Research Article

Ethnopharmacology of Medicinal Plants of the Pantanal Region (Mato Grosso, Brazil)

Isanete Geraldini Costa Bieski, 1 Fabrício Rios Santos, 1 Rafael Melo de Oliveira, 1 Mariano Martinez Espinosa, 2 Miramy Macedo, 3 Ulysses Paulino Albuquerque, 4 and Domingos Tabajara de Oliveira Martins 1

1 Department of Basic Sciences in Health, Faculty of Medicine, Federal University of Mato Grosso, Cuiabá, Avenida Fernando Correa da Costa, No. 2367, University Campus, 78060-900 Cuiabá, MT, Brazil
2 Department of Statistics, Institute of Exact and Earth Sciences, Federal University of Mato Grosso, 78060-900 Cuiabá, MT, Brazil
3 Faculty of Biological Sciences, University of Cuiabá, Mato Grosso, Avenida Beira Rio, No. 3100, University Campus, 78020-590 Cuiabá, MT, Brazil
4 Department of Biology, Botany Area, Laboratory of Applied Ethnobotany, Federal University of Rural de Pernambuco, 52171-900 Recife, PE, Brazil

Correspondence should be addressed to Domingos Tabajara de Oliveira Martins, taba@terra.com.br

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Traditional knowledge is an important source of obtaining new phytotherapeutic agents. Ethnobotanical survey of medicinal plants was conducted in Nossa Senhora Aparecida do Chumbo District (NSACD), located in Poconé, Mato Grosso, Brazil using semi-structured questionnaires and interviews. 376 species of medicinal plants belonging to 285 genera and 102 families were cited. Fabaceae (10.2%), Asteraceae (7.82%) and Lamaceae (4.89%) families are of greater importance. Species with the greater relative importance were *Himatanthus obovatus* (1.87), *Hibiscus sabdariffa* (1.87), *Solidago microglossa* (1.80), *Strychnos pseudoquina* (1.73) and *Dorstenia brasiliensis*, *Scoparia dulcis* L., and *Luehea divaricata* (1.50). The informant consensus factor (ICF) ranged from 0.13 to 0.78 encompassing 18 disease categories, of which 15 had ICF greater than 0.50, with a predominance of disease categories related to injuries, poisoning and certain other consequences of external causes (ICF = 0.78) having 65 species cited while 20 species were cited for mental and behavioral disorders (ICF = 0.77). The results show that knowledge about medicinal plants is evenly distributed among the population of NSACD. This population possesses medicinal plants for most disease categories, with the highest concordance for prenatal, mental/behavioral and respiratory problems.

1. Introduction

Despite the fact that modern medicine, on the basis of the complex pharmaceutical industry, is well developed in most part of the world, the World Health Organization (WHO) through it Traditional Medicine Program recommends its Member States to formulate and develop policies for the use of complementary and alternative medicine (CAM) in their national health care programmes [1]. Among the components of CAM, phytotherapy practiced by the greater percentage of the world population through the use of plants or their derivatives, occupies a significant and unique position [2].

In this sense, documentation of the indigenous knowledge through ethnobotanical studies is important in the conservation and utilization of biological resources [3].

Brazil is a country with floral megadiversity, possessing six ecological domains, namely, Amazonian forest, Caatinga, Pampas, Cerrado, Atlantic Forest, and the Pantanal [4]. Mato Grosso region is noteworthy in this regard, as it occupies a prominent position both in the national and international settings, for it presents three major Brazilian ecosystems (the Pantanal, Cerrado, and Amazonian rainforest). Besides this, it also hosts diverse traditional communities in its territories, namely, the Indians descents (Amerindians), African descents, and the white Europeans. However, due to the mass
migration from the rural areas and technological development, coupled with globalization of knowledge by the dominant nations, cultural tradition concerning the use of medicinal plants is in the major phase of declining [5].

The Pantanal is distinguishably the largest wetland ecosystem of the world, according to the classification by UNESCO World Heritage Center (Biosphere Reserve) [4]. The Pantanal vegetation is a mosaic consisting of species of the Amazonian rainforest, Cerrado, Atlantic forest, and Bolivian Chaco, adapted to special conditions, where there is alternations of both high humidity and pronounced dryness during the time of the year [4]. The presence in the Pantanal of the traditional populations that use medicinal plants for basic health care makes this region an important field for the ethnobotanical and ethnopharmacological studies [6, 7].

Because of the fact that the Pantanal communities are relatively isolated, they have developed private lives that involved much reliance on profound knowledge of the biological cycles, utilization of natural resources, and traditional technology heritage [8].

As a result of the aforementioned, this study aimed to systematically and quantitatively evaluate the information gathered from these Pantanal communities, highlight the relevance of the ethnobotanical findings, and cite and discuss relevant literatures related to medicinal plants with greater relative importance (RI) and high informant consensus factor (ICF) values obtained in the study.

2. Materials and Methods

2.1. Study Area. For the choice of study area, literature search was conducted to identify the Pantanal region in Mato Grosso, consisting of traditional communities where such studies have not yet been conducted and/or there were no ethnobotanical survey publications. The study design was cross-sectional and was conducted between the period of November, 2009 and February, 2010. The study setting chosen was NSACD located in the Poconé municipality, Mato Grosso State, Central West of Brazil (Figure 1) with coordinates of 16° 02’ 90” S and 056° 43’ 49” W. Poconé is located within the region of Cuiabá River valley, with an altitude of 142 m, occupies a territorial area of 17,260.86 km², and of tropical climate. The mean annual temperature is 24°C (4–42°C) and the mean annual rainfall is 1,500 mm with rainy season occurring between December and February. The municipality is composed of 2 Districts (NSAC and Cangas), 5 villages, 11 settlements, 14 streets, and 72 communities (countryside) [9]. The population of NSACD is estimated to be 3,652 inhabitants, representing 11.5% of Poconé municipality [10]. The principal economic activities are mainly livestock farming, mining, and agriculture with great tourism potentials, because Poconé municipality is the gateway to the Pantanal region [9].

2.2. Consent and Ethical Approval. Authorization and ethical clearance were sought from the relevant governing (Health authority of Poconé and the National Council of Genetic Heritage of the Ministry of Environment (CGEN/MMA), Resolution 247 published in the Federal Official Gazette, in October, 2009, on access to the traditional knowledge for scientific research and Federal University of Mato Grosso and Júlio Muller Hospital Research Ethical Committees, Protocol 561/CEP-HUJM/08 authorities. Previsits were made to each community of NSACD to present the research project as well as to seek the consent of each potential informant.

2.3. Data Collection and Analysis. In this present study, sampling was done using probabilistic simple randomization and stratified sampling techniques [10, 11].

The population studied consists of inhabitants of 13 communities of NSACD, Mato Grosso State, considering an informant per family. The criteria for each informant chosen were age of 40 and above, residing in NSACD for more than 5 years (because there is large migration into the area because of the presence of ethanol producing factory).

These criteria are in line with the study objective coupled with the information gathered from the local authority [12].

In order to determine the estimated sample size (n), in this case, the number of families to be sampled per communities being considered, the following formula was utilized [11, 13]:

\[
n = \frac{N \times (1 - p)}{(N - 1) \times (d/z_{\alpha/2})^2 + p(1 - p)}.
\]

This study considered the population size of 1,179 families (N = 1, 179), confidence coefficient of 95% (z/2 = 1.96), sampling error of 0.05 (d = 0.05), a proportion of 0.5 (p = 0.5). It should be noted that the P = 0.5 was assigned due to nonexistence of previous information about this value as is usual in practice, to obtain conservative sample size which is representative at the same time.

In determining the sample size for the microarea, 5% error and 10% loss in sample were considered. To determine the sample size in each microarea, the sample size (290) was multiplied by the sampling fraction of each microarea and dividing the total number of families of the same microarea with the total number of families of all the microareas (1,179), thereby arriving at the sample sizes for each area as shown in Table 1.

The interviews were conducted with the help of 12 trained applicators, under the supervision of the respective investigator. Data collected included sociodemographic details, vernacular names of the plant species with their medicinal uses, methods of drug preparation, and other relevant information. The ethnobotanical data were organized using the Microsoft Office Access 2003 program and statistically analyzed using SPSS, version 15 for Windows (SPSS Inc., Chicago, Illinois, USA).

2.4. Plant Collection, Identification, and Herborization. The collection of plant materials were done in collaboration with the local specialists, soon after the interviews. Both indigenous and scientific plant names were compiled. The plant materials collected during the study period were herborized, mounted as herbarium voucher specimens, and deposited for taxonomic identification and inclusion in the
Table 1: Distribution of the 13 communities of Nossa Senhora Aparecida do Chumbo District.

| ID | COMMUNITY                                                                 | Total number of individuals | Total number of families | Sample fraction | Sample size |
|----|---------------------------------------------------------------------------|----------------------------|--------------------------|-----------------|-------------|
| 1  | Chumbo, Santa Helena, Os Cagados, Várzea bonita                           | 946                        | 216                      | 0.1832          | 52          |
| 2  | Canto do Agostinho, Santa Helena, Os Cagados, Várzea bonita               | 179                        | 52                       | 0.0441          | 15          |
| 3  | Furnas II, Salobra, Zé Alves                                             | 165                        | 59                       | 0.0500          | 15          |
| 4  | Campina II, Furnas I, Mundo Novo, Rodeio                                  | 279                        | 81                       | 0.0687          | 20          |
| 5  | Campina de Pedra, Imbê                                                   | 188                        | 67                       | 0.0568          | 16          |
| 6  | Barreirinho, Coetinho, Figueira                                           | 253                        | 95                       | 0.0806          | 23          |
| 7  | Bahia de Campo                                                            | 257                        | 74                       | 0.0628          | 18          |
| 8  | Agrovila, São Benedito                                                    | 184                        | 66                       | 0.0560          | 16          |
| 9  | Agroana                                                                   | 372                        | 178                      | 0.1510          | 44          |
| 10 | Bandeira, Minadouro                                                      | 248                        | 82                       | 0.0696          | 20          |
| 11 | Carretão, Deus Ajuda, Sangradouro, Pesqueiro, Varzearia                  | 216                        | 77                       | 0.0653          | 19          |
| 12 | Chafariz, Ramos, Sete Porcos, Urubamba                                   | 208                        | 67                       | 0.0568          | 16          |
| 13 | Céu Azul, Capão Verde, Morro Cortado, Passagem de Carro, Varal            | 157                        | 65                       | 0.0551          | 16          |

Total: 3,652 individual, 1,179 families, sample fraction 1.0000, sample size 290

ID = identification of the microarea.

Plant species were identified according to standard taxonomic methods, based on floral morphological characters, analytical keys, and using, where possible, samples for comparison, as well as consultations with experts and literature [6, 7, 14–19]. The plant species obtained were grouped into families according to the classification system of Cronquist [20], with the exception of the Pteridophyta and Gymnospermae. For corrections of scientific names and families, the official website of the Missouri Botanical Garden was consulted [21].

2.5. Quantitative Ethnobotany. The relative importance (RI) of each plant species cited by the informants was calculated according to a previously proposed method [22]. In order to calculate RI, the maximum obtainable by a species is two was calculated using (2) according to Oliveira et al. [23]

\[
RI = N_{CS} + N_P, \tag{2}
\]

where RI: relative importance; NCS: number of body systems. It is given by the number of body systems, treated by a species (NCS) over the total number of body system treated by the most versatile species (NCSV): NCS = NCS / NCSV; NP: number of properties attributed to a specific species.
(NPS) over the total number of properties attributed to the most versatile species (NPSV): NP = NPS/NPSV.

We sought to identify the therapeutic indications which were more important in the interviews to determine the informant consensus factor (ICF), which indicates the homogeneity of the information [23].

The ICF will be low (close to 0), if the plants are chosen randomly, or if the informants do not exchange information about their uses. The value will be high (close to 1), if there is a well defined criterion of selection in the community and/or if the information is exchanged among the informants [23].

ICF was calculated using the number of use citations in each category of plant disease (nur), minus the number of species used (ni) divided by the number of use citations in each category minus one on the basis of (3):

\[
\text{ICF} = \frac{n_{ur} - n_i}{n_{ur} - 1}. \tag{3}
\]

The citations for therapeutic purposes were classified using the 20 categories of the International Classification of Diseases and Related Health Problems, 10th edition-CID [24]: injuries, certain infectious, and parasitic diseases (I); neoplasms-tumors (II), diseases of blood and blood-forming organs and certain disorders involving the immune mechanism (III), endocrine, nutritional and metabolic diseases (IV) mental and behavioral disorders (V), nervous system (VI), diseases of eye and adnexa (VII), diseases of the ear and mastoid process (VIII), diseases of the circulatory system (IX), respiratory diseases (X), digestive diseases (XI), diseases of the skin and subcutaneous tissue (XII), diseases of the musculoskeletal system and connective tissue (XIII), genitourinary diseases (XIV), pregnancy, childbirth and (XV), certain conditions originating during the perinatal period (XVI), symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (XVII) and injury, poisoning and certain other consequences of external causes (XIX).

We selected for further discussion species that presented RI ≥ 1.5, and are in a category with high ICF. We conducted literature review using among others, the databases of Web of Science, MEDLINE, SciELO and including nonindexed works. We also searched national data bases for dissertations and theses.

### 3. Results

A total of 262 informants were interviewed, representing 7.17% of the population of NSACD, 22.22% of the population aged ≥40 years and residing in the District for over five years. Of the respondents, 69% were female and 31% male, aged 40–94 years (median 55). 68% were born in the city of Poconé, and 62% have been residents for over 20 years in the District (Table 2).

Of the 262 respondents, 259 (99.0%) reported the use of medicinal plants in self health care, with a minimum of 1 plant and a maximum of 250 plants among the female respondents and a minimum of 2 plants and a maximum of 54 among the male respondents. A total of 3,289 citations were recorded corresponding to 376 different plant species which belong to 285 genera and 102 families. Fabaceae (10.2%), Asteraceae (7.82%), and Lamaceae (4.89%) families were the most representative in this study (Table 3).

#### 3.1. Relative Importance (RI)

The RI of the species cited by 262 respondents from NSACD ranged from 0.17 to 1.87. A total of 261 species had RI ≤ 0.5; 80 species, RI from 0.51 to 1.0; 30 species, RI from 1.1 to 1.5, and 4 species with RI from 1.51 to 2.0, among the latter, three species were native to Brazil. The species with RI ≥ 1.5, were Himantanthus obovatus (Mull. Arg.) Woodson (1.87), Hibiscus sabdariffa L. (1.87), Solidago microglossa DC. (1.80), Strychnos pseudoquina A. St.-Hil. (1.73), Dorstenia brasiliensis Lam., Scoparia dulcis L., and Luehea divaricata Mart. (1.50 each), as shown in Table 4.

#### 3.2. Informant Consensus Factor (ICF)

In the disease categories according to CID, 10th ed., we observed that ICF values ranged from 0.43 to 0.77, with the exception of disease category included in CID VI (diseases of the nervous system), which was 0.13. The ICF for CID VI ranged between 0.13 and 0.78 (mean = 0.62, SD = 0.16, 95% CI: 0.53–0.70). The highest consensus value obtained was for the category related to injuries, poisoning, and some other consequences of external causes (ICF = 0.78), with 65 species and 286 citations. Three species were more common, namely, S. dulcis and S. microglossa (“Brazilian Arnica”), with 49 citations each and L. pacari (manga-brava) with 42 citations. The main ailments addressed in this category were inflammation, pain, and gastric disorders.

Out of 20 disease categories, there were citations for 18 therapeutic indications, as shown in Table 5.

### 4. Discussion

In the present study, almost all the respondents (99%) claimed to know and use medicinal plants. Surveys conducted in other countries had reported values ranging from 42% to 98% depending on the region and country of the study [25–27]. Due to the low level of knowledge of traditional medicine in national capitals, ethnobotanical surveys in many developing countries including Brazil, primarily prefer to evaluate small communities or rural hometowns, whose population having knowledge and practical experience with traditional medicine are proportionately higher (between 80 and 100%) [28–30].

The high percentage of folk knowledge of medicinal plants identified in Brazil may be due to factors such as lower influence of the contemporary urban lifestyle and the strength of cultural traditions in the rural communities [31]. In fact, with the process of industrialization and migration to the cities, a significant part of traditional culture is maintained more in the communities farther from the metropolis via oral transmission of the knowledge of CAM and family traditions. Transmission and conservation of CAM knowledge is more pronounced in Brazil due to high degree of biodiversity.

One of the most important aspects of this research is the documentation of high number of taxa (285 genera and
102 families) and species (376) mentioned by the informants as medicinal. These findings confirmed the existence of the great diversity of plants used for therapeutic purpose and preserved traditional culture, as stated by Simbo [32]. It is worth mentioning here the presence of 8 (eight) local medicinal plant expert informants/healers among the 262 respondents in this study. These local expert informants/healers account for a significant number of citations (43 to 250) in this study. In Brazil, as in other countries, rural communities have developed knowledge about the medicinal and therapeutic properties of natural resources and have contributed to the maintenance and transmission of the ethnopharmacological knowledge within the communities.

The most representative plant families are Fabaceae (10.2%), Asteraceae (7.82%), and Lamiaceae (4.89%). These results are in accordance with other ethnobotanical surveys conducted in the tropical regions [33, 34] including Brazil [19]. Furthermore, the results from our study are also in conformity with the findings of the most comprehensive ethnobotanical survey conducted by V. J. Pott and A. Pott in the Brazilian Pantanal region [19].

Featuring greater potential for bioprospecting are 231 (61.6%) species indicated for the treatment of at least two diseases, and RI between 0.17 and 1.87 (mean = 0.46, SD = 0.357, 95% CI: 0.4250–0.4973). The seven species with the highest RI were *H. obovatus* (Müll. Arg.) Woodson (15 therapeutic indications and RI = 1.87), *H. sabdariffa* L. (12 therapeutic indications and RI = 1.87); *S. microglossa* DC. (9 therapeutic indications and RI = 1.80) *S. pseudoquina* A. St. - HIl. (14 therapeutic indications and RI = 1.73) and *D. brasiliensis* Lam., *S. dulcis* L., and *L. divaricata* Mart. (12, 10, and 12 therapeutic indications respectively with RI = 1.50) (Table 4). For the sake of brevity, we will focus most of our discussion on these seven most cited medicinal plants highlighting the most important available literature on them and including *L. pacari*. It should be noted that although 146 (39%) species presented RI below 0.17, with just a single indication, they cannot be considered as of lower pharmacological potential or importance, because as Albuquerque et al. [36] have noted elsewhere, these may be species of recent introduction in the culture of the community under study but might have been validated by the customary use in other social groups.

A total of 105 different folkways, including 18 disease categories, according to Brasil [24], were codified as shown in Table 5. The highest frequencies in decreasing magnitude were indications for the treatment of pain and inflammation (10.8%), kidney disease (7.6%), and wound healing (6.8%). In part, these data can be explained by the characteristics of the informants (elderly, rural activity, low level of education, and poor sanitation at home) with higher frequency of chronic, inflammatory, and infectious diseases. In addition, the search for natural treatments for infected wounds is very common in populations of agrarian labor or menial worker as stated by Akerreta et al. [37]. As ICF values were generally close to 1.0, it may be presumed that there is certain homogeneity in knowledge of medicinal plants among the population of NSACD.

### Table 2: Distribution of the 13 communities of Nossa Senhora Aparecida do Chumbo District, Poconé, Mato Grosso, Brazil.

| ID  | Community                                      | Population | Number of individuals* | Sample fraction | Sample size | N  | Plant citations |
|-----|-----------------------------------------------|------------|------------------------|-----------------|-------------|----|----------------|
| 1   | Chumbo                                        | 946        | 216                    | 0.1832          | 52          | 50 | 827            |
| 2   | Canto do Agostinho, Santa Helena, Os Cagados, Várzea bonita | 179 | 52 | 0.0441 | 15 | 10 | 131 |
| 3   | Furnas II, Salobra, Zé Alves                  | 165        | 59                     | 0.050           | 15          | 10 | 99             |
| 4   | Campina II, Furnas I, Mundo Novo, Rodeio      | 279        | 81                     | 0.0687          | 20          | 11 | 179            |
| 5   | Campina de Pedra, Imbé                        | 188        | 67                     | 0.0568          | 16          | 12 | 173            |
| 6   | Barreirinho, Coelinho, Figueira              | 253        | 95                     | 0.0806          | 23          | 23 | 213            |
| 7   | Bahia de Campo                                | 257        | 74                     | 0.0628          | 18          | 13 | 461            |
| 8   | Agrovila, São Benedito                        | 184        | 66                     | 0.056           | 16          | 16 | 141            |
| 9   | Agroana                                       | 372        | 178                    | 0.151           | 44          | 38 | 349            |
| 10  | Bandeira, Minadouro                           | 248        | 82                     | 0.0696          | 20          | 22 | 171            |
| 11  | Carretão, Deus Ajudai, Sangradouro, Pesqueiro, Varzearia | 216 | 77 | 0.0653 | 19 | 23 | 180 |
| 12  | Chafariz, Ramos, Sete Porcos, Urubamba        | 208        | 67                     | 0.0568          | 16          | 16 | 200            |
| 13  | Céu Azul, Capão Verde, Morro Cortado, Passagem de Carro, Varal | 157 | 65 | 0.0551 | 16 | 18 | 165 |
|     |                                               | 3,652      | 1,179                  | 1.000           | 290         | 262 | 3,289 |

ID: Identification of the microarea; N: Sample size; *Informants with age ≥ 40 years and period of residing ≥ 5 years.

### 4.1. Literature Survey and Discussions on the Selected Species with Higher Relative Importance. *Himatanthus obovatus*, var. *obovatus* had the highest relative importance, being cited for 13 different ailments that fall into 11 categories of CID, 10th ed. with a total of 29 citations. The most commonly mentioned of these indications for this plant were its...
Table 3: Relation of the relative importance of the plant species mentioned by informants of Nossa Senhora Aparecida do Chumbo District, Poconé, Mato Grosso, Brazil.

| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-----------------------------|-------------|-----|----|----|
| 1. ACANTHACEAE |               |             |                             |             |     |    |    |
| 1.1. Justicia pectoralis Jacq. | Anador | pain, fever, laxative, and muscle relaxant | Infusion (I) | 36 2 3 0.40 |
| 2. ADOXACEAE |               |             |                             |             |     |    |    |
| 2.1. Sambucus australis Cham. & Schltdl. | Sabugueiro | Fever and measles | Infusion (I, E) | 24 2 2 0.33 |
| 3. ALISMATACEAE |               |             |                             |             |     |    |    |
| 3.1. Echinodorus macrophyllus (Kuntze.) Micheli | Chapéu-de-couro | blood cleanser, stomach, rheumatism, and kidneys | | 43 4 4 0.67 |
| 4. AMARYLLIDACEAE |               |             |                             |             |     |    |    |
| 4.1. Allium cepa L. | Cebola | wound healing | Infusion (I) | 1 1 1 0.17 |
| 4.2. Allium fistulosum L. | Cebolinha | Flu | Infusion (I) | 1 1 1 0.17 |
| 4.3. Allium sativum L. | Alho | hypertension | Infusion (I) | 7 1 1 0.17 |
| 5. AMARANTHACEAE |               |             |                             |             |     |    |    |
| 5.1. Alternanthera brasiliana (L.) Kuntze | Terramicina | wound healing, itching, diabetes, pain, bone fractures, throat, flu, inflammation uterine, and relaxative muscular | Infusion (I, E) | 41 6 9 1.20 |
| 5.2. Alternanthera dentata(Moench) Stuchlik ex R.E. Fr. | Ampicilina | wound healing and kidneys muscular relaxative | Infusion (I, E) | 7 2 2 0.33 |
| 5.3. Alternanthera ficoide (L.) P. Beauv. | Doril | muscular relaxative | Infusion (I, E) | 3 1 1 0.17 |
| 5.4. Amaranthus aff. viridis L. | Caruru-de-porco | wound healing, pain, and kidneys | Infusion (I) | 4 3 3 0.50 |
| 5.5. Beta vulgaris L. | Beterraba | anemia | Infusion (I) | 1 1 1 0.17 |
| 5.6. Celosia argentea L. | Crista-de-galo | kidneys | Infusion (I) | 5 3 3 0.50 |
| 5.7. Chenopodium ambrosioides L. | Erva-de-santamaria | wound healing, heart, diabetes, bone fractures, flu, kidneys, cough, and worms | Infusion (I, E) | 102 7 8 1.23 |
| 5.8. Pfaaffia glomerata (Spreng.) Pedersen | Ginseng-brasileiro | Obesity | Infusion (I) | 2 1 1 0.17 |
| 6. ANACARDIACEAE |               |             |                             |             |     |    |    |
| 6.1. Anacardium humile A. St.– Hil. | Cajuzinho-do-campo | diabetes, dysentery, and hepatitis abortive, wound healing, cholesterol, teeth, blood cleanser, diabetes, diarrhea, dysentery, and pain | Infusion (I, E) | 5 3 3 0.50 |
| 6.2. Anacardium occidentale L. | Cajueiro | flu, hemorrhoids, and cough | Infusion (I, E) | 30 6 9 1.20 |
| 6.3. Astronium fraxinifolium Schott ex Spreng | Gonçaleiro | | Infusion and maceration (I, E) | 8 3 3 0.50 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|---------------|----------------|-------------|------------------------------|-------------|-----|----|----|
| 6.4. *Mangifera indica* L. | Mangueira | Bronchitis, flu, and cough anemia, bladder bronchitis cancer, wound healing, blood cleanser, bone fractures, hernia, uterine inflammation, muscular relaxative, and cough | Infusion and maceration (I, E) | 11 2 3 | 0.40 |
| 6.5. *Myracrodruon urundeuva* (Allemão) Engl. | Aroeira | scabies | Infusion, maceration, and decoction (I, E) | 84 7 11 | 1.43 |
| 6.6. *Spondias dulcis* Parkinson | Caja-manga | wound healing and hepatitis | Infusion (I, E) | 2 1 1 | 0.17 |
| 6.7. *Spondias purpurea* L. | Seriguela | | Infusion (I, E) | 2 2 2 | 0.33 |
| 7. ANNONACEAE | | | | | |
| 7.1. *Annona cordifolia* Poepp. ex Maas & Westra | Araticum-abelha | Diabetes and bone fractures diabetes | Infusion and decoction (I, E) | 3 2 2 | 0.33 |
| 7.2. *Annona crassiflora* Mart. | Graviola | | Infusion (I, E) | 11 1 1 | 0.17 |
| 7.3. *Duguetia furfuracea* (A. St.- Hil.) Saff. | Beladona-do-cerrado | pain | Infusion (I, E) | 1 1 1 | 0.17 |
| 8. APIACEAE | | | | | |
| 8.1. *Coriandrum sativum* L. | Coentro | flu | Infusion (I) | 1 1 1 | 0.17 |
| 8.2. *Eryngium aff. pristis* Cham. & Schltdl. | Lingua-de-tucano | Tooth and muscular relaxative | Infusion (I) | 3 2 2 | 0.33 |
| 8.3. *Petroselinum crispum* ((Mill) Fuss | Salsinha | flu | Infusion (I) | 1 1 1 | 0.17 |
| 8.4. *Pimpinella anisum* L. | Erva-doce | pain soothing, constipation, and kidneys | Infusion (I, E) | 12 3 3 | 0.50 |
| 9. APOCYNACEAE | | | | | |
| 9.1. *Aspidosperma polyneuron* (Müll.) Arg. | Péroba | Stomach and laxative gastritis | Infusion and decoction (I, E) | 5 1 2 | 0.23 |
| 9.2. *Aspidosperma tomentosum* Mart. | Guatambu | mumps fever and kidneys | Infusion (I) | 4 1 1 | 0.17 |
| 9.3. *Catharanthus roseus* (L.) G. Don | Boa-noite | Diabetes and pain | Infusion (I) | 8 3 3 | 0.50 |
| 9.4. *Geissospermum laeve* (Vell.) Miers | Pau-tenente | | Infusion (I) | 6 2 2 | 0.33 |
| 9.5. *Hancornia speciosa* var. *gardneri* (A. DC.) Müll. Arg. | Mangavamança | itching, diarrhea, and stomach anemia, wound healing, cholesterol, blood cleanser, pain, nose bleeding, hypertension, uterine inflammation, labyrinthitis, pneumonia, relaxative muscular, worms, and vitiligo | Decoction and maceration (I, E) | 8 3 3 | 0.50 |
| 9.6. *Himatanthus obovatus* (Müll. Arg.) Woodson | Angélica | | Maceration (I) | 45 10 13 | 1.87 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-----------------------------|-------------|-----|----|----|
| 9.7. *Macrocephalia longiflora* (Desf.) Müll. Arg. | Velame-do-campo | hearth, blood cleanser, stroke, diuretic, pain, throat, muscular relaxative, and vitiligo | Decoction (I) | 5 6 8 1.13 |
| 9.8. *Macrocephalia velame* (A. St.-Hil.) Müll. Arg. | Velame-branco | flu | Decoction (I) | 73 1 1 0.17 |
| 10. ARACEAE | | | | |
| 10.1 *Dieffenbachia picta* Schott | Comigon-ninguém-pode | pain | Maceration (E) | 2 1 1 0.17 |
| 10.2 *Dractentium sp.* | Jararaquinha | snakebite | Infusion (I) | 10 1 1 0.17 |
| 11. ARECACEAE | | | | |
| 11.1 *Acrocomia acauleata* Lodd. ex. Mart. | Bocaiuveira | heart, hepatitis, hypertension, and kidneys | Decoction and syrup (I) | 20 4 4 0.67 |
| 11.2 *Cocos nucifera* L. | Cocó-da-bahia | kidneys | Maceration (I) | 2 1 1 0.17 |
| 11.3 *Orbignya phalerata* Mart. | Babaçu | inflammation | Decoction (I) | 8 1 1 0.17 |
| 11.4 *Syagrus oleracea* (Mart.) Becc. | Guaraboba | kidneys | Maceration (I) | 2 1 1 0.17 |
| 12. ARISTOLOCHIACEAE | | | | |
| 12.1 *Aristolochia cymbifera* Mart & Zucc. | Cipó-de-mil-homem | dengue, blood cleanser, stomach, kidneys, and digestive | Infusion (I) | 11 4 5 0.73 |
| 12.2 *Aristolochia esperanzae* Kuntze | Papo-de-peru | wound healing | Infusion (I) | 3 1 1 0.17 |
| 13. ASTERACEAE | | | | |
| 13.1 *Acanthospermum australe* (Loefl.). Kuntze | Carrapicho, beijo-de-boi | colic, kidneys, and runny cough | Infusion (I) | 31 2 3 0.40 |
| 13.2 *Acanthospermum hispidum* DC. | Chifre-de-garrotinho | Gonorrhea and kidneys | Infusion (I) | 5 2 3 0.40 |
| 13.3 *Achillea millefolium* L. | Dipirona, Novalgina, | pain, flu, and muscular relaxative | Infusion (I) | 13 3 4 0.57 |
| 13.4 *Achyrocline satureioides* (Lam.) DC. | Macela-do-campo | diarrhea, pain, stomach, gastritis, flu, and hypertension | Infusion (I) | 13 5 6 0.90 |
| 13.5 *Ageratum conyzoides* L. | Mentrasoto | in pregnant woman, rheumatism, and cough | Infusion (I) | 18 5 6 0.90 |
| 13.6 *Artemisia vulgaris* L. | Artemisia | insomnia | Infusion (I) | 3 1 1 0.17 |
| 13.7 *Artemisia absinthium* L. | Losna, nor-vômica | pain, stomach, liver, hernia, and muscular relaxative | Infusion (I) | 39 4 5 0.73 |
| 13.8 *Baccharis trimera* (Less.) DC. | Carqueja | diabetes, diuretic, stomach, flu, and obesity | Infusion (I) | 31 5 7 0.97 |
| 13.9 *Bidens pilosa* L. | Picão-preto | hepatitis, enteric, and kidneys | Infusion (I, E) | 20 3 3 0.50 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-----------------------------|-------------|-----|----|----|
| 13.10. Brickellia brasiliensis (Spreng.) B.L. Rob. | Arnica-do-campo | wound healing, uterine inflammation, and kidneys | Infusion (I) | 13 2 3 0.40 |
| 13.11. Calendula officinalis L. | Calêndula | anxiety muscular | Infusion (I) | 6 1 1 0.17 |
| 13.12. Centratherum aff. punctatum Cass. | Perpétua-roxa | soothing colic, muscular | Infusion (I) | 3 2 2 0.33 |
| 13.13. Chamomilla recutita (L.) Rauschert. | Camomila | pain, stomach, fever, and flu | Infusion (I) | 78 5 6 0.90 |
| 13.14. Chaptalia integerrima (Vell.) Burkart | Lingua-de-vaca | worms colic, pain, bone fractures, pain, bone fractures, and kidneys | Infusion (I) | 6 1 1 0.17 |
| 13.15. Chromolaena odorata (L.) R.M. King & H. Rob | Cruzeirinho | cancer itching, blood cleanser, leukemia, and worms | Infusion (I) | 7 3 4 0.57 |
| 13.16. Conyza bonariensis (L.) Cronquist | Voadeira | blood cleanser, and muscular | Infusion (I) | 15 4 5 0.73 |
| 13.17. Elephantopus mollis Kunth | Sussuaiá | pain, and uterine inflammation | Infusion (I) | 11 2 3 0.40 |
| 13.18. Emilia fosbergii Nicolson | Serralha | conjunctivitis wound healing, stomach, bone fractures, and skin | Infusion (I) | 6 1 1 0.17 |
| 13.19. Eremanthus exsucus (DC.) Baker | Bácimo-do-campo | wound healing, muscular relaxative, and kidneys | Infusion and maceration (I, E) | 11 3 4 0.57 |
| 13.20. Eupatorium odoratum L. | Arnicão | bronchitis cough diabetes | Infusion (I) | 14 2 2 0.33 |
| 13.21. Mikania glomerata Spreng. | Guaco | bronchitis cough | Infusion (I) | 14 2 2 0.33 |
| 13.22. Mikania hirsutissima DC. | Cipó-cabeludo | blood cleanser and diabetes | Infusion (I) | 10 1 1 0.17 |
| 13.23. Pectis jangadensis S. Moore | Erva-do-carregador | Hepatitis and kidneys | Infusion (I) | 4 2 2 0.33 |
| 13.24. Porophyllum ruderale (Jacq.) Cass. | Picão-branco | wound healing, blood cleanser, pain, bone fractures, hypertension, uterine inflammation, muscular relaxative, kidneys, worms, pain, stomach, hypertension, pneumonia, constipation, and relaxative muscular | Infusion (I) | 11 2 2 0.33 |
| 13.25. Solidago microglossa DC. | Arnica-brasileira | wound healing, blood cleanser, pain, bone fractures, hypertension, uterine inflammation, muscular relaxative, kidneys, worms, pain, stomach, hypertension, pneumonia, constipation, and relaxative muscular | Infusion (I, E) | 82 8 15 1.80 |
| 13.26. Spilanthes acmella (L.) Murray | Jambú | liver | Infusion (I) | 5 1 1 0.17 |
| 13.27. Tagetes minuta L. | Cravo-de-defunto | Dengue and flu | Infusion (I) | 3 2 2 0.33 |
| Family/species                  | Vernacular name               | Application                                                                 | Preparation (administration) | Uses listed | NCS | NP | RI  |
|--------------------------------|-------------------------------|------------------------------------------------------------------------------|-------------------------------|-------------|-----|----|-----|
| 13.28. *Taraxacum officinale* L. | Dente-de-leão                 | blood cleanser alcoholism, stomach, kidney, and constipation                | Infusion (I)                  | 18          | 1   | 1  | 0.17|
| 13.29. *Tithonia diversifolia* (Hemsl.) A. Gray | Flor-da-amazônia           | cancer stomach and liver blood cleanser, fever, flu, pneumonia, cold, and cough | Infusion (I)                  | 16          | 3   | 3  | 0.50|
| 13.30. *Vernonia condensata* Baker | Figatil-caferana             |                                                                               | Infusion (I)                  | 48          | 2   | 3  | 0.40|
| 13.31. *Vernonia scabra* Pers. | Assa-peixe                   |                                                                               | Infusion and syrup (I)        | 38          | 2   | 7  | 0.67|
| 13.32. *Zinnia elegans* Jacq. | Jacinta                      |                                                                               | Infusion (I)                  | 1           | 1   | 1  | 0.17|
| 14. BERBERIDACEAE               |                               |                                                                               |                               |             |     |    |     |
| 14.1. *Berberis laurina* Billb. | Raiz-de-são-joão             | blood cleanser and diarrhea                                                   | Decoction and bottle (I, E)   | 6           | 2   | 2  | 0.33|
| 15. BIGNONIACEAE                |                               |                                                                               |                               |             |     |    |     |
| 15.1. *Anemopaegma arvense* (Vell.) Stelfeld & J.F. Souza | Verga-teso, Alécrim-do-campo, Catuaba | anxiety soothing kidneys                                                      | Decoction and bottle (I, E)   | 13          | 2   | 3  | 0.40|
| 15.2. *Arrabidaea chica* (Humb. & Bonpl.) B. Verl. | Crajirú                       | wound healing and blood cleanser fever, flu, relaxative muscular, and worms  | Infusion (I)                  | 6           | 2   | 2  | 0.33|
| 15.3. *Cybistax antisypilitica* (Mart.) Mart. | Pé-de-anta                   |                                                                               | Infusion (I)                  | 13          | 4   | 4  | 0.67|
| 15.4. *Jacaranda caroba* (Vell.) A. DC. | Caroba                       | wound healing allergy cancer wound healing, blood cleanser, diabetes, leprosy, hemorragia no nariz, inflammation uterina, and kidneys | Decoction and bottle (I, E)   | 3           | 1   | 1  | 0.17|
| 15.5. *Jacaranda decurrens* Cham. | Carobinha                    |                                                                               | Decoction and bottle (I, E)   | 94          | 8   | 9  | 1.40|
| 15.6. *Tabebuia aurea* (Silva Manso) B. & H. f. ex S. Moore | Ipê-amarelo                  | worms                                                                        | Decoction and bottle (I)      | 2           | 1   | 1  | 0.17|
| 15.7. *Tabebuia caraiba* (Mart.) Bureau | Para-tudo                    | prostate cancer anemia, bronchitis cancer blood cleanser, diarrhea, pain, stomach, cough, and worms | Decoction and bottle (I, E)   | 67          | 6   | 10 | 1.27|
| 15.8. *Tabebuia impetiginosa* (Mart. ex DC.) Standl. | Ipê-roxo                     | prostate cancer cough                                                         | Decoction and bottle (I)      | 8           | 2   | 2  | 0.33|
| 15.9. *Tabebuia serratifolia* Nicholson | Piúva                        | prostate cancer                                                              | Decoction and bottle (I, E)   | 3           | 1   | 1  | 0.17|
| 15.10. *Zeyhera digitalis* (Vell.) Hocn. | Bolsa-de-pastor              | Stomach                                                                       | Decoction and bottle (I)      | 9           | 1   | 1  | 0.17|
| 16. BIXACEAE                    |                               |                                                                               |                               |             |     |    |     |
| 16.1. *Bixa orellana* L.        | Urucum                       | cholesterol, stroke, bone fractures, and measles                             | Infusion (I)                  | 11          | 4   | 4  | 0.67|
| Family/species | Vernacular name      | Application                                      | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------------|--------------------------------------------------|------------------------------|-------------|-----|----|----|
| 16.2. Cochlospermum regium (Schrank) Pilg. | Algodozinho-do-campo | blood cleanser, stomach, bone fractures, inflammation uterina, syphilis, vitiligo, gonorrhea, and ringworm | Infusion (I)                 | 37          | 6   | 9  | 1.20 |
| 17. BOMBACACEAE |                      |                                                  |                              |             |     |    |    |
| 17.1. Pseudobombax longiflorum (Mart. Et Zucc.) Rob. | Embirici-du-cerrado | pneumonia, cough, and tuberculosis                 | Infusion (I)                 | 17          | 3   | 3  | 0.50 |
| 17.2. Eriotheca candolleana (K. Schum.) | Catuaba               | prostate cancer                                   | Infusion (I)                 | 1           | 1   | 1  | 0.17 |
| 18. BORAGINACEAE |                      |                                                  |                              |             |     |    |    |
| 18.1. Cordia insignis Cham. | Calção-de-velho       | cough                                             | Infusion (I)                 | 5           | 1   | 1  | 0.17 |
| 18.2. Heliotropium filiforme Lehm. | Sete-sangria          | thooth, blood cleanser, hypertension, and tuberculosis wound healing, heart, throat, and obesity | Infusion (I)                 | 43          | 4   | 4  | 0.67 |
| 18.3. Symphytum asperrimum Donn ex Sims | Confrei               | heart, throat, and obesity                        | Infusion (I, E)              | 10          | 4   | 4  | 0.67 |
| 19. BRASSICACEAE |                      |                                                  |                              |             |     |    |    |
| 19.1. Nasturtium officinale R. Br. | Agrião               | bronchitis                                        | Infusion (I)                 | 2           | 1   | 1  | 0.17 |
| 20. BROMELIACEAE |                      |                                                  |                              |             |     |    |    |
| 20.1. Ananas comosus (L.) Merr. | Abacaxi               | diuretic and cough                                | Infusion (I)                 | 9           | 2   | 2  | 0.33 |
| 20.2. Bromelia balansae Mez | Gravatá               | cough and bronhitis                               | Infusion (I)                 | 2           | 2   | 2  | 0.33 |
| 21. BURSERACEAE |                      |                                                  |                              |             |     |    |    |
| 21.1. Commiphora myrrha (T. Nees) Engl. | Mirra                | Menstruation and rheumatism                       | Infusion (I)                 | 3           | 2   | 2  | 0.33 |
| 21.2. Protium heptaphyllum (Aubl.) Marchand | Almésica               | blood cleanser, stroke, pain, muscular relaxative, rheumatism, and cough | Infusion (I)                 | 23          | 3   | 6  | 0.70 |
| 22. CACTACEAE |                      |                                                  |                              |             |     |    |    |
| 22.1. Cactus alatus Sw. | Cacto               | Colic and guard delivery                          | Infusion (I, E)              | 10          | 2   | 2  | 0.33 |
| 22.2. Opuntia sp. | Palma                | column anemia                                     | Infusion (I)                 | 2           | 1   | 1  | 0.17 |
| 22.3. Pereskia aculeata Mill. | Oro-pro-nobis        | anemia                                            | Infusion (I)                 | 2           | 1   | 1  | 0.17 |
| 23. CAPPARACEAE |                      |                                                  |                              |             |     |    |    |
| 23.1. Crataeva tapia L. | Cabaça               | cough                                             | Infusion (I)                 | 2           | 1   | 1  | 0.17 |
| 23.2. Cleome affinis DC. | Mussambé            | diarrhea                                          | Infusion (I)                 | 1           | 1   | 1  | 0.17 |
| 24. CARICACEAE |                      |                                                  |                              |             |     |    |    |
| 24.1. Carica papaya L. | Mamoeiro             | worms, thooth, stomach, hepatitis, muscular relaxative, and cough | Infusion (I)                 | 17          | 4   | 6  | 0.80 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|---------------|----------------|-------------|-------------------------------|-------------|-----|----|----|
| 25. CARYOCARACEAE |              |             |                               |             |     |    |    |
| 25.1. Caryocar brasiliense A. St.-Hil. | Pequizeiro | diabetes, hypertension, labyrinthitis, and obesity | Infusion (I) | 11 4 4 0.67 |
| 26. CELASTRACEAE |              |             |                               |             |     |    |    |
| 26.1. Maytenus ilicifolia Mart. ex Reissek | Espinheira-santa | uric acid, bronchitis diarrhea, stomach, gastritis, flu, and cough | Infusion (I) | 8 5 7 0.97 |
| 27. CECROPIACEAE |              |             |                               |             |     |    |    |
| 27.1. Cecropia pachystachya Trécul | Embaúba | cholesterol, blood cleanser, diabetes, pain, hypertension, leukemia, pneumonia, kidneys, and cough | Infusion (I) | 38 6 9 1.20 |
| 28. CLUSIACEAE |              |             |                               |             |     |    |    |
| 28.1. Kielmeyera aff. grandiflora (Wawra) Saddi | Pau-santo | anemia | Infusion (I) | 1 1 1 0.17 |
| 29. COMBRETACEAE |              |             |                               |             |     |    |    |
| 29.1. Terminalia argentea Mart. | Pau-de-bicho | itching, diabetes, and cough | Infusion (I, E) | 8 3 3 0.50 |
| 29.2. Terminalia catappa L. | Sete-copa | conjunctivitis | Infusion (I) | 2 1 1 0.17 |
| 30. COMMELINACEAE |              |             |                               |             |     |    |    |
| 30.1. Commelina benghalensis L. | Capoeraba | hemorrhoids wound healing and conjunctivitis | Infusion (I) | 1 1 1 0.17 |
| 30.2. Commelina nudiflora L. | Erva-de-santaluze | Infusion (I) | 3 2 2 0.33 |
| 30.3. Dichorisandra hexandra (Aubl.) Standl. | Cana-de-macaco | flu, hypertension, and kidneys | Infusion (I) | 1 3 3 0.50 |
| 31. CONVOLVULACEAE |              |             |                               |             |     |    |    |
| 31.1. Cuscuta racemosa Mart. | Cipó-de-chumbo | pain | Infusion (I) | 1 1 1 0.17 |
| 31.2. Ipomoea batatas (L.) Lam. | Batata-doce | hearth | Infusion (I) | 1 1 1 0.17 |
| 31.3. Ipomoea (Desr.) Roem. & asarifolia Schult | Batatinha-do-brejo | Stomach and worms | Infusion (I) | 4 2 2 0.33 |
| 32. COSTACEAE |              |             |                               |             |     |    |    |
| 32.1. Costus spicatus (Jacq.) Sw. | Caninha-do-brejo | bladder diuretic, inflammation uterina, muscular relaxative, and kidneys | Infusion (I) | 40 3 5 0.63 |
| 33. CRASSULACEAE |              |             |                               |             |     |    |    |
| 33.1. Kalanchoe pinnata (Lam.) Pers. | Folha-da-fortuna | allergy, bronchitis blood cleanser, and flu | Infusion and juice (I) | 11 2 4 0.47 |
| 34. CUCURBITACEAE |              |             |                               |             |     |    |    |
| 34.1. Cayaponia tayuya (Cell.) Cogn. | Raiz-de-bugre | blood cleanser, pain, and hepatitis | Infusion (I) | 17 2 3 0.40 |
| 34.2. Citrullus vulgaris Schrad. | Melância | bladder colic | Infusion (I) | 2 1 2 0.23 |
| 34.3. Cucumis anguria L. | Máixixe | anemia | Infusion (I) | 1 1 1 0.17 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|---------------|----------------|-------------|------------------------------|-------------|-----|----|----|
| 34.4. *Cucumis sativus* L. | Pepino | Hypertension | Maceration (I) | 1 | | | |
| 34.5. *Cucurbita maxima* Duchesne ex Lam. | Abóbora | Pain and worms | Infusion (I) | 4 | 2 | 2 | 0.33 |
| 34.6. *Luffa* sp | Bucha | Anemia and kidneys | Infusion (I) | 7 | 2 | 2 | 0.33 |
| 34.7. *Momordica charantia* L. | Melão-de-são-caetano | Bronchitis, dengue, stomach, fever, flu, hepatitis, swelling in pregnant woman, malaria, muscular relaxative, and worms | Infusion (I) | 50 | 6 | 10 | 1.27 |
| 34.8. *Silomnata brasiliensis* (Cogn.) Baill. | Taiúá | Ulcer | Infusion (I) | 6 | 1 | 1 | 0.17 |
| **35. CYPERACEAE** | | | | | | | |
| 35.1. *Bulbostylis capillaris* (L.) C.B. Clarke | Barba-de-bode | Diuretic, stomach, kidneys, and worms | Infusion (I) | 12 | 3 | 4 | 0.57 |
| 35.2. *Cyperus rotundus* L. | Tiririca | Pain | Infusion (I) | 1 | 1 | 1 | 0.17 |
| **36. DILLENIACEAE** | | | | | | | |
| 36.1. *Curatella americana* L. | Lixeira | Wound healing, colic, diarrhea, flu, kidneys, and cough | Infusion (I, E) | 24 | 5 | 6 | 0.90 |
| 36.2. *Davilla elliptica* A. St.-Hil. | Lixeira-de-cipó | Kidneys | Infusion (I) | 3 | 1 | 1 | 0.17 |
| 36.3. *Davilla nitida* (Vahl.) Kubitzki | Lixeirinha | Delivery help, liver, hernia, and kidneys | Infusion (I) | 10 | 3 | 4 | 0.57 |
| **37. DIOSCOREACEAE** | | | | | | | |
| 37.1. *Dioscorea* sp. | Cará-do-cerrado | Boil | Infusion (I) | 25 | 1 | 1 | 0.17 |
| 37.2. *Dioscorea trifida* L. | Cará | Blood cleanser | Infusion (I) | 6 | 1 | 1 | 0.17 |
| **38. EBENACEAE** | | | | | | | |
| 38.1. *Diospyros hispida* A. DC. | Olho-de-boi | Pain and leprosy | Infusion (I) | 5 | 2 | 2 | 0.33 |
| **39. EQUISETACEAE** | | | | | | | |
| 39.1. *Equisetum arvense* L. | Cavalphinha | Gastritis and kidneys | Infusion (I) | 8 | 2 | 2 | 0.33 |
| **40. ERYTHROXYLACEAE** | | | | | | | |
| 40.1. *Erythroxylum aff. Daphnites Mart.* | Vasoura-de-bruxa | Syphilis | Infusion (I) | 1 | 1 | 1 | 0.17 |
| **41. EUPHORBIACEAE** | | | | | | | |
| 41.1. *Croton antisypiliticus* Mart. | Curraleira | Hypertension and uterine inflammation | Infusion (I) | 6 | 2 | 2 | 0.33 |
| 41.2. *Croton sp.* | Curraleira-branca | Uterine inflammation | Infusion (I) | 3 | 1 | 1 | 0.17 |
| 41.3. *Croton urucurana* Baill. | Sangra-d’água | Cancer prostate cancer healing, diabetes, stomach, gastritis, uterine inflammation, kidneys, and ulcer | Maceration (I) | 37 | 5 | 9 | 1.10 |
| 41.4. *Euphorbia aff. Thymifolia* L. | Trinca-pedra | Kidneys | Infusion (I) | 3 | 1 | 1 | 0.17 |
| 41.5. *Euphorbia prostrata* Aiton | Fura-pedra | Kidneys | Infusion (I) | 4 | 1 | 1 | 0.17 |
Table 3: Continued.

| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|------------------------------|-------------|-----|----|----|
| 41.6. Euphorbia tirucalli L | Aveloz | cancer uterine inflammation | Maceration (I) | 3 2 2 | 0.33 |
| 41.7. Jatropha sp. | Capa-rosa | diabetes | Infusion (I) | 10 1 1 | 0.17 |
| 41.8. Jatropha elliptica (Poh) Oken | Purga-de-lagarto | allergy | Infusion (I) | 38 1 1 | 0.17 |
| 41.9. Jatropha aff. Gossypifolia L. | Pinhão-roxo | wound healing, prostrate cancer, itching, blood cleanser, stroke, snakebite, syphilis, worms, and vitiligo | Maceration(I, E) | 7 6 10 | 1.27 |
| 41.10. Jatropha urens L. | Cansansão | diabetes | Maceration (I, E) | 6 1 1 | 0.17 |
| 41.11. Manihot esculenta Crantz | Mandioaca-braba | itching | Maceration (I, E) | 2 1 1 | 0.17 |
| 41.12. Manihot utilissima Pohl. | Mandioaca | itching | Maceration (I, E) | 7 1 1 | 0.17 |
| 41.13. Ricinus communis L. | Mamona | wound healing and blood cleanser | Maceration (I, E) | 8 2 2 | 0.33 |
| 41.14. Synadenium grantii Hook. f. | Cancerosa | gastritis, prostrate cancer stomach, and pneumonia | Maceration (I, E) | 12 3 4 | 0.57 |

42. FABACEAE

| 42.1. Acsomium dasycarpum (Volgel) Yakovlev | Cinco-folha | column, blood cleanser, pain, and kidneys | Infusion (I) | 19 2 4 | 0.47 |
| 42.2. Acsomium subelegans (Mohlenbr.) Yakovlev | Quinagensiana | wound healing, blood cleanser, pain, liver, uterine inflammation, delivery relapse, and kidneys | Decoction (I) | 16 5 7 | 0.97 |
| 42.3. Albizia niopoides (Spr. ex Benth.) Burkart. | Angico-branco | bronchitis | Decoction (I) | 1 1 1 | 0.17 |
| 42.4. Amburana cearensis (Allemão) A. C. Sm. | Imburana | cough asthma, wound healing, expectorant, uterine inflammation, pneumonia, and urinary tract infections | Decoction (I) | 13 1 1 | 0.17 |
| 42.5. Anadenanthera colubrina (Vell.) Brenan | Angico | urticaria, uterine inflammation, pneumonia, and pain | Decoction (I) | 12 5 6 | 0.90 |
| 42.6. Andira anthelminthica Bentham. | Angelim | diabetes | Decoction (I) | 3 1 1 | 0.17 |
| 42.7. Bauhinia variegata L. | Unha-de-boi | kidneys | Decoction (I) | 4 1 1 | 0.17 |
| 42.8. Bauhinia ungulata L. | Pata-de-vaca | diabetes | Infusion (I) | 11 1 1 | 0.17 |
| 42.9. Bauhinia glabra Jacq. | Cipó-tripa-de-galinha | diarrhea, dysentery, and pain | Infusion (I) | 7 3 3 | 0.50 |
| 42.10. Bauhinia rubiginosa Bong. | Tripa-de-galinha | kidneys | Infusion (I) | 2 1 1 | 0.17 |
| 42.11. Bauhinia rufa (Bong.) Steud. | Pata-de-boi | diabetes | Infusion (I) | 1 1 1 | 0.17 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-------------------------------|-------------|-----|----|----|
| 42.12. *Bowdichia virgilioides* Kunth | Sucupira | blood cleanser, paom, stomach, nose bleeding, cough, and worms | Bottle (I) | 20 | 4 | 6 | 0.80 |
| 42.13. *Caesalpinia ferrea* Mart. | Jucá | wound healing, stomach, bone fractures, and inflammation of uterine | Maceration (I, E) | 15 | 3 | 4 | 0.57 |
| 42.14. *Cajanus bicolor* DC. | Feijão-andu | diarrhea, stomach and worms constipation, pain, fever, uterine inflammation, and labyrinthitis | Infusion (I) | 8 | 2 | 3 | 0.40 |
| 42.15. *Cassia desvauxii* Collad. | Sene | constipation, pain, fever, uterine inflammation, and labyrinthitis | Infusion (I) | 18 | 4 | 5 | 0.73 |
| 42.16. *Chamaecrista desvauxii* (Collad.) Killip | Sene-do-campo | constipation, blood cleanser, pain, and fever | Infusion (I) | 10 | 2 | 4 | 0.47 |
| 42.17. *Copaifera* sp. | Pau-d’óleo | wound healing, kidneys, ulcer bronchitis | Infusion (I) | 8 | 3 | 3 | 0.50 |
| 42.18. *Copaifera langsdorffii* var. *glabra* (Vogel) Benth. | Copaiba | prostate cancer stroke, pain, throat, and tuberculosis | Maceration and syrup (I) | 13 | 5 | 6 | 0.90 |
| 42.19. *Copaifera marginata* Benth. | Guaranazinho | ulcer bladder itching, diarrhea, pain, hepatitis, and kidneys | Infusion (I) | 4 | 1 | 1 | 0.17 |
| 42.20. *Desmodium incanum* DC. | Carrapicho | bronchitis wound healing, pain, flu, hypertension, pneumonia, rheumatism, cough, and worms | Infusion (I) | 18 | 5 | 6 | 0.90 |
| 42.21. *Dimorphandra mollis* Benth. | Fava-de-santo-inácio | | Infusion (I) | 21 | 6 | 9 | 1.20 |
| 42.22. *Dioecia latifolia* Benth. | Fruta-olho-de-boi | stroke | Infusion (I) | 3 | 1 | 1 | 0.17 |
| 42.23. *Dioecia violacea* Mart. Zucc. | Coronha-de-boi | osteoporosis stroke bronchitis cicatrizing, diarrhea, dysentery, pain, throat, flu, snakebite, and cough column, pain, bone fractures, and kidneys | Infusion (I) | 6 | 2 | 2 | 0.33 |
| 42.24. *Dipteryx alata* Vogel | Cumbarú | | Infusion (I) | 43 | 4 | 9 | 1.00 |
| 42.25. *Galactia glaucescens* Kunth | Três-folhas | | Infusion (I) | 8 | 4 | 4 | 0.67 |
| 42.26. *Hymenaea courbaril* L. | Jatobá-mirim | blader bronchitis flu, pneumonia, and cough | Syrup and decoction (I) | 36 | 3 | 5 | 0.63 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|------------------------------|-------------|-----|----|----|
| 42.27. *Hymenaea stigonocarpa* Mart. ex Hayne | Jatoba-do-cerrado | bronchitis, prostate cancer, pain, fertilizer, flu, and cough | Syrup and decoction (I) | 31 5 6 0.90 |
| 42.28. *Indigofera suffruticosa* Mill. | Anil | ulcer | Infusion (I) | 2 1 1 0.17 |
| 42.29. *Inga vera* Willd. | Ingá | Laxative and kidneys | Infusion (I) | 5 2 2 0.33 |
| 42.30. *Machaerium hirtum* (Vell.) Stellfeld | Espinheira-santa-nativa | ulcer | Infusion (I) | 2 1 1 0.17 |
| 42.31. *Melilotus officinalis* (L.) Pall. | Trevo-cheiroso | bone fractures and thyroid | Infusion (I) | 5 2 2 0.33 |
| 42.32. *Mimosa debilis* var. *vestita* (Benth.) Barneby | Dorme-dorme | soothing | Infusion (I) | 2 1 1 0.17 |
| 42.33. *Mucuna pruriens* (L.) DC. | Macuna | stroke | Infusion (I) | 2 1 1 0.17 |
| 42.34. *Peltophorum dubium* (Spreng.) Taub. | Cana-fistula | gastritis | Infusion (I) | 5 1 1 0.17 |
| 42.35. *Platycyamus regnellii* Benth. | Pau-porrete | anemia | Infusion (I) | 1 1 1 0.17 |
| 42.36. *Pterodon pubescens* (Benth.) Benth. | Sucupira-branca | worms, pain, and stomach | SYRope, decoction and maceration (I) | 2 3 3 0.50 |
| 42.37. *Senna alata* (L.) Roxb. | Mata-pasto | throat, worms, and vitiligo | Infusion (I) | 6 3 3 0.50 |
| 42.38. *Senna occidentalis* (L.) Link | Fedegoso | blood cleanser, pain, flu, cough, and worms | Infusion (I) | 42 3 5 0.63 |
| 42.39. *Stryphnodendron obovatum* Benth. | Barbatimão 1 | wound healing | Syrup and decoction (I, E) | 57 1 1 0.17 |
| 42.40. *Stryphnodendron adstringens* (Mart.) Coville | Barbatimão 2 | bladder bronchitis, colic, stomach, bone fractures, uterine inflammation, relaxative muscular, and ulcer anxiety pain, throat, laxative, osteoporosis, syphilis, and worms | Syrup and decoction (I, E) | 15 4 9 1.00 |
| 42.41. *Tamarindus indica* L. | Tamarindo | | Maceration and juice (I) | 30 6 7 1.07 |
| 43. FLACOURTIACEAE | | | | |
| 43.1. *Casearia silvestris* Sw. | Guaçatonga | Epilepsy and kidneys | Infusion (I) | 3 2 2 0.33 |
| 44. GINKGOACEAE | | | | |
| 44.1. *Ginkgo biloba* L. | Ginco-biloba | vertebral | Infusion (I) | 1 1 1 0.17 |
| 45. HERRERIACEAE | | | | |
| 45.1. *Herreria salsaparilha* Mart. | Salsaparilha | column, blood cleanser, muscular relaxative, and kidneys | Infusion (I) | 12 3 4 0.57 |
| 46. HIPPOCRATEACEAE | | | | |
| 46.1. *Salacia aff. elliptica* (Mart. ex Schult.) G. Don | Saputa-do-brejo | pain | Infusion (I) | 6 1 1 0.17 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed |
|----------------|-----------------|-------------|-------------------------------|-------------|
| 47. IRIDACEAE  |                 |             |                               |             |
| 47.1. Eleutherine bulbosa (Mill.) Urb. | Palmeirinha | pain, hemorrhoids, cough, and blood cleanser | Infusion (I) | 11 2 4 0.47 |
| 48. LAMIACEAE  |                 |             |                               |             |
| 48.1. Hyptis cf. hirsuta Kunth | Hortelá-do-campo | diabetes, stomach, flu, cough, and worms cold | Infusion (I) | 23 5 5 0.83 |
| 48.2. Hyptis paludosae St.-Hil.ex Benht. | Alevante | Diabetes and cough | Infusion (I) | 4 1 1 0.17 |
| 48.3. Hyptis sp. | Hortelá-bravo | pain, stomach, flu, constipation, kidneys, and worms column, hearth, blood cleanser, stomach, fever, gastritis, flu, hypertension, labyrinthitis, muscular relaxative, and kidneys | Infusion (I) | 6 2 2 0.33 |
| 48.4. Hyptis suaveolens (L.) Poit. | Tapera-velha | Infusion (I) | 42 5 6 0.90 |
| 48.5. Leonotis nepetifolia (L.) R. Br. | Cordão-de-são-francisco | Infusion (I) | 38 7 11 1.43 |
| 48.6. Marsypianthes chamaedrys (Vahl) Kuntze | Alfavaca/Hortelá-do-mato | flu, hypertension, and cough soothing | Infusion (I) | 8 3 3 0.50 |
| 48.7. Melissa officinalis L. | Melissa | Anemia, liver, cough, and worms bronchitis soothing fever, flu, cold, and cough bronchitis flu, wound healing, stomach, and worms | Infusion (I) | 2 1 1 0.17 |
| 48.8. Mentha crispa L. | Hortelá-folha-miuda | Bronchitis flu, cough and worms | Infusion (I) | 16 4 4 0.67 |
| 48.9. Mentha pulegium L. | Poejo | Bronchitis flu, cough and worms | Infusion (I) | 59 3 6 0.70 |
| 48.10. Mentha spicata L. | Hortelá-vicki | Bronchitis flu, cough and worms stomach, flu, cold, and worms | Infusion (I) | 24 4 5 0.73 |
| 48.11. Mentha x piperita L. | Hortelá-pimenta | Bronchitis flu, cough and worms | Infusion (I) | 42 3 4 0.57 |
| 48.12. Mentha x villosa Huds. | Hortelá-rasteira | Bronchitis flu, cough and worms stomach, flu, cold, and worms | Infusion (I) | 86 3 4 0.57 |
| 48.13. Ocimum kilimandscharicum Baker ex Gürke | Alfavacaquinh | Lung | Infusion (I) | 2 1 1 0.17 |
| 48.14. Ocimum minimum L. | Manjericão | Kidneys, sinusitis, and worms | Infusion (I) | 7 3 3 0.50 |
| 48.15. Origanum majorana L. | Manjerona | Heart | Infusion (I) | 4 1 1 0.17 |
| 48.16. Origanum vulgare L. | Orégano | Cough | Infusion (I) | 1 1 1 0.17 |
| 48.17. Plectranthus amboinicus (Lour.) Spreng. | Hortelá-da-folha-gorda | Uterine inflammation, and cough bronchitis flu, | Infusion and syrup (I) | 7 3 4 0.57 |
| 48.18. Plectranthus barbatus Andrews | Boldo-brasileiro | Pain, stomach, liver, and malaise | Maceration (I) | 99 2 4 0.47 |
| 48.19. Plectranthus neochilus Schltr. | Boldinho | Stomach | Maceration (I) | 1 1 1 0.17 |
| Family/species               | Vernacular name | Application                                                                 | Preparation (administration) | Uses listed | NCS | NP | RI  |
|-----------------------------|-----------------|-----------------------------------------------------------------------------|------------------------------|-------------|-----|----|-----|
| 48.20. Rosmarinus officinalis L. | Alecrim         | anxiety soothing, hearth, pain, hypertension, insomnia, labyrinthitis, sluggishness memory, tachycardia, and vitiligo | Infusion and maceration (I)  | 31 6 10 1.27 |
| 49. LAURACEAE                |                 |                                                                             |                              |             |     |    |     |
| 49.1. Cinnamomum camphora (L.) Nees & Eberm. | Cânfora   | pain                                                                        | Infusion and maceration (I)  | 1 1 1 0.17  |
| 49.2. Cinnamomum zeylanicum Breyne | Canela-da-india | aphrodisiac, tonic, obesity, and cough                                      | Infusion (I)                 | 11 3 4 0.57 |
| 49.3. Persea americana Mill.  | Abacateiro      | hypertension, and kidneys                                                  | Infusion and maceration (I)  | 31 3 3 0.50 |
| 50. LECYTHIDACEAE            |                 |                                                                             |                              |             |     |    |     |
| 50.1. Cariniana rubra Gardner ex Miers | Jequitibá  | bladder wound healing, colic, pain, uterine inflammation, rheumatism, cough, and ulcer | Infusion and maceration (I)  | 49 5 8 1.03 |
| 51. LOGANIACEAE              |                 |                                                                             |                              |             |     |    |     |
| 51.1. Strychnos pseudoquina A. St.-Hil. | Quina         | anemia, wound healing, cholesterol, blood cleanser, pain, stomach, bone fractures, flu, uterine inflammation, pneumonia, muscle relaxant, cough, ulcer, and worms | Decoction and maceration (I, E) | 107 8 14 1.73 |
| 52. LORANTHACEAE             |                 |                                                                             |                              |             |     |    |     |
| 52.1. Psittacanthus calyculatus (D.C.) G. Don | Erva-de-passarinho | stroke, pain, flu, and pneumonia                                           | Infusion and maceration (I)  | 14 3 4 0.57 |
| 53. LYTHRACEAE               |                 |                                                                             |                              |             |     |    |     |
| 53.1. Adenaria floribunda Kunth | Veludovermelho | kidneys                                                                     | 3 1 1 0.17                  |
| 53.2. Lafoensia pacari A. St.-Hil. | Mangava-braba | wound healing, diarrhea, pain, stomach, gastritis, kidneys, and ulcer      | Decoction and maceration (I, E) | 73 5 7 0.97 |
| 54. MALPIGHIACEAE            |                 |                                                                             |                              |             |     |    |     |
| 54.1. Byrsonima orbignyana A. Juss. | Angiquinho    | wound healing                                                               | Decoction and maceration (I) | 2 1 1 0.17  |
| 54.2. Byrsonima sp.          | Semaneira       | pain                                                                        | Infusion (I)                 | 1 1 1 0.17  |
| 54.3. Byrsonima verbascifolia (L.) DC. | Murici-do-cerrado | column                                                                      | Infusion (I)                 | 3 2 2 0.33  |
| Family/species                        | Vernacular name       | Application                         | Preparation (administration) | Uses listed | NCS | NP | RI  |
|--------------------------------------|-----------------------|-------------------------------------|------------------------------|-------------|-----|----|-----|
| 54.4. *Camarea ericoides* A. St.-Hil.| Arniquinha            | uterine inflammation                | Infusion (I)                 | 11 1 1 0.17 |
| 54.5. *Galphimia brasilensis* (L.) A. Juss. | Mercúrio-do-campo   | wound healing, branching, soothing, and bone fractures | Infusion (I)                 | 7 3 4 0.57 |
| 54.6. *Heteropterys aphrodisiaca* O. Mach. | Nó-de-cachorro       | impotence, muscular relaxative, and rheumatism | Decoction (I)                | 23 5 6 0.90 |
| 54.7. *Malpighia emarginata* DC.     | Cereja                | wound healing                       | Infusion (I)                 | 5 1 1 0.17 |
| 54.8. *Malpighia glabra* L.          | Aceroleira            | bronchitis dengue, stomach, fever, and flu | Infusion (I)                 | 24 4 5 0.73 |
| 55. MALVACEAE                        |                       |                                     |                              |             |     |    |     |
| 55.1. *Brosimum gaudichaudii* Trécul | Mama-cadela          | stomach                             | Infusion (I)                 | 13 1 1 0.17 |
| 55.2. *Gossypium barbadense* L.      | Algodão-de-quintal   | blood cleanser, stomach, vitiligo, inflammation, and gonorrhea | Infusion (I)                 | 47 5 5 0.83 |
| 55.3. *Guazuma ulmifolia* var. tomentosa (Kunth) K. Schum. | Chico-magro          | diarrhea, kidneys, bronchitis wound healing | Infusion and decoction (I)   | 10 4 4 0.67 |
| 55.4. *Hibiscus pernambucensis* Bertol. | Algodão-do-brejo     | wound healing, colic, flu, and uterine inflammation | Infusion (I)                 | 2 3 4 0.57 |
| 55.5. *Hibiscus rosa-sinensis* L.    | Primavera             | pain                                | Infusion (I)                 | 2 1 1 0.17 |
| 55.6. *Hibiscus sabdariffa* L.       | Quiabo-de-angola, Hibisco | fever, pain, uterine inflammation, labyrinthitis, snakebite, and pneumonia | Infusion (I)                 | 18 10 13 1.87 |
| 55.7. *Helicteres sacarolha* A. St.-Hil. | Semente-de-macaco    | Hypertension and ulcer               | Infusion (I)                 | 2 2 2 0.33 |
| 55.8. *Malva sylvestris* L.          | Malva-branca         | wound healing, conjunctivitis, runny, blood cleanser, diuretic, boil, uterine inflammation, and rheumatism | Infusion (I)                 | 31 7 8 1.23 |
| 55.9. *Malvastrum corchorifolium* (Desr.) Britton ex Small | Malva                | wound healing, pain, and uterine inflammation | Infusion (I)                 | 13 4 4 0.67 |
| 55.10. *Sida rhombifolia* L.         | Guaxuma               | obesity                             | Infusion (I)                 | 5 1 1 0.17 |
| 56. MELASTOMATACEAE                  |                       |                                     |                              |             |     |    |     |
| 56.1. *Leandra purpurascens* (DC.) Cogn. | Pixirica             | rheumatism                          | Infusion (I)                 | 1 1 1 0.17 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-----------------------------|-------------|-----|----|----|
| 56.2. *Tibouchina clavata* (Pers.) Wurdack | Cibalena | pain | Infusion (I) | 3 1 1 0.17 |
| 56.3. *Tibouchina urvilleana* (DC.) Cogn. | Buscopam-de-casa | stomach | Infusion (I) | 1 1 1 0.17 |

57. MELIACEAE

| 57.1. *Azadirachta indica* A. Juss. | Neem | diabetes | Infusion and decoction (I, E) | 1 1 1 0.17 |
| 57.2. *Cedrela odorata* L. | Cedro | wound healing | Infusion (I) | 3 1 1 0.17 |

58. MENISPERMACEAE

| 58.1. *Cissampelos* sp. | Orelha-de-onça | Column and kidneys | Infusion (I) | 3 2 2 0.33 |

59. MORACEAE

| 59.1. *Artocarpus integrifolia* L.f. | Jaca | diuretic | Infusion (I) | 1 1 1 0.17 |
| 59.2. *Chlorophora tinctoria* (L.) Gaudich. ex Benth. | Taiúva | wound healing, colic, throat, blood cleanser, dysentery, pain, flu, laxative, menstruation, pneumonia, relapse delivery, and kidneys | Infusion (I) | 2 2 2 0.33 |

| 59.3. *Dorstenia brasiliensis* Lam. | Carapiá | bronchitis anemia and pain | Infusion and syrup (I) | 9 3 3 0.50 |

| 59.4. *Ficus brasiliensis* Link. | Figo | gastritis | Infusion (I) | 4 1 1 0.17 |
| 59.5. *Ficus pertusa* L. f. | Figueirinha | stomach | Infusion (I) | 5 1 1 0.17 |

60. MUSACEAE

| 60.1. *Musa x paradisiaca* L. | Bananeira-de-umbigo | bronchitis anemia and pain | Infusion and syrup (I) | 9 3 3 0.50 |

61. MYRTACEAE

| 61.1. *Eucalyptus citriodora* Hook. | Eucálipto | bronchitis, diabetes, fever, flu, sinusitis, and cough | Infusion and syrup (I) | 22 3 6 0.70 |
| 61.2. *Eugenia pitanga* (O. Berg) Kiaersk. | Pitanga | pain, throat, flu, and kidneys | Infusion (I) | 10 3 4 0.57 |
| 61.3. *Psidium guajava* L. | Goiabeira | diarrhea | Infusion (I) | 19 1 1 0.17 |
| 61.4. *Psidium guineense* Sw. | Goiaba-aráça | pain, diarrhea, and hypertension | Infusion (I) | 11 3 3 0.50 |
| 61.5. *Syzygium aromatum* (L.) Merr. & L. M. Perry | Cravo-da-india | Throat and cough | Infusion (I) | 5 1 2 0.23 |
| 61.6. *Syzygium jambolanum* (Lam.) DC. | Azeitona-preta | cholesterol | Decoction (I, E) | 4 1 1 0.17 |

62. NYCTAGINACEAE

| 62.1. *Boerhavia coccinea* L. | Amarra-pinto | bladder icterus, inflammation uterina, and kidneys | Infusion (I) | 22 2 4 0.47 |
| 62.2. *Mirabilis jalapa* L. | Maravilha | heart, pain, and hypertension | Infusion (I) | 8 2 3 0.40 |

63. OLACEAE

| 63.1. *Ximenia americana* L. | Limão-bravo | Trush and diuretic | Infusion (I) | 4 2 2 0.33 |

64. OPILIACEAE

| 64.1. *Agonandra brasiliensis* Miers ex Benth. & Hook f. | Pau-marfim | uterine inflammation | Decoction (I, E) | 1 1 1 0.17 |
| Family/species       | Vernacular name | Application    | Preparation (administration) | Uses listed | NCS | NP | RI |
|---------------------|-----------------|----------------|-----------------------------|-------------|-----|----|----|
| 65. ORCHIDACEAE     |                 |                |                             |             |     |    |    |
| 65.1. *Vanilla palmarum* (Salzm. ex Lindl.) Lindl. | Baunilha | hypertension | Infusion (I) | 2 | 1 | 1 | 0.17 |
| 65.2. *Oncidium cebolleta* (Jacq.) Sw. | Orquídea | pain | Infusion (I) | 2 | 1 | 1 | 0.17 |
| 66. OXALIDACEAE     |                 |                |                             |             |     |    |    |
| 66.1. *Averrhoa carambola* L. | Carambola | hypertension | Infusion (I) | 8 | 1 | 1 | 0.17 |
| 66.2. *Oxalis aff. hirsutissima* Mart. ex Zucc. | Azedinha | obesity | Infusion (I) | 9 | 1 | 1 | 0.17 |
| 67. PAPAVERACEAE    |                 |                |                             |             |     |    |    |
| 67.1. *Argemone mexicana* L. | Cardo-santo | hypertension | Infusion (I) | 8 | 1 | 1 | 0.17 |
| 68. PASSIFLORACEAE  |                 |                |                             |             |     |    |    |
| 68.1. *Passiflora alata* Curtis | Maracujá |            | Infusion (I) | 9 | 1 | 1 | 0.17 |
| 68.2. *Passiflora cincinnata* Mast. | Maracujá-domato | soothing hypertension | Infusion (I) | 5 | 2 | 2 | 0.33 |
| 69. PEDALIACEAE     |                 |                |                             |             |     |    |    |
| 69.1. *Sesamum indicum* L. | Gergelim | stomach, liver, gastritis, ulcer, and worms | Infusion and maceration (I) | 12 | 2 | 5 | 0.53 |
| 70. PHYLLANTHACEAE  |                 |                |                             |             |     |    |    |
| 70.1. *Phyllanthus niruri* L. | Quebra-pedra | kidneys | Infusion (I) | 32 | 1 | 1 | 0.17 |
| 71. PHYTOLACCACEAE  |                 |                |                             |             |     |    |    |
| 71.1. *Petiveria alliacea* L. | Guiné | rheumatism | Infusion (I, E) | 4 | 1 | 1 | 0.17 |
| 72. PIPERACEAE      |                 |                |                             |             |     |    |    |
| 72.1. *Piper callosum* Ruiz & Pav | Ventre-livre/elixir paregógico | kidneys | Infusion (I) | 1 | 1 | 1 | 0.17 |
| 72.2. *Piper cuyabanum* C. DC. | Jaborandi | pain, stomach, and loss of hair | Infusion (I, E) | 10 | 3 | 3 | 0.50 |
| 72.3. *Pothomorphe umbellata* (L.) Miq. | Pariparoba | soothing blood cleanser, stomach, liver, and pneumonia | Infusion (I) | 11 | 3 | 3 | 0.50 |
| 73. PLANTAGINACEAE  |                 |                |                             |             |     |    |    |
| 73.1. *Plantago major* L. | Tanchagem | heart, pain, and laxative | Infusion (I) | 16 | 3 | 3 | 0.50 |
| 74. POACEAE         |                 |                |                             |             |     |    |    |
| 74.1. *Andropogon bicornis* L. | Capim-rabo-de-lobo | uterine inflammation | Infusion (I) | 3 | 1 | 1 | 0.17 |
| 74.2. *Coix lacryma-jobi* L. | Lácrimas-de-nossa-senhora | kidneys | Infusion (I, E) | 4 | 1 | 1 | 0.17 |
| 74.3. *Cymbopogon citratus* (DC.) Stapf | Capim-cidreira | soothing blood cleanser, pain, stomach, expectorant, fever, flu, hypertension, muscular relaxative, kidneys, tachycardia, and cough | Infusion and juice (I) | 49 | 5 | 12 | 1.30 |
| 74.4. *Cymbopogon nardus* (L.) Rendle. | Capim-citronela | flu, cough, and tuberculosis | Infusion (E) | 11 | 2 | 2 | 0.33 |
| 74.5. *Digitaria insularis* (L.) Mez ex Ekman | Capim-amargoso | wound healing, stomach, bone fractures, and rheumatism | Infusion (I) | 14 | 3 | 4 | 0.57 |
### Table 3: Continued.

| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-----------------------------|-------------|-----|----|----|
| 74.6. Eleusine indica (L.) Gaertn. | Capim-pé-de-galinha | Hypertension and swelling in pregnant woman, diabetes, pain, hepatitis, kidneys, and vitiligo | Infusion (I) | 6 2 2 0.33 |
| 74.7. Imperata brasiliensis Trin. | Capim-sapé | dengue, kidneys, blood cleanser, stroke, flu, kidneys, sinusitis, cough, and tumors | Infusion (I) | 12 5 5 0.83 |
| 74.8. Melinis minutiflora P. Beauv. | Capim-gordura | | Infusion (I) | 31 7 8 1.23 |
| 74.9. Oryza sativa L. | Arroz | bladder | Infusion (I) | 1 1 1 0.17 |
| 74.10. Saccharum officinarum L. | Cana-de-açúcar | kidneys, anemia, and hypertension | Infusion (I) | 2 3 3 0.50 |
| 74.11. Zea mays L. | Milho | bladder kidneys | Infusion (I) | 3 2 2 0.33 |
| 75. POLYGALACEAE | | | | |
| 75.1. Polygala paniculata L. | Bengué | rheumatism | Infusion (I) | 6 1 1 0.17 |
| 76. POLYGONACEAE | | | | |
| 76.1. Coccoloba cujabensis Wedd. | Uveira | diuretic, wound healing, dengue, stomach, fever, flu, and hemorrhoids | Infusion (I) | 1 1 1 0.17 |
| 76.2. Polygonum cf. punctatum Elliott | Erva-de-bicho | diuretic, hepatitis, and kidneys | Infusion (I) | 41 5 6 0.90 |
| 76.3. Rheum palmatum L. | Ruibarbo | colic, blood cleanser, dysentery, pain, and snakebite | Infusion (I) | 6 4 4 0.67 |
| 76.4. Triplaris brasiliana Cham. | Novatero | diabetes | Infusion (I) | 1 1 1 0.17 |
| 77. POLYPODIACEAE | | | | |
| 77.1. Phlebodium decumanum (Willd.) J. Sm. | Rabo-de-macaco | diuretic, hepatitis, and kidneys | Infusion (I) | 9 2 3 0.40 |
| 77.2. Pteridium aquilinum (L.) Kuhn | Samambaia | colic, blood cleanser, and rheumatism | Infusion (I) | 8 3 3 0.50 |
| 77.3. Pteridium sp. | Samambaia-de-cipo | rheumatism | Infusion (I) | 1 1 1 0.17 |
| 78. PONTEDERIACEAE | | | | |
| 78.1. Eichhornia azurea (Sw.) Kunth | Aguapé | ulcer | Infusion (I) | 3 1 1 0.17 |
| 79. PORTULACACEAE | | | | |
| 79.1. Portulaca oleracea L. | Onze-horas | hypertension | Infusion (I) | 3 1 1 0.17 |
| 80. PROTEACEAE | | | | |
| 80.1. Roupala montana Aubl. | Carne-de-vaca | muscular relaxative | Infusion (I) | 2 1 1 0.17 |
| 81. PUNICACEAE | | | | |
| 81.1. Punica granatum L. | Romã | colic, diarrhea, pain, throat, inflammation uterina, and kidneys | Infusion and maceration (I, E) | 41 3 6 0.70 |
| 82. RHAMNACEAE | | | | |
| 82.1. Rhamnidium elaecarpum Reissek | Cabriteiro | anemia, diarrhea, diuretic, pain, stomach, and worms | Infusion (I) | 37 5 6 0.90 |
| Family/species     | Vernacular name | Application                                      | Preparation (administration) | Uses listed | NCS | NP  | RI   |
|-------------------|-----------------|-------------------------------------------------|------------------------------|-------------|-----|-----|------|
| 83. ROSACEAE      |                 |                                                 |                              |             |     |     |      |
| 83.1. Rosa alba L.| Rosa-branca     | wound healing, pain, and uterine inflammation | Infusion and maceration (I,  | 6            | 3   | 3   | 0.50 |
|                   |                 |                                                 | E)                           |             |     |     |      |
| 83.2. Rosa gracilis Rehder & E. H. Wilson | Rosa-amarela | pain                                             | Infusion and maceration (I, E) | 1           | 1   | 1   | 0.17 |
| 83.3. Rubus brasiliensis Mart. | Amoreira        | cholesterol, hypertension, labyrinthitis, menopause, obesity, osteoporosis, and kidneys | Infusion and tintura (I) | 38          | 6   | 7   | 1.07 |
| 84. RUBIACEAE     |                 |                                                 |                              |             |     |     |      |
| 84.1. Chiococca alba (L.) Hitchc. | Cainca         | pain, flu, and rheumatism                        | Infusion (I)                 | 8           | 3   | 3   | 0.50 |
| 84.2. Cordiera edulis (Rich.) Kuntze | Marmelada      | worms                                           | Maceration and syrup (I)     | 3           | 1   | 1   | 0.17 |
| 84.3. Cordiera macrophylla (K. Schum.) Kuntze | Marmelada-espinho | worms                                           | Maceration and syrup (I)     | 1           | 1   | 1   | 0.17 |
| 84.4. Cordiera sessilis (Vell.) Kuntze | Marmelada-bola | Flu and worms                                    | Maceration and syrup (I)     | 4           | 2   | 2   | 0.33 |
| 84.5. Coutarea hexandra (Jacq.) K. Schum. | Murtinha       | diarrhea, appendicitis, bronchitis, diabetes and kidneys | Infusion (I) | 1           | 1   | 1   | 0.17 |
| 84.6. Genipa americana L. | Jenipapo       |                                                 | Infusion and syrup (I)       | 8           | 4   | 4   | 0.67 |
| 84.7. Guettarda viburnoides Cham. & Schltdl. | Veludo-branco  | blood cleanser and ulcer                         | Infusion (I)                 | 5           | 2   | 2   | 0.33 |
| 84.8. Palicourea coriacea (Cham.) K. Schum. | Douradinha-do-campo | prostate cancer, hearth, blood cleanser, diuretic, flu, hypertension, insomnia, relaxative muscular, and kidneys | Infusion (I) | 62          | 7   | 9   | 1.30 |
| 84.9. Palicourea rigida Kunth | Doradão        | Kidneys and cough column, throat, blood cleanser, dysenterit, rheumatism, and kidneys | Infusion and decoction (I)   | 5           | 2   | 2   | 0.33 |
| 84.10. Rudgea viburnoides (Cham.) Benth. | Erva-molar     | soothing hearth, and hypertension, colic, diabetes, pain, liver, flu, hypertension, and cough | Infusion (I) | 44          | 5   | 6   | 0.90 |
| 84.11. Tocoyena formosa (Cham. & Schltdl.) K. Schum. | Jenipapo-bravo | kidneys                                          | Infusion (I)                 | 1           | 1   | 1   | 0.17 |
| 84.12. Uncaria tomentosa (Willd. ex Roem. & Schult.) DC. | Unha-de-gato  | intoxication, rheumatism, and kidneys            | Infusion (I)                 | 10          | 3   | 3   | 0.50 |
| 85. RUTACEAE      |                 |                                                 |                              |             |     |     |      |
| 85.1. Citrus aurantiifolia (Christm.) Swingle | Lima           |                                                 | Infusion (I)                 | 8           | 2   | 3   | 0.40 |
| 85.2. Citrus limon (L.) Osbeck | Limão          |                                                 | Infusion (I)                 | 17          | 5   | 7   | 0.97 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|----------------|----------------|-------------|-------------------------------|-------------|-----|----|----|
| 85.3. *Citrus sinensis* (L.) Osbeck | Laranja | soothing wound healing, fever, flu, pneumonia, and thyroid colic, conjunctivitis, pain, stomach, fever, gastritis, nausea, and laxative muscular | Infusion (I) | 30 4 6 0.80 |
| 85.4. *Ruta graveolens* L. | Arruda | colic, conjunctivitis, pain, stomach, fever, gastritis, nausea, and laxative muscular | Infusion (I) | 57 4 8 0.93 |
| 85.5. *Spiranthera odoratissima* A.St.-Hil. | Manacá | rheumatism, diabetes, diarrhea, hemorrhoids, and muscular relaxative | Infusion (I) | 6 1 1 0.17 |
| 85.6. *Zanthoxylum cf. rhoifolium* Lam. | Mamica-de-porca | diabetes, diarrhea, hemorrhoids, and muscular relaxative | Decoction (I, E) | 12 4 4 0.67 |
| **86. SALICACEAE** | | | | |
| 86.1. *Casearia silvestris* Sw. | Chá-de-frade | blood cleanser, pain, and fever | Infusion (I) | 10 1 3 0.30 |
| **87. SAPINDACEAE** | | | | |
| 87.1. *Dilodendron bipinnatum* Radlk. | Mulher-pobre | bone fractures, uterine inflammation, wound healing, pain, and cough column, muscular relaxative, and kidneys | Infusion (I) | 5 2 2 0.33 |
| 87.2. *Magonia pubescens* A. St.-Hil. | Timbó | wound healing, pain, and cough column, muscular relaxative, and kidneys | Maceration (I, E) | 7 2 3 0.40 |
| 87.3. *Serjania erecta* Radk. | Cinco-pontas | wound healing, pain, and cough column, muscular relaxative, and kidneys | Infusion (I) | 9 2 3 0.40 |
| 87.4. *Talisia esculenta* (A. St.-Hil.) Radlk. | Pitomba | column, pain, and rheumatism | Infusion (I) | 6 2 3 0.40 |
| **88. SAPOTACEAE** | | | | |
| 88.1. *Pouteria glomerata* (Miq.) Radlk. | Laranjinha-do-mato | fever | Infusion (I) | 1 1 1 0.17 |
| 88.2. *Pouteria ramiflora* (Mart.) Radlk. | Fruta-de-viado | Ulcer and kidneys | Infusion (I) | 1 2 2 0.33 |
| **89. SCROPHULARIACEAE** | | | | |
| 89.1. *Bacopa sp.* | Vicki-de-batata | kidneys | Infusion (I) | 2 1 1 0.17 |
| 89.2. *Scoparia dulcis* L. | Vassorinha | bladder wound healing, hearth, blood cleanser, diabetes, pain, bone fractures, swelling in pregnant woman, pneumonia, kidneys, syphilis, and cough | Infusion (I) | 81 7 12 1.50 |
| **90. SIMAROUBACEAE** | | | | |
| 90.1. *Simaba ferruginea* A. St.-Hil. | Calunga | anemia, wound healing, diabetes, digestive, pain, stomach, obesity, ulcer, and worms wound healing and uterine inflammation | Maceration (I) | 31 7 9 1.30 |
| 90.2. *Simarouba versicolor* A. St.-Hil. | Pé-de-perdiz | anemia, wound healing, diabetes, digestive, pain, stomach, obesity, ulcer, and worms wound healing and uterine inflammation | Decoction (I, E) | 4 2 2 0.33 |
| Family/species   | Vernacular name | Application          | Preparation (administration) | Uses listed | NCS | NP | RI |
|------------------|-----------------|----------------------|-------------------------------|-------------|-----|----|----|
| **91. SIPARUNACEAE** |                 |                      |                               |             |     |    |    |
| 91.1. *Siparuna guianensis* Aubl. | Negramina | pain, fever, and flu | Infusion (I) | 20 | 2 | 3 | 0.40 |
| **92. SMILACACEAE** |                 |                      |                               |             |     |    |    |
| 92.1. *Smilax aff. brasiliensis* Spreng. | Japecanga | Column and rheumatism | Infusion (I) | 5 | 1 | 2 | 0.23 |
| **93. SOLANACEAE** |                 |                      |                               |             |     |    |    |
| 93.1. *Capsicum* sp. | Pimenta | Pain and hemorrhoids | Infusion (I, E) | 14 | 2 | 2 | 0.33 |
| 93.2. *Nicotiana tabacum* L. | Fume | thyroid | Infusion (I, E) | 2 | 1 | 1 | 0.17 |
| 93.3. *Physalis* sp. | Tomate-de-copote | hepatitis | Infusion (I) | 1 | 1 | 1 | 0.17 |
| 93.4. *Solanum americanum* Mill. | Maria-preinha | worms | Infusion (I) | 3 | 1 | 1 | 0.17 |
| 93.5. *Solanum lycocarpum* A. St.-Hil. | Fruta-de-lobo | Gastritis and ulcer | Infusion and maceration (I) | 6 | 1 | 2 | 0.23 |
| 93.6. *Solanum* sp. | Jurubeba | column, stomach, and liver | Infusion (I) | 8 | 2 | 3 | 0.40 |
| 93.7. *Solanum* sp. | Urtiga | boi | Infusion (I) | 1 | 1 | 1 | 0.17 |
| 93.8. *Solanum melongena* L. | Berinjela | cholesterol | Infusion and maceration (I) | 2 | 1 | 1 | 0.17 |
| 93.9. *Solanum tuberosum* L. | Batata-inglesa | Pain and gastritis | Infusion and maceration (I, E) | 13 | 2 | 2 | 0.33 |
| 93.10. *Solanum viarum* Dunal. | Joá-manso | Hemorrhoids | Infusion (I) | 7 | 1 | 1 | 0.17 |
| **94. TILIACEAE** |                 |                      |                               |             |     |    |    |
| 94.1. *Apeiba tibourbou* Aubl. | Jangadeira | liver | Decoction (I, E) | 1 | 1 | 1 | 0.17 |
| 94.2. *Luehea divaricata* Mart. | Açóita-cavalo | uric acid, column, blood cleanser, throat, flu, hemorrhoids, intestine, pneumonia, muscular relaxative, kidneys, cough, and tumors | Decoction and syrup (I) | 58 | 7 | 12 | 1.50 |
| **95. ULMACEAE** |                 |                      |                               |             |     |    |    |
| 95.1. *Trema micrantha* (L.) Blume | Piriquiteira | wound healing | Decoction (I, E) | 1 | 1 | 1 | 0.17 |
| **96. VERBENACEAE** |                 |                      |                               |             |     |    |    |
| 96.1. *Casselia mansoi* Schau | Saúde-da-mulher | thooth, blood cleanser, uterine inflammation, and menstruation | Infusion (I) | 9 | 3 | 4 | 0.57 |
| 96.2. *Duranta repens* L. | Pingo-de-ouro | diabetes | Infusion (I, E) | 3 | 1 | 1 | 0.17 |
| 96.3. *Lantana camara* L. | Cambará | cold and cough soothing hearth, thooth, blood cleanser, pain, flu, hypertension, tachycardia, and cough | Decoction (I) | 22 | 2 | 2 | 0.33 |
| 96.4. *Lippia alba* (Mill.) N. E. Br. ex Britton & P. Wilson | Erva-cidreira | | Infusion (I) | 75 | 5 | 9 | 1.10 |
| Family/species | Vernacular name | Application | Preparation (administration) | Uses listed | NCS | NP | RI |
|---------------|----------------|-------------|-------------------------------|-------------|-----|----|----|
| 96.5. Phyla sp. | Chá-mineiro | conjunctivitis, blood cleanser, pain, fever, muscular relaxative, rheumatism, and kidneys | Infusion (I) | 19 4 7 0.87 |
| 96.6. Priva lappulacea (L.) Pers. | Pega-pega | Stomach and sinusitis bronchitis blood cleanser, stomach, liver, bone fractures, gastritis, flu, constipation, relaxing muscular, cough, and worms relaxing muscular | Infusion (I) | 2 2 2 0.33 |
| 96.7. Stachytarpheta aff. cayennensis (Rich.) Vahl | Gervão | blood cleanser, stomach, liver, bone fractures, gastritis, flu, constipation, relaxing muscular, cough, and worms relaxing muscular | Infusion (I) | 80 6 11 1.33 |
| 96.8. Stachytarpheta sp. | Rabo-de-pavão | blood cleanser, diarrhea, pain, and stomach | Infusion (I) | 3 1 1 0.17 |
| 96.9. Vitex cymosa Bert.ex Spreng. | Tarumeiro | blood cleanser, stomach, liver, bone fractures, gastritis, flu, constipation, relaxing muscular, cough, and worms relaxing muscular | Infusion (I) | 8 3 4 0.57 |
| 97. VIOLACEAE | | | | |
| 97.1. Anchietea salutaris A. St.-Hil. | Cipó-suma | column, blood cleanser, fever, intoxication, and vitiligo cough | Infusion (I) | 18 4 5 0.73 |
| 97.2. Hybanthus calceolaria (L.) Schulze-Menz. | Poaia-branca | | Infusion (I) | 1 1 1 0.17 |
| 98. VITACEAE | | | | |
| 98.1. Cissus cissyoides L. | Insulina-de-ramo | diabetes | Infusion (I) | 10 1 1 0.17 |
| 98.2. Cissus gongylodes Burch. ex Baker | Cipó-de-arráia | relaxative muscular | Infusion (I) | 1 1 1 0.17 |
| 98.3. Cissus sp. | Rabo-de-arráia | hypertension inflammation | Infusion (I) | 3 2 2 0.33 |
| 98.4. Cissus sp. | Sofre-do-rım-que-quer | uterina, relaxative muscular, and kidneys | Infusion (I) | 5 3 3 0.50 |
| 99. VOCHYSIACEAE | | | | |
| 99.1. Callisthene fasciculata Mart. | Carvão-branco | Hepatitis and icterus | Decoction (I, E) | 10 2 2 0.33 |
| 99.2. Qualea grandiflora Mart. | Pau-terra | Diarrhea and pain diarrhea | Decoction (I, E) | 5 2 2 0.33 |
| 99.3. Qualea parviflora Mart. | Pau-terrinha | | Decoction (I, E) | 1 1 1 0.17 |
| 99.4. Salvertia convallarioidora A. St.-Hil. | Capotão | hepatitis, diabetes, diuretic, hemorrhoids, and relaxing muscular | Decoction (I, E) | 4 4 4 0.67 |
| 99.5. Vochysia cinnamomea Pohl | Quina-doce | flu blood cleanser, diabetes, diarrhea, laxative, obesity, kidneys, cough, and worms | Decoction, Infusion (I, E) | 25 6 8 1.13 |
| 99.6. Vochysia rufa Mart. | Pau-doce | | | |
traditional use as a blood cleansing, wound healing, and other conditions associated with infections, which seems to point to its possible antibiotic activity. Indeed, some studies have demonstrated the in vitro activity of its different extracts against promastigotes of Leishmania donovani [38]. A few others also showed experimentally its antiviral, antitumor activities, cellular proliferation activities, and inflammatory and immune response [39, 40]. On the basis of these aforementioned, it is possible that its use in the folk medicine may be related to its ability to modulate the immune system, which may enhance physiological mechanisms involved in resolving inflammation, pain, and wound healing.
| Disease category/CID, 10th ed. | Medicinal plants | Main indications | Main forms of use | Part utilized/State of the plant | Species/citations | ICF |
|--------------------------------|------------------|-----------------|-------------------|---------------------------------|-------------------|-----|
| Injuries, poisoning, and certain other consequences of external causes— XIX | *Scoparia dulcis* L. | inflammation and pain | Inf, Dec, Mac, and Tin | L, Wp, Rt (Fr, Dr) | 65/286 | 0.78 |
| | *Solidago microglossa* D. C. L. | | | | | |
| | *L. A. St.-Hil.* | | | | | |
| Mental and behavioural disorders — V | *Chamomilla recutita* (L.) Rauschert. | soothing | Dec and Inf | L (In, Sc) | 20/85 | 0.77 |
| Symptoms, signs, and abnormal clinical and laboratory findings not elsewhere classified—XVIII | *Macrospiphonia longiflora* (Desf.) Müll. Arg. | blood depurative | Inf, Dec, and Mac | Rz (Fr, Dr) | 176/713 | 0.75 |
| Diseases of the genitourinary system — XIV | *Palicourea coriacea* (Cham.) K. Schum. | Kidneys and diuretic | Inf, Dec, and Syr | L (Fr, Dr) | 132/533 | 0.75 |
| Diseases of the digestive system—XI | *Plectranthus barbatus* Andrews | stomach, pain, liver, and malaise | Dec, Inf, Mac, and Juc | L (Fr, Dr) | 113/428 | 0.74 |
| | *Chenopodium ambrosioides* L. | verminose | Dec, Inf, Mac, and Juc | L (Fr, Dr) | 82/300 | 0.73 |
| Other infectious and parasitic diseases—I | *Mentha pulegium* L. | flu, bronchitis, colds, and cough | Dec, Inf, Mac, and Syr | L (Fr, Dr) | 88/303 | 0.71 |
| Diseases of the respiratory system—X | *Dorstenia brasiliensis* Lam. | childbirth | Dec, Inf, and Syr | Dec, Inf, and Syr | | |
| Pregnancy, childbirth, and the puerperium— XV | *Badiana pilosa* L. | Hepatitis and enteric | Dec and Inf | L (In, Sc) | 3/7 | 0.67 |
| Diseases of the circulatory system—IX | *Strychnos pseudoquina* A. St.-Hil. | anemia | Inf, Mac, and Syr | B (Fr, Dr) | 15/38 | 0.62 |
| Some disorders originating in the perinatal period—XVI | *Malva sylvestris* L. | Discharge and conjunctivitis | Inf and Tin | L (Fr, Dr) | 6/14 | 0.61 |
| Diseases of blood and blood forming organs and certain disorders involving the immune system—III | *Cissus cissyoides* L. | diabetes | Inf | L (Fr, Dr) | 47/109 | 0.57 |
| Diseases of the eye and the surrounding structures—VII | *Himatanthus obovatus* (Müll. Arg.) Woodson | labyrinthitis | Inf | L (Fr, Dr) | 7/15 | 0.57 |
| Diseases of endocrine of nutritional and metabolic origins—IV | *Solidago microglossa* DC. | bone fractures | Dec, Inf, Mac, and Tin | L (Fr, Dr) | 70/146 | 0.52 |
| Diseases of the ear and mastoid process—VIII | *Dioscorea brasiliensis* Willd. | furuncles | Dec, Inf, Mac, Tin, and Out | Rz (Fr, Dr) | 29/51 | 0.44 |
| Diseases of musculoskeletal and connective tissue—XIII | *Aloe barbadensis* Mill. | wound healing | Dec, Inf, Mac, Tin, and Out | L (Fr, Dr) | 22/38 | 0.43 |
| Diseases of the skin and subcutaneous tissue—XII | *Macrospiphonia longiflora* (Desf.) Müll. Arg. | leakage | Inf | | | |

CID, 10th ed. categories of diseases in chapters according to International Classification of Diseases and Related Health Problems, 10th. edition [25]; ICF: informant consensus factor; Inf: infusion, Dec: decocction, Syr: syrup, Mac: maceration, Sal: salad, Tin: tinture, Juc: juice, Out: others (compression and bath). L: leaf; Wp: whole plant; Rt: root; Rz: rhizome; B: bark. State of the plant: Fr: fresh; Dr: dried.
We did not encounter any literature pertaining to its use in anemia, nosebleeding, muscle relaxant, deworming, or vitiligo treatment. Its indications as a blood cleansing and as antihypercholesterolemic are important targets for future biomedical research.

*B. sabdariffa* calyces are used in many parts of the world to make cold and hot drinks as well as in folk medicine [41]. Due to its many health-enhancing benefits, extensive works have been carried to validate its traditional therapeutic claims. In fact, its medicinal importance is widely acknowledged in many traditional herbal systems [42].

The benefits associated with the use of *H. sabdariffa* may in part be due to its high content of beneficial phytochemical constituents. These include alkaloids, L-ascorbic acid, anisaldehyde, anthocyanin, β-carotene, β-sitosterol, citric acid, cyanidin-3-rutinoside, delphinidin, galactose, gossypetin, hibiscetin, mucopolysaccharide, pectin, protocatechuic acid, polysaccharide, quercetin, stearic acid, and flavonoids [42, 43]. Studies have highlighted the role of polyphenol acids, flavonoids, and anthocyanins that may act as antioxidants or through other mechanisms that may contribute to its cardioprotective activity [44, 45].

In addition to folkloric use of *H. sabdariffa* noted in this study, other previous reports have indicated its use in the treatment of liver disease, hypocholesterolemic, antispasmodic, intestinal antiseptic, sedative, and as mild laxative [42, 46]. The most extensively studied is its antihypertensive activity. This effect was confirmed in several *in vitro* and animal studies [47–49]. The hypotensive effect of *H. sabdariffa* and its constituents may be mediated, at least partially, by a cholinergic and/or histaminergic mechanism and it has been confirmed to act via inhibitory action on angiotensin I converting enzyme, vasorelaxation [50], and diuretic action [51]. For detailed review on this aspect, see [41]. In addition to literature reports on the medicinal uses of this plant, we also report here its indications in the treatment of anxiety and labyrinthitis and as anti-snake venom. To the best of our knowledge, these indications remained to be proven experimentally.

In concordance with the traditional use of *H. sabdariffa* in the treatment of uterine inflammation and pain, its aqueous ethanol extract was shown experimentally to presents anti-inflammatory, uterine antispasmodic activities, and attenuation of intestinal spasm [52–54]. In addition to its confirmed pharmacological activities, its antiobese/weight-reducing [50, 55], hepatoprotective [56–58], anticancer [46, 59, 60], free-radical scavenging [61], antioxidant [42], immunomodulatory [62], lipid-lowering [43, 63] effects and attenuation of oxidants-mediated complications in diabetes [64] have been well documented. Besides, the plant extract is characterized by a very low degree of toxicity [41]. Moreover, apart from its medicinal uses, the plant seed oil was also shown to be a good source of lipidsoluble antioxidants, particularly γ-tocopherol, thus it could have important industrial applications [65].

*Solidago microglossa* is popularly known in Brazil as “arnica,” “arnica-do-mato,” “arnica-silvestre,” “erva-federal,” “arnica-vulgar,” “erva-lanceta,” and “rabo-de-rojão” [66]. It is usually confused with *Arnica montana* L., a native of the mountainous regions of Europe, due to the similarity in their medicinal flowers and having the same color (yellow). *S. microglossa* is not cultivated in Brazil due to its low adaptation to the tropical conditions [66]. In our study, *S. microglossa* was indicated for treatment of 15 different diseases corresponding to 8 classes of CID, 10th ed. and had a total of 49 citations. The key citations for this plant were its use in wound healing and blood cleansing. Other popular indications found in this study were similar to those previously reported, especially its use in the treatment of wounds, acne, bruises, and stomach-related ailments [67].

Several classes of compounds and metabolites have been isolated from *S. microglossa*, especially phenols, acetophenones, carotenoids, lactones (helenalin and dihydro-helenalin) [68, 69], flavonoids [70, 71] saponins [72], and polyacetylenes [70]. The cicatrizant activity of the plant’s extract has been confirmed experimentally [73]. Although not mentioned directly by respondents in this study, some lines of evidence suggest important antibiotic activity with the use of *S. microglossa*, which can justify its indication for uterine inflammation. Morel et al. [74] showed that the essential oil of *S. microglossa* and three of its components (quercetin, α-epinastester, and solidagenone) are capable of significantly inhibiting the growth of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Klebsiella pneumoniae*, *Escherichia coli*, *Salmonella* *setubal*, *Bacillus subtilis*, *Pseudomonas aeruginosa*, *Saccharomyces cerevisiae*, and *Candida albicans* [74]. In addition, cicatrizant activity was observed with the administration of the plant’s extract [73]. Its use in ameliorating renal ailments, blood cleansing, and hypotensive and antiparasitic activities may be associated with the presence in high concentrations of tannins [75, 76] and flavonoids in this species [76–79]. Its indication for muscle relaxation may also derive from its antispasmodic effect [80]. Further studies are warranted in these regards.

Other pharmacological properties not mentioned here, but have been established in preclinical studies, include hypoglycemic effect [81] and antitumor activity. In fact, the latter effect has attracted intense interest in the discovery of new chemotherapeutic agents. The extract of *S. microglossa* demonstrated antiproliferative effect (but not mutagenic) against young shoot cells of onion (*Allium cepa*) strain [82]. Some of these activities may be related to the presence of secondary metabolites such as helenalin [83].

Although *Strychnos pseudoquina* is referred to locally as “quinas”, similar to the local name used for species such as *Cinchona* sp. (source of quinine), it has been shown to be inactive against *Plasmodium berghei* [84] contrary to its popular use in folk medicine elsewhere [84]. Theoretically, some of the indications may result from the classification bias in the community due to an erroneous popular cultural belief that plants referred to as “quinas” are useful for “anemic” patients infected with malaria parasite. This perhaps helps to explain why the highest indication for this plant in our study was to treat anemia.

Among the components isolated from *S. pseudoquina* metabolites are isoramnetin, strychnobiflavone, and 11-diaboline metoxydiaboline [85]. Silva et al. [86] demonstrated the gastroprotective effect of *S. pseudoquina* in models
of gastric lesions induced by nonsteroidal anti-inflammatory agents and some necrotizing agents, thus confirming its indication for gastric ulcer and stomach disorders as noted in this present study. On the other hand, its indication in wound healing has not been experimentally confirmed at least in the diabetic wound model in rats [87] or in local hemorrhage induced by Bothrops jararaca venom [88]. Other medicinal uses indicated like “blood depurative” and analgesic effect may be subject of future investigation as a potential agent with antinociceptive and metabolic disorders ameliorating effects. Regarding its toxicity, Santos et al. [81] showed that only the methanol extract (but not dichloromethane) from the leaves of *S. pseudoaquina* have mutagenic effect in *Salmonella* strains TA98 (~S9) and TA100 (+ S9, ~S9) and that it induces formation of micronuclei after acute treatment [81].

*Dorstenia brasiliensis*, known as “Carapía” is a perennial herb of the early geological point of view, typical of the fields in southern Brazil, Paraguay, Uruguay, and Argentina [89, 90]. Phytochemical analysis of roots of *D. brasiliensis* indicated the presence of dorstenic acid A and B (triterpenoids), isopimarane-type diterpenoid, and six different types of coumarins. The two triterpenoids showed moderate cytotoxicity against leukemia cells (L-1210 and HL-60) [91]. Furthermore, some authors have suggested that its use in cutaneous disease (such as psoriasis and vitiligo) may be associated with the presence of furanocoumarins in the species of *Dorstenia* [92]. Bartericin A and B, stigmasterol, isobavachalcone, 4-hydroxyisorhizin, dorphmanin F, 6,8-diprenyleridictyol, quercetin, quercitrin, amentoflavone [93], psoralen, bergapten (from rhizome), dorsmanin F, 6,8-diprenyleridictyol, quercetin, quercitin, amentoflavone [93], psoralen, bergapten (from rhizome), and umbelliferone [94] are some of the compounds isolated from this medicinal plant.

Some few pharmacological studies have demonstrated analgesic and anti-inflammatory activities of *D. brasiliensis* in animal models [95]. These data corroborated the popular use of *D. brasiliensis* as an analgesic. There is dearth of information confirming its use in the popular medicine use as an anti-inflammatory agent. Moreover, *D. brasiliensis* may possesses some biologically active compounds similar to other *Dorstenia* species from the same genus and may thus share similar pharmacological profile. The following compounds and pharmacological activities have been reported in other *Dorstenia* species: chalcones (D. prorepens and *D. denkeri*) [96], furocoumarins (D. bahiense and *D. bryoniifolia*), triterpenes (D. bahienensis, D. bryoniifolia, D. carantac, D. cayapia, and *D. heringerii*) [97]. This is a point to be noted for future research. Some authors have investigated its potential use as antivenom, antiinfective, anti-rheumatic [96, 97] while others established its antitrichomonal [93], antitussive [98], antioxidant [93, 99] and antileishmanial [100] activities.

*Scoparia dulcis*, popularly known as “vassourinha”, grows wild in backyards, gardens, and fields in Brazil. Phytochemical studies have identified the presence of more than 12 interesting pharmacologically active compounds in this species, namely, scoparic acid A [101], isodulcinol, 4-epi-scopadulcic acid B, dulcidiol, scopanolol, dulcinol/scopadulciol, scopoladiol [102], scoparolin [103], scopadulcic acid B [104–106], glutinol [107] and scopadulin [105]. Scopadulcic acid B inhibited the effects of tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA) in *vitro* and *in vivo*, and also suppressed the promoting effect of TPA on skin tumor formation, demonstrating stronger effect than antitumor-promoting terpenoids, such as glycyrrhetinic acid [104]. In fact, its cytotoxicity has been investigated against antitumor activity [102] and nerve growth factor-mediated neurite outgrowth and neurodegenerative disorders [103, 108].

The analgesic and anti-inflammatory activities of ethanol extracts of *S. dulcis* and glutinol have been demonstrated in writhing induced by acetic acid and carrageenan-induced paw edema, respectively [107]. However, *S. dulcis* extracts were ineffective in the central pain models (tail flick) and paw edema induced by dextran. Another secondary metabolite, scoparinol, also showed significant analgesic and anti-inflammatory activity [109]. In regard to its toxicological effects, it is worthwhile to mention that glutinol and scoparinol markedly potentiated pentobarbital-induced sedation and duration of sleeping time in these two studies mentioned above.

In contrast to its toxicity, *S. dulcis* seems to possess potential hepatoprotective activity in different models, which have been attributed to its free-radical scavenging potential activities [110–113]. Corroborating with antibiotic use for some infections (like gonorrhea), some authors have investigated inhibition of multidrug resistance (MDR) bacteria, fungi [114, 115], leishmanial parasite [116], and herpes simplex virus type 1 growths [96].

Paradoxically, despite the low citation in gastric ulcer and diabetes treatments in this study, the antiulcer and antihyperglycemic activities of this species are well documented. Inhibitory activities of *S. dulcis* extracts was demonstrated in pylorus ligation model, histamine- or bethanechol-stimulated gastric secretion, and acute gastric lesions induced by indomethacin [117, 118]. *S. dulcis* was also demonstrated to inhibit both proton pump (H+K+-ATPase) and proton transport into gastric vesicles [105]. In regard to its antihyperglycemic effect, experimental evidences demonstrated that *S. dulcis* extracts reduced blood glucose, glycosylated haemoglobin, prevented decrease in the body weight, and improved glucose tolerance similarly with glibenclamide [119]. Even in the insulin resistance stage, *S. dulcis*-treated L6 myotubes were found to be more capable of stimulating glucose transport than insulin treatment [120]. In addition, scoparic acid D was able to stimulate insulin secretion and receptor binding in streptozotocin (STZ-) induced diabetic rats [121].

*Luehea divaricata* is a native tree of the Brazilian Cerrado popularly known as “açoita-cavalo”. Just as popularly indicated, some studies have reported the following pharmacological activities of *L. divaricata*: the leaves as used as diuretic, the stems as anti-inflammatory, the bark and aerial parts are used for healing skin wounds, pimples, and for vaginal washes [122, 123].

Phytochemical screening of *L. divaricata* reported the presence of flavonoids, tannins and saponins and afforded the presence of 3b-p-hydroxybenzoyl-tormentic acid [124],
maslinic acid [122], vitexin and glucopyranosylsitosterol, and (−)-epicatechin [123].

The presence of flavonoids and metabolites such as the vitexin [125, 126] and maslinic acid [127, 128] may be associated with the popular indication of its anti-inflammatory properties formation of urate (18) and anti-tumor (4). Extracts of L. divaricata has been shown to have antioxidant activity and analgesic property [129], lack toxicity in vivo [130], or mutagenicity [131]. Its extract also showed cytotoxicity against tumor cell lines [123]. Due to the high level of citation for the treatment of urate alleviation (18), we believe that its antigout or uricosuric activity may be an important target of pharmacological interest. Another indication prominently cited by the respondents is the use of L. divaricata in the treatment of lung diseases and upper airway. However, there is no scientific evidence on its regulatory activity on cough, while its antibiotic properties also vary. Some authors have demonstrated its inhibitory effect on the growth of dermatophytes [132] but not in other fungi species [123, 129]. In addition, the extract of L. divaricata was shown to strongly inhibit the growth of S. aureus, S. epidermitis, K. pneumonia, and E. coli in a study [129] but showed only moderately in another study elsewhere [123].

It is worth mentioning that although Lapeoensia pacari A.St.-Hil. had low relative importance value, all the same, it is among the three plants with the highest informant consensus factor in addition to being a native plant in the region. The other two (S. dulcis and S. microglossa) have been discussed previously.

L. pacari popularly called “mangava-brava”, belongs to the family Lythraceae, is a tree native to the Brazilian Cerrado [133]. It is commonly used for gastrointestinal disorders, wound healing, diarrhea, and kidney problems. In our study, it was referenced for the treatment of seven disorders distributed into five classes of CID, 10th ed. Preliminary phytochemical studies of methanol extract of the stem bark of L. pacari revealed the presence of free steroids, saponins, tannins catechins, pyrogallic tannins (in particular, ellagic acid), triterpenoids, simple phenols, strong and weak fixed acids, alkali, and quaternary amino acids [134–136]. Acute toxicity studies or subchronic oral administration of extracts of L. pacari did not indicate any harmful effects [137]. However, it is also indicated for its adverse reactions and used as an abortifacient, diarrheic, weight loss, and tachycardia. Among the 42 citations for L. pacari, 29 were for the treatment of ulcer, and four and two for gastritis and stomach, respectively. These indications have been confirmed with the use of methanol crude extract of L. pacari and its major active components, ellagic acid, in different experimental ulcer models [138–143]. In addition, the antiulcer activity of the methanol extract (capsules) of L. pacari was confirmed in the clinical trial with 55 patients with dyspepsia [144].

We did not encounter any studies concerning its activities in wound healing, antidiarrheal or alleviation of kidney disorders. This phenomenon of plant selection by local people for certain indications may be, for instance, to consolidate best practice of the medicinal properties of the plants at the expense of using other plants substitute for these indications. In fact, the broad community access to Amazon or Pantanal biome, and the close relationship with the indigenous native populations, promotes a variety of possibilities of ethnomedical indications. Examples of other popular uses of L. pacari that have been experimentally confirmed includes weight loss [145], anorectic effect [142], antipyretic activity [146], anti-inflammatory [147], antiallergic [148], and analgesic property [149].

It is also worth mentioning other studies focused on the medicinal uses of L. pacari, including its potent antifungal activity [150], have demonstrated that the main compound responsible is found in the methanol extract of this plant. A patent application of lotion with the infusion prepared from the leaves of L. pacari, as a component of the formulation was also solicited [151]. To the best of our knowledge, there is currently no available literature concerning its claims as wound healing, antidiarrheal, or in kidney disorders.

5. Conclusions

The present study identified the several plant species and their medicinal uses in NSACD highlighting significant cultural diversity in the Pantanal region. In fact, one of the important components of this community is the contribution of Amerindian culture, which highlights its importance in the identification of indigenous popular knowledge relevance in the identification of native popular knowledge.

Analytically, the data were categorized according to the highest values of relative importance and consensus among informants, ensuring the best evidence for ethnomedical bioprospecting of medicinal plants. Thus, we identified seven native species with the highest relative importance, which are H. obovatus, H. sabdariffa, S. microglossa, S. pseudoquina and D. brasiliensis, S. dulcis, and L. divaricata including L. pacari. The three plants with the highest value of consensus among informants were S. dulcis, S. microglossa, and L. pacari.

The preservation of local culture, the practice of traditional medicinal plant species themselves represent important strategies for sustenance of popular knowledge of CAM in the local systems of health care and environmental education. Moreover, ethnomedical and pharmacological studies provide information essential for guidance in bioprospecting for new drugs of plant origin in the consolidation of therapeutic practices of the community.

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References

[1] OMS, Organización Mundial De La Salud. Estrategia de la OMS sobre medicina tradicional 2002–2005, OMS, Geneva, Switzerland, 2002.

[2] Brasil, “Ministério da Saúde. Portaria n 971. Aprova a Política Nacional de Práticas Integrativas e Complementares no SUS,” Diário Oficial [da] República Federativa do Brasil, Poder Executivo, Brasília, DF, 2006.

[3] U. Cakilcioglu and I. Turkoglu, “An ethnobotanical survey of medicinal plants in Sivrice,” Journal of Ethnopharmacology vol. 152, no. 1, pp. 165–175, 2010.

[4] Brasil, “Flora, vegetação, etnobotânica-conservação de recursos vegetais no pantanal,” Cuiabá, 2006.

[5] Mato Grosso, “Plano plurianual 2004–2007 do Governo do Estado,” Projeto de lei. Seplan, MT, 2005.

[6] M. C. M. Amorozo, “Uso e diversidade de plantas medicinais em Santo Antônio do Leverger, MT,” Acta Botanica Brasilica, vol. 16, no. 2, pp. 189–203, 2002.

[7] G. Guarim Neto, “O saber tradicional pantaneiro: as plantas medicinais e a Educação Ambiental,” REMEA. Julho a dezembro, FURG/PPGPEA. 2006.

[8] A. C. D. Diegues, “O Mito Moderno da Natureza Intocada,” Hucitec, São Paulo, Brazil, 1998.

[9] Poconé, “Plano Municipal de Saúde de Poconé. Prefeitura Municipal de Poconé. Secretaria municipal de Saúde,” Poconé – MT, 2010.

[10] R. L. Scheaffer, W. Mendnhal, and L. Ott, Elementos de Muestreo, Editora Iberoamericana, México, 1987.

[11] H. Bolfarine and W. O. Bussab, Elementos de amostragem, Edgar Blucher, São Paulo, Brazil, 2005.

[12] Brasil, “Ministério do Desenvolvimento, Indústria e Comércio,” Sistema Aliceweb: informações sobre o comércio exterior brasileiro. Brasília, 2007.

[13] P. S. Levy and S. Lemeshow, Sampling of populations. Methods and Applications, John Wiley & Sons, New York, NY, USA, 2008.

[14] M. Pio Correa, “Dicionário das plantas úteis do Brasil e das exóticas cultivadas,” Instituto Brasileiro de Desenvolvimento Florestal, IBDF, Rio de Janeiro, 6 v. 1962–1969.

[15] A. C. Diegues, “Etnoconservação na natureza: enfoques alternativos,” in Etnoconservação, novos rumos para a conservação da natureza nos trópicos, A. C. Diegues, Ed., pp. 1–46, Hucitec Nupaub-USP, São Paulo, Brazil, 2000.

[16] A. M. Borba and M. Macedo, “Medicinal plants used for oral health in the Santa Cruz neighborhood, Chapada dos Guimarães, Mato Grosso State, Brazil,” Acta Botanica Brasilica, vol. 20, no. 4, pp. 771–782, 2006.

[17] M. C. Pasa, J. J. Soares, and G. Guarim Neto, “Estudo etnobotânico na comunidade de Conceição-Açu (alto da bacia do rio Aricá Açú, MT, Brasil),” Acta Botanica Brasilica, vol. 19, no. 2, pp. 195–207, 2004.

[18] M. G. De La Cruz, Plantas Medicinais de Mato Grosso-A Farmacopéia Popular dos Raizeiros, Ed. Carlini and Caniato Editorial, 2008.

[19] V. J. Pott and A. Pott, Plantas do Pantanal, EMBRAPA-CPAP, Brasilia, Brazil, 1994.

Evidence-Based Complementary and Alternative Medicine

[20] A. Cronquist, The evolution classification of flowering plants, The New York Botanical Garden, New York, NY, USA, 2nd edition, 1988.

[21] Missouri Botanical Garden - MOBOT, April 2010, http://www.tropicos.org/.

[22] B. C. Bennett and G. T. Prance, “Introduced plants in the indigenous pharmacopoeia of northern South America,” Economic Botany, vol. 54, no. 1, pp. 90–102, 2000.

[23] G. L. de Oliveira, A. F. M. de Oliveira, and L. H. C. Andrade, “Medicinal plants used in the urban community of Muribeca, Northeast Brazil,” Acta Botanica Brasilica, vol. 24, no. 2, pp. 571–577, 2010.

[24] Brasil, “Classificação Internacional de Doenças e de Problemas Relacionados a Saúde,” Décima Revisão – CID-10, DATASUS. 2008.

[25] D. M. Eisenberg, R. B. Davis, S. L. Ettner et al., “Trends in alternative medicine use in the United States, 1990–1997: results of a follow-up national survey,” Journal of the American Medical Association, vol. 280, no. 18, pp. 1569–1575, 1998.

[26] G. A. Taddei-Bringas, M. A. Santillana-Macedo, J. A. Romero-Cancio, and M. B. Romero-Téllez, “Acceptance and use of therapeutic medical plants in family medical care,” Saúde Publica do México, vol. 41, no. 3, pp. 216–220, 1999.

[27] T. H. Bekalo, S. D. Woodmatas, and Z. A. Woldemariam, “An ethnobotanical study of medicinal plants used by local people in the lowlands of Konta Special Woreda, southern nations, nationalities and peoples regional state, Ethiopia,” Journal of Ethnobiology and Ethnomedicine, vol. 5, article no. 26, 2009.

[28] I. G. C. Bieski, Plantas Medicinais e Aromáticas no Sistema Único de Saúde da Região Sul de Cuiabá-MT, Secretaria Municipal de Saúde de Cuiabá-MT, Lavras Minas Gerais – Brazil, 2005.

[29] G. S. Vendruscolo and L. A. Mentrz, “Study of use citations agreement and importance of medicinal used species and families to the community of Ponta Grossa neighborhood, Porto Alegre, Rio Grande do Sul State, Brazil,” Acta Botanica Brasilica, vol. 20, no. 2, pp. 367–382, 2006.

[30] E. B. Santos, G. S. Dantas, H. B. Santos, M. E. F. Melo Diniz, and F. C. Sampaio, “Etnobotanical studies of medicinal plants for oral conditions in the municipality of João Pessoa, Brazil,” Brazilian Journal of Pharmacognosy, vol. 19, no. 1B, pp. 321–324, 2009.

[31] B. Upadhay, Parveen, A. K. Dhaker, and A. Kumar, “Ethemedical and ethnopharmacostatistical studies of Eastern Rajasthan, India,” Journal of Ethnopharmacology, vol. 129, no. 1, pp. 64–86, 2010.

[32] D. J. Simbo, “An ethnobotanical survey of medicinal plants in Babungo, Northwest Region, Cameroon,” Journal of Ethnobiology and Ethnomedicine, vol. 6, article no. 8, 2010.

[33] R. M. Polhill, “Papilionoideaie,” in Advances in Legume Systematics I, R. M. Polhill and P. H. Raven, Eds., pp. 191–208, Royal Botanic Gardens, Kew, 1981.

[34] G. Lewis, B. Schrire, B. MacKinder, and M. Lock, Eds., Legumes of the World, Royal Botanical Gardens, Kew, UK, 2005.

[35] M. A. C. Pilla, M. C. D. M. Amorozo, and A. Furlan, “Acquisition and use of medicinal plants in Martim Francisco district, Mogi Mirim Municipality, São Paulo State, Brazil,” Acta Botanica Brasilica, vol. 20, no. 4, pp. 789–802, 2006.

[36] U. P. Albuquerque et al., “Evaluating two quantitative ethnobotanical Techniques,” Ethnobotany Research and Applications, vol. 4, pp. 051–060, 2006.
Evidence-Based Complementary and Alternative Medicine 33

[37] S. Akerreta, R. Y. Cavero, V. López, and M. I. Calvo, "Analyzing factors that influence the folk use and phytonomy of 18 medicinal plants in Navarra," Journal of Ethnobiology and Ethnomedicine, vol. 3, article no. 16, 2007.

[38] M. L. De Mesquita, J. Desrivet, C. Borie et al., "Antileishmanial and trypanocidal activity of Brazilian Cerrado plants," Memorias do Instituto Oswaldo Cruz, vol. 100, no. 7, pp. 783–787, 2005.

[39] G. T. Tan, S. Lee, I. S. Lee et al., "Natural-product inhibitors of human DNA ligase I," Biochemical Journal, vol. 314, no. 3, pp. 993–1000, 1996.

[40] A. J. Vlietinck, T. De Bruyne, S. Apers, and L. A. Pieters, "Plant-derived leading compounds for chemotherapy of human immunodeficiency virus (HIV) infection," Planta Medica, vol. 64, no. 2, pp. 97–109, 1998.

[41] B. H. Ali, N. Al Wabel, and G. Blunden, "Phytochemical, pharmacological and toxicological aspects of Hibiscus sabdariffa L.: a review," Phytotherapy Research, vol. 19, no. 5, pp. 369–375, 2005.

[42] V. Hirunpanich, A. Utaipat, N. P. Morales et al., "Antioxidant effects of aqueous extracts from dried calyx of Hibiscus sabdariffa Linn. (roselle) in vitro using rat low-density lipoprotein (LDL)," Biological and Pharmaceutical Bulletin, vol. 28, no. 3, pp. 481–484, 2005.

[43] O. Carvajal-Zarralab, S. M. Waliszewski, D. M. Barradas-Dermitz et al., "The consumption of Hibiscus sabdariffa dried calyx ethanolic extract reduced lipid profile in rats," Plant Foods for Human Nutrition, vol. 60, no. 4, pp. 153–159, 2005.

[44] R. S. Crawford, E. A. Kirk, M. E. Rosenfeld, R. C. LeBoeuf, and A. Chait, "Dietary antioxidants inhibit development of fatty streak lesions in the LDL receptor-deficient mouse," Arteriosclerosis, Thrombosis, and Vascular Biology, vol. 18, no. 9, pp. 1506–1513, 1998.

[45] E. B. Rimm and M. J. Stampfer, "Antioxidants for vascular disease," Medical Clinics of North America, vol. 84, no. 1, pp. 239–249, 2000.

[46] D. X. Hou, X. Tong, N. Terahara, D. Luo, and M. Fujii, "Delphinidin 3-sambubioside, a Hibiscus anthocyanin, induces apoptosis in human leukemia cells through reactive oxygen species-mediated mitochondrial pathway," Archives of Biochemistry and Biophysics, vol. 440, no. 1, pp. 101–109, 2005.

[47] F. B. O. Mojiminiyi, M. Dikko, B. Y. Muhammad et al., "Antihypertensive effect of an aqueous extract of the calyx of Hibiscus sabdariffa," Fitoterapia, vol. 78, no. 4, pp. 292–297, 2007.

[48] M. Haji Faraji and A. H. Haji Tarkhani, "The effect of sour tea (Hibiscus sabdariffa) on essential hypertension," Journal of Ethnopharmacology, vol. 65, no. 3, pp. 231–236, 1999.

[49] A. Herrera-Arellano, S. Flores-Romero, M. A. Chávez-Soto, and J. Tortoriello, "Effectiveness and tolerability of a standardized extract from Hibiscus sabdariffa in patients with mild to moderate hypertension: a controlled and randomized clinical trial," Phytomedicine, vol. 11, no. 5, pp. 375–382, 2004.

[50] M. Sarr, S. Ngom, M. O. Kane et al., "In vitro vasorelaxation mechanisms of bioactive compounds extracted from Hibiscus sabdariffa on rat thoracic aorta," Nutrition and Metabolism, vol. 6, article no. 45, 2009.

[51] V. Prasongwatana, S. Wootitsin, P. Sriroonlua, and V. Kukongviriyapan, "Uricosuric effect of Roselle (Hibiscus sabdariffa) in normal and renal-stone former subjects;" Journal of Ethnopharmacology, vol. 117, no. 3, pp. 491–495, 2008.

[52] A. A. Dafallah and Z. Al-Mustafa, "Investigation of the anti-inflammatory activity of acacia nilotica and hibiscus sabdariffa," American Journal of Chinese Medicine, vol. 24, no. 3–4, pp. 263–269, 1996.

[53] Beltran-Debon et al., "The aqueous extract of Hibiscus sabdariffa calices modulates the production of monocytechemoattractant protein-1 in humans," Phytomedicine, vol. 17, pp. 186–191, 2010.

[54] E.-S. Kao, J.-D. Hsu, C.-J. Wang, S.-H. Yang, S.-Y. Cheng, and H.-J. Lee, "Polyphenols extracted from hibiscus sabdariffa L. inhibited lipopolysaccharide-induced inflammation by improving antioxidative conditions and regulating cyclooxygenase-2 expression," Bioscience, Biotechnology and Biochemistry, vol. 73, no. 2, pp. 385–390, 2009.

[55] O. Carvajal-Zarralab, P. M. Hayward-Jones, Z. Orta-Flores et al., "Effect of hibiscus sabdariffa L. dried calyx ethanol extract on fat absorption-excretion, and body weight implication in rats," Journal of Biomedicine and Biotechnology, vol. 2009, Article ID 394592, 5 pages, 2009.

[56] B. H. Ali, H. M. Mousa, and S. El-Mougy, "The effect of a water extract and anthocyanins of Hibiscus sabdariffa L. on paracetamol-induced hepatotoxicity in rats," Phytotherapy Research, vol. 17, no. 1, pp. 56–59, 2003.

[57] T. H. Tseng, E. S. Kao, C. Y. Chu, F. P. Chou, H. W. Lin Wu, and C. J. Wang, "Protective effects of dried flower extracts of Hibiscus sabdariffa L. against oxidative stress in rat primary hepatocytes," Food and Chemical Toxicology, vol. 35, no. 12, pp. 1159–1164, 1997.

[58] J. Y. Liu, C. C. Chen, W. H. Wang, J. D. Hsu, M. Y. Yang, and C. J. Wang, "The protective effects of Hibiscus sabdariffa extract on CCl 4-induced liver fibrosis in rats," Food and Chemical Toxicology, vol. 44, no. 3, pp. 336–343, 2006.

[59] Y. C. Chang, H. P. Huang, J. D. Hsu, S. F. Yang, and C. J. Wang, "Hibiscus anthocyanins rich extract-induced apoptotic cell death in human promyelocytic leukemia cells," Toxicology and Applied Pharmacology, vol. 205, no. 3, pp. 201–212, 2005.

[60] H. H. Lin, J. H. Chen, W. H. Kuo, and C. J. Wang, "Chemo-preventive properties of Hibiscus sabdariffa L. on human gastric carcinoma cells through apoptosis induction and JNK/p38 MAPK signaling activation," Chemico-Biological Interactions, vol. 165, no. 1, pp. 59–75, 2007.

[61] E. O. Farombi and A. Fakoya, "Free radical scavenging and antigenotoxic activities of natural phenolic compounds in dried flowers of Hibiscus sabdariffa L.," Molecular Nutrition and Food Research, vol. 49, no. 12, pp. 1120–1128, 2005.

[62] T. O. Fakaye, A. Pal, D. U. Bawankule, and S. P. S. Khanuja, "Immunomodulatory effect of extracts of Hibiscus sabdariffa L. (family malvaceae) in a mouse model," Phytotherapy Research, vol. 22, no. 5, pp. 664–668, 2008.

[63] M. Y. Yang, C. H. Peng, K. C. Chan, Y. I. S. Yang, C. N. Huang, and C. J. Wang, "The hypolipidemic effect of Hibiscus sabdariffa polyphenols via inhibiting lipogenesis and promoting hepatic lipid clearance," Journal of Agricultural and Food Chemistry, vol. 58, no. 2, pp. 830–839, 2010.

[64] C. N. Huang, K. C. Chan, W. T. Lin, S. L. Su, C. J. Wang, and C. H. Peng, "Hibiscus sabdariffa inhibits vascular smooth muscle cell proliferation and migration induced by high glucose-A mechanism involves connective tissue growth factor signals," Journal of Agricultural and Food Chemistry, vol. 57, no. 8, pp. 3073–3079, 2009.

[65] R. Mohamed, J. Fernández, M. Pineda, and M. Aguilar, "Roselle (Hibiscus sabdariffa) seed oil is a rich source of"
[98] M. De Fátima Agra, P. F. De Freitas, and J. M. Barbosa-Filho, "Synopsis of the plants known as medicinal and poisonous in Northeast Brazil," Brazilian Journal of Pharmacognosy, vol. 17, no. 1, pp. 114–140, 2007.

[99] L. Balestrin, J. F. Gaspar Dias, O. G. Miguel, D. S. G. Dall'Stella, and M. D. Miguel, "Contribution to the phytochemical study of Dorstenia multiformis Miguel (Moraceae) with approach in antioxidant activity," Brazilian Journal of Pharmacognosy, vol. 18, no. 2, pp. 230–235, 2008.

[100] M. M. Iwu, J. E. Jackson, J. D. Tally, and D. L. Klayman, "Evaluation of plant extracts for antileishmanial activity using a mechanism-based radiorepirometric microtechnique (RAM)," Planta Medica, vol. 58, no. 5, pp. 436–441, 1992.

[101] M. Kawasaki, T. Hayashi, M. Arisawa et al., "Structure of scoparic acid A, a new labdane-type diterpenoid from A Paraguayan crude drug 'Typycha Kuratu' (Scoparia Dulcis L.)," Chemical and Pharmaceutical Bulletin, vol. 35, no. 9, pp. 3963–3966, 1987.

[102] M. Ahsan, S. K. N. Islam, A. I. Gray, and W. H. Stimson, "Cytotoxic diterpenes from Scoparia dulcis," Journal of Natural Products, vol. 66, no. 7, pp. 958–961, 2003.

[103] Y. Li, X. Chen, M. Satake, Y. Oshima, and Y. Ohizumi, "Acetylated flavonoid glycosides potentiating NGF action from Scoparia dulcis," Journal of Ethnopharmacology, vol. 67, no. 4, pp. 725–727, 2004.

[104] K. Hayashi, S. Niwayama, T. Hayashi, R. Nago, H. Ochiai, M. Babincová, and P. Sourivong, "Free radical scavenging by inhibiting α-tumor activity of tumor necrosis factor-κ (TNF-κ) in human promyelocytic leukemia cells," Anticancer Research, vol. 25, no. 3, pp. 665–660, 2005.

[105] S. M. Freire, L. M. Torres, N. F. Roque, C. Souccar, and A. J. Lapa, "Analogic activity of a triterpenic isolated from Scoparia dulcis L. Its structure, H+K+-adenosine triphosphatase inhibitory activity and pharmacokinetic behaviour in rats," Chemical and Pharmaceutical Bulletin, vol. 38, no. 10, pp. 2740–2745, 1990.

[106] K. Hayashi, S. Niwayama, T. Hayashi, R. Nago, H. Ochiai, and N. Morita, "In vitro and in vivo antiviral activity of scopadulcic acid B, isolated from the medicinal plant Scoparia dulcis L.," Oncology, vol. 50, no. 2, pp. 100–103, 1993.

[107] T. Hayashi, K. Okamura, M. Kakemi et al., "Scopadulcic acid B, a new tetracyclic diterpenoid from Scoparia dulcis L. Its structure, H+K+-adenosine triphosphatase inhibitory activity and pharmacokinetic behaviour in rats," Chemical and Pharmaceutical Bulletin, vol. 38, no. 10, pp. 2740–2745, 1990.

[108] Y. Li and Y. Ohizumi, "Search for constituents with neurotrophic factor-potentiating activity from the medicinal plants of Paraguay and Thailand," Yakugaku Zasshi, vol. 124, no. 7, pp. 417–424, 2004.

[109] M. Ahmed, H. A. Shikha, S. K. S. Sadhu, M. T. Rahman, and B. K. Datta, "Analgesic, diuretic, and anti-inflammatory principle from Scoparia dulcis," Pharmazie, vol. 56, no. 8, pp. 657–660, 2001.

[110] M. Babincová and P. Sourivong, "Free radical scavenging activity of Scoparia dulcis extract," Journal of Medicinal Food, vol. 4, no. 3, pp. 179–181, 2001.

[111] T. K. Praveen, S. Dharmaraj, J. Bajaj et al., "Hepatoprotective activity of petroleum ether, diethyl ether, and methanol extract of Scoparia dulcis L. against CCl4-induced acute liver injury in mice," Indian Journal of Pharmacology, vol. 41, no. 3, pp. 110–114, 2009.

[112] W. D. Ratnasooriya, J. R. A. C. Jayakody, G. A. S. Premakumara, and E. R. H. S. S. Edirweera, "Antioxidant activity of water extract of Scoparia dulcis," Fitoterapia, vol. 76, no. 2, pp. 220–222, 2005.

[113] J. C. Tsai, W. H. Peng, T. H. Chiu et al., "Hepatoprotective effect of scoparia dulcis on carbon tetrachloride induced acute liver injury in mice," American Journal of Chinese Medicine, vol. 38, no. 4, pp. 761–775, 2010.

[114] M. Latha, K. M. Ramkumar, L. Pari, P. N. Damodaran, V. Rajeshkanna, and T. Suresh, "Phytochemical and antimicrobial study of an antidiabetic plant: Scoparia dulcis L," Journal of Medicinal Food, vol. 9, no. 3, pp. 391–394, 2006.

[115] M. G. Phan, T. S. Phan, K. Matsunami, and H. Otsuka, "Chemical and biological evaluation on scopadulcaine-type diterpenoids from Scoparia dulcis of Vietnamese origin," Chemical and Pharmaceutical Bulletin, vol. 54, no. 4, pp. 546–549, 2006.

[116] M. S. Gachet, J. S. Lecaro, M. Kaiser et al., "Assessment of anti-protozoal activity of plants traditionally used in Ecuador in the treatment of leishmaniasis," Journal of Ethnopharmacology, vol. 128, no. 1, pp. 184–197, 2010.

[117] M. Babincová, K. Schronerová, and P. Sourivong, "Antilucre activity of water extract of Scoparia dulcis," Fitoterapia, vol. 79, no. 7–8, pp. 587–588, 2008.

[118] S. Mesia-Vela, M. Bielavsky, L. M. B. Torres et al., "In vivo inhibition of gastric acid secretion by the aqueous extract of Scoparia dulcis L. in rodents," Journal of Ethnopharmacology, vol. 111, no. 2, pp. 403–408, 2007.

[119] L. Pari and S. Venkateswaran, "Hypoglycaemic activity of Scopariadulcis L. extract in alloxan induced hyperglycaemic rats," Phytotherapy Research, vol. 16, pp. 662–664, 2002.

[120] J. E. Beh, J. Latip, M. P. Abdullah, A. Ismail, and M. Hamid, "Scoparia dulcis (SDF7) endowed with glucose uptake properties on L6 myotubes compared insulin," Journal of Ethnopharmacology, vol. 129, no. 1, pp. 23–33, 2010.

[121] L. Pari, M. Latha, and C. A. Rao, "Effect of Scoparia dulcis extract on insulin receptors in streptozotocin induced diabetic rats: Studies on insulin binding to erythrocytes," Journal of Basic and Clinical Physiology and Pharmacology, vol. 15, no. 3–4, pp. 223–240, 2004.

[122] H. Lorenzi, Arvores brasileiras: Manual de identificação e cultivo de plantas arbóreas nativas do Brasil, vol. 1, Plantarum, Nova Odessa, Brazil, 2nd edition, 1998.

[123] J. C. A. Tanaka, C. C. Da Silva, B. P. Dias Filho, C. V. Nakamura, J. E. De Carvalho, and M. A. Foglio, "Chemical constituents of Luehea divaricata Mart. (Tiliaceae)," Quimica Nova, vol. 28, no. 5, pp. 834–837, 2005.

[124] G. M. Barroso, Sistematica de angiospermas do Brasil, vol. 1, EDUSP, São Paulo, Brazil, 1978.

[125] H. J. Choi, J. S. Eun, B. G. Kim, S. Y. Kim, H. Jeon, and Y. Soh, "Vitexin, an HIF-1α inhibitor, has anti-metastatic potential in PC12 cells," Molecules and Cells, vol. 22, no. 3, pp. 291–299, 2006.

[126] J. H. Kim, B. C. Lee, J. H. Kim et al., "The isolation and antioxidative effects of vitexin from Acer palmatum," Archives of Pharmacal Research, vol. 28, no. 2, pp. 195–202, 2005.

[127] Y. W. Hsuan, W. T. Yew, P. L. V. Hong et al., "Cancer chemopreventive activity of maslinic acid: suppression of COX-2 expression and inhibition of NF-KB and AP-1 activation in raji cells," Planta Medica, vol. 77, no. 2, pp. 152–157, 2011.

[128] C. Li, Z. Yang, C. Zhai et al., "Maslinic acid potentiates the anti-tumor activity of tumor necrosis factor α by inhibiting NF-κB signaling pathway," Molecular Cancer, vol. 9, article no. 73, 2010.
[129] J. B. Müller, C. S. Ceron, V. T. Kuntz, and P. Pozzatti, "Avaliação da Suscetibilidade Antifúngica e Antibacteriana do Extrato Bruto e Frações das Folhas de Luehea divaricata Martius," in Anais da 588 Reunião Anual da SBPC, Florianópolis, Brazil, 2006.

[130] A. E. Bighetti, M. A. Antônio, A. Possent, M. A. Foglio, M. G. Siqueira, and J. E. Carvalho, "Efeitos da administração aguda e subcrónica da Luehea divaricata Martus et Zuccarini," *Lecta*, vol. 22, no. 1/2, pp. 53–58, 2004.

[131] L. P. Felício, E. M. Silva, V. Ribeiro et al., “Mutagenic potential and modulatory effects of the medicinal plant Luehea divaricata (Malvaceae) in somatic cells of Drosophila melanogaster: SMART/wing,” *Genetics and Molecular Research*, vol. 10, no. 1, pp. 16–24, 2011.

[132] S. Zacchino, C. Santecchia, S. Lopez et al., “In vitro antifungal evaluation and studies on mode of action of eight selected species from the Argentina flora,” *Phytotherapy*, vol. 5, pp. 389–395, 1998.

[133] R. C. Mendonca, J. M. Felfili, B. M. T. Walter et al., “Flora vascular do cerrado,” in *Cerrado: ambiente e flora vascular do cerrado*, pp. 289–556, Planaltina, 1998.

[134] S. Solon, L. Lopes, P. T. Sousa-Júnior, and G. Schmeda-Hirschmann, “Free radical scavenging activity of Lafoensia pacari,” *Journal of Ethnopharmacology*, vol. 72, pp. 173–178, 2000.

[135] A. P. Rogerio, C. Fontanari, M. C. C. Melo et al., “Anti-inflammatory, analgesic and anti-oedematous effects of Lafoensia pacari extract and ellagic acid,” *Journal of Pharmacy and Pharmacology*, vol. 58, no. 9, pp. 1265–1273, 2006.

[136] A. P. Rogerio, C. Fontanari, É. Borducchi et al., “Anti-inflammatory effects of Lafoensia pacari and ellagic acid in a murine model of asthma,” *European Journal of Pharmacology*, vol. 580, no. 1-2, pp. 262–270, 2008.

[137] M. P. Porto et al., “Avaliação tóxico-genética do extrato de Lafoensia pacari em células somáticas de Drosophila melanogaste,” in *Resumos do 54 Congresso Brasileiro de Genética*, 2008.

[138] S. Murakami, Y. Isobe, H. Higima, H. Nagai, M. Muramatu, and S. Otomo, “Inhibition of gastric H+K+ ATPase and acid secretion by ellagic acid,” *Planta Medica*, vol. 57, no. 4, pp. 305–308, 1991.

[139] P. I. Akubue and S. J. Stohs, “Endrin-induced production of nitric oxide by rat peritoneal macrophages,” *Toxicology Letters*, vol. 62, no. 2-3, pp. 311–316, 1992.

[140] L. Ramanathan and N. P. Das, “Inhibitory effects of some natural products on metal-induced lipid oxidation in cooked fish,” *Biological Trace Element Research*, vol. 34, no. 1, pp. 35–44, 1992.

[141] N. T. Sartori and D. T. O. Martins, “Screening’ farmacológico de plantas popularmente utilizadas como antiúlceras em Mato Gross,” in *Simpósio de plantas medicinais do Brasil*, p. 105, Florianópolis, bRAZIL, 1996.

[142] P. Tamashiro Filho, *Avaliação da atividade antiúlcera do extrato bruto metanólico de Luehea pacari St. Hil. (manga Brava)*, M.S. thesis, Universidade Federal de Mato Grosso, Cuiabá, Brazil, 1999.

[143] A. M. S. S. Beserra, *Avaliação da atividade gastroprotetora do ácido elágico em modelos animais*, M.S. thesis, Universidade Federal de Mato Grosso, Cuiabá, Brazil, 2008.

[144] V. Da Mota Menezes, A. N. Atallah, A. J. Lapa, and W. R. Catapani, “Assessing the therapeutic use of Laofoensia pacari St. Hil. extract (Mangava-Brava) in the eradication of Helicobacter pylori: double-blind randomized clinical trial,” *Helicobacter*, vol. 11, no. 3, pp. 188–195, 2006.