliprinos Griseb. (Chascoma, chilca-dulce, fiamate, palo-blanco)	21	Zardini (1984)
Baccharis conferta Kunth (Escobilla-china)	13	Weimann and Heinrich (1996)
Baccharis crispa Spreng. (Carqueja, carqueja-amargosa, carqueija, carquejilla)	01, 05, 13, 16, 21, 22	Zardini (1984), Paz et al. (1992), Haeffner et al. (2012), Bieski et al. (2015) and Tribess et al. (2015)
Baccharis douglasii DC. (Renegada)	16, 22	Bocek (1984)
Baccharis dracunculifolia DC. (Alecrim-do-campo, carqueja, vassourinha, vassoura-mansa, jatun t'ula, tola)	01, 13, 16, 21, 22	Gavilanes et al. (1981/1982), Garlet and Irgang (2001), Fernandez et al. (2003), Silva et al. (2008) and Quiroga et al. (2012)
Baccharis floribunda Kunth (Waca-ch'illka)	16, 22	Fernandez et al. (2003)

(continued)

Table 16.2 (continued)

Baccharis species, traditional popular names	Traditional uses according to the Classification of Diseases (ICD-11) (chapters)	References
Baccharis gaudichaudiana DC. (Alecrim-do-campo, carqueja, carqueja-doce, vassourinha)	01, 03, 05, 11, 13, 16, 21, 22	Pio Corrêa (1931), Zardini (1984), Pavan-Fruehauf (2000) and Garlet and Irgang (2001)
Baccharis genistelloides (Lam.) Pers. (Carqueja, carqueja-amarga, carqueja-amargosa, carqueja-de-folhas-estreitas, quina-de-condamine, callua-callua, cuchu-cuchu, ischu-tullma, karkeja, kuchu-kuchu, quinsa cuchu, yaja, cucho-cucho, charara, kimsa-kkuchu)	01, 03, 05, 11, 13, 16, 17, 18, 21	Simões et al. (1986), Montes and Wilkomirsky (1988), Cervi et al. (1989), Ferreira (1998), Albuquerque et al. (2005), Osuna et al. (2005), Macía et al. (2005), Aguilar et al. (2007), De-la-Cruz et al. (2007) and Philippi (2012)
Baccharis genistifolia DC. (Wentrú-kulandriya)	21	Zardini (1984)
Baccharis glutinosa Pers. (Batamote, jarilla, hierba-del-pasmo, bachomo, guatamote)	13, 14, 16, 21, 22	Bocek (1984), García-Alvarado et al. (2001), Aguilar et al. (2007) and Moreno-Salazar et al. (2008)
Baccharis grisebachii Hieron. (Quinchamal, romerillo, tancha)	22	Zardini (1984)
Baccharis latifolia (Ruiz & Pav.) Pers. (Chilco, chilca, chilka)	13, 21, 22	Macía et al. (2005), De-la-Cruz et al. (2007) and Sequeda-Castañeda et al. (2015)
Baccharis linearis (Ruiz & Pav.) Pers. (Romerillo)	21	Montes and Wilkomirsky (1988)
Baccharis lundii DC.	13	Pio Corrêa (1931) and Pavan-Fruehauf (2000)
Baccharis macrodonta DC.	21	Pio Corrêa (1931) and Gavilanes et al. (1981/1982)
Baccharis microcephala (Less.) DC. (Carqueja, carqueija)	13	Zardini (1984)
Baccharis microphylla Kunth (Chilca)	11, 13, 21, 22	Morales et al. (2008)
Baccharis notosergila Griseb. (Carqueija, carqueja, koloron-rakté, milgrat, pagueré-lko, oron-rakté, tipisha'i)	1, 18, 21, 22	Pio Corrêa (1931), Zardini (1984) and Pavan-Fruehauf (2000)
Baccharis obovata Hook. & Arn. (Wuatro)	12, 14, 21	Molares et al. (2009)
Baccharis ochracea Spreng. (Erva-santa)	13, 17, 21	Philippi (2012)
Baccharis odorata Kunth (Taya)	21	De-la-Cruz et al. (2007)

(continued)

Table 16.2 (continued)

Baccharis species, traditional popular names	Traditional uses according to the Classification of Diseases (ICD-11) (chapters)	References
Baccharis pedicellata DC. (Chilca-cordillerana)	21	Montes and Wilkomirsky (1988)
Baccharis petiolata DC. (Chilca)	11, 13, 21, 22	Morales et al. (2008)
Baccharis pingraea DC. (Chilca)	01, 02, 21	Goleniowski et al. (2006)
Baccharis punctulata DC. (Erva-santa, ch'illka-saru- saru)	03, 12, 22	Kubo (1997) and De-la-Cruz et al. (2007)
Baccharis rhomboidalis J.Rémy (Chica-cordillerana)	05	Reis et al. (1990)
Baccharis riograndensis Malag. & J.E.Vidal	13, 16, 21	Pio Corrêa (1931), Mariante (1984), Simões et al. (1986), Martins et al. (1994), Alice et al. (1995), Lopes (1997) and Pavan-Fruehauf (2000)
Baccharis salicifolia (Ruiz & Pav.) Pers. (Chilca, chilca-blanca, ckechua-chilca, chillca, chilco, yana-chilca, chilca- negra, chilca-amarga, suncho, caabo-yuqui, ca'gu-si, chilca- dulce, chirca, jarilla, jarilla- del-río, junco, vara-dulce, yuno)	01, 02, 12, 14, 21, 22	Zardini (1984), Scarpa (2004), Goleniowski et al. (2006), Aguilar et al. (2007) and De-la-Cruz et al. (2007)
Baccharis santelicis Phil. (Chilca)	11, 13, 21, 22	Morales et al. (2008)
Baccharis stenocephala Baker	22	Pio Corrêa (1931), Montes and Wilkomirsky (1988) and Pavan-Fruehauf (2000)
Baccharis tridentata Vahl (Carqueja-folhuda)	16	Pio Corrêa (1931)

(continued)

Table 16.2 (continued)

Baccharis species, traditional popular names	Traditional uses according to the Classification of Diseases (ICD-11) (chapters)	References
Baccharis trimera (Less.) DC. (Carqueja, carqueja-folhuda, charruinha, carqueja-doce, bacanta, carqueja-amarga, carqueja-amargosa, capoeira-branca, carqueja-branca, carqueja-crespa, carque, quina-de-condamine, tiririca-de-babado, vassoura, tiririca-de-balaio, yaguareté- ca'á)	01, 03, 05, 11, 12, 13, 16, 17, 21, 22	Gavilanes et al. (1981/1982), Zardini (1984), Santos et al. (1988), Siqueira (1988), Cervi et al. (1989), Sousa et al. (1991), Paz et al. (1992), Figueiredo et al. (1993), Martins et al. (1994), Figueiredo et al. (1997), Lopes (1997), Piva (1998), Pavan-Fruehauf (2000), Garlet and Irgang (2001), Ladeira (2002) Moreira et al. (2002), Stasi and Hiruma-Lima (2002), Maciel and Cardoso (2003), Albuquerque et al. (2005), Osuna et al. (2005), Brasil (2006), Vendruscolo and Mentz (2006), Albuquerque et al. (2007), Hanazaki et al. (2007), Lorenzi and Matos (2008), Silva et al. (2008), Ceolin et al. (2009), Pereira et al. (2009), Steffen (2010), Castro et al. (2011), Coan and Matias (2013), Löbler et al. (2014), Cercato et al. (2015) and Ribeiro et al. (2017)
Baccharis trinervis (Lam.) DC. (Bejuco-de-valdivia, marucha)	13, 22	Weimann and Heinrich (1996) and Vásquez et al. (2015)
Baccharis triptera Mart. (Carqueja-amarga, cacália)	01, 05, 11,13, 16, 21	Gavilanes et al. (1981/1982), Verardo (1981/1982) and Reis et al. (1990)
Baccharis vulneraria Baker (Mbichini-kaá, yerba-santa)	22	Zardini (1984)
Baccharis sp.	01, 05, 11, 13, 21, 22	Maffei (1969), Souza (2007) and Borges (2010)

female sterility. It also reported that during the cholera epidemic in Brazil in 1849, it was believed that *B. articulata* was fighting anemia and that this species is also used in veterinary medicine to combat cattle diarrhea (Ferreira 1998).

Other Uses

Some other uses have been found for *Baccharis*, including their use as bee forage, as ornamental plants, and their use in religious rituals.

In Southern Brazil, *Baccharis* species are used as bee forage. Reports of this use include the ones of Breyer et al. (2016) and Zuchiwschi et al. (2010) for

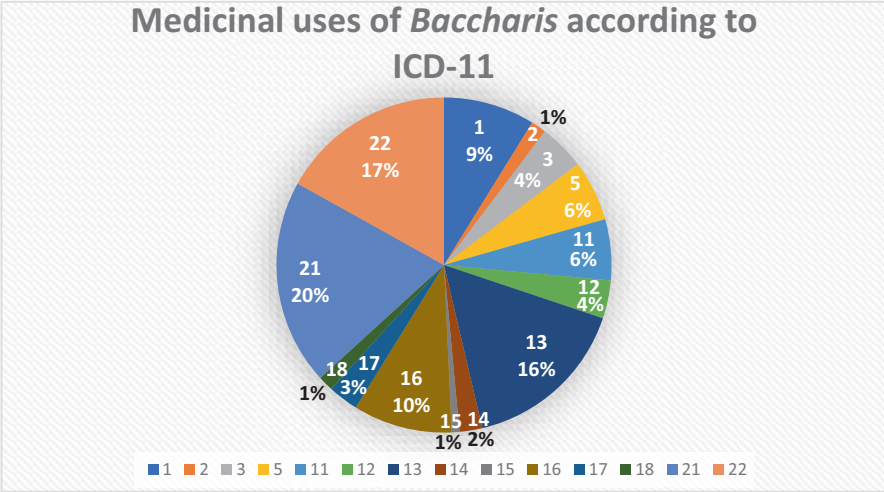

Fig. 16.1 Summary of the amount of species cited for each chapter of medicinal use according to ICD-11

Baccharidastrum triplinervium (Less.) Cabrera ("vassorinha", "erva-desantana") (= *B. vulneria*), and the one of Ferreira (1998) for *B. genisteloides*.

In Brazil, *Baccharis dracunculifolia* is used in liturgical rituals of Candomblé in some communities in Bahia (Pires et al. 2009) and in São Paulo (Oliveira Junior et al. 2018).

The use in personal hygiene is referred in Brazil for *Baccharis dracunculifolia* by Pereira et al. (2016) and for *B. genisteloides*, which has very white wood and can be used to clean the teeth according to Ferreira (1998).

Baccharis milleflora (Less.) DC. and *B. tridentata* Vahl. were pointed by Tognon and Cuquel (2015) as presenting a high ornamental potential for use as cutting foliage with characteristics suitable for use as complements to floral arrangements.

4 Conclusion

Our findings demonstrate the importance of *Baccharis* in the ethnobotany of South America. We found that species of *Baccharis* are mostly used as medicinal plants, particularly for the treatment of general alignments, external conditions, and the treatment of digestive diseases. The latter use is mostly related to the species with winged stems, which are popularly known as "carquejas." However, we also found that there are many other different applications of *Baccharis*, including their use as forage, as dye plants, and their importance in a few religious rituals. The general

knowledge in the ethnobotany of *Baccharis* is, however, still incomplete, and there are surely many communities still to be investigated. Our study is a starting point for future revisions aiming to better understand the different applications of species of *Baccharis*.

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