

Ethnobotany of Medical Plants: Diversity and use in Brazilian Quilombol Communities

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Abstract— *ethnobotany has been an excellent research tool in understanding the various ways that relate physics, culture and spirituality to plants in traditional quilombol communities. Studies on medicinal plants, which demonstrate their diversity and use by quilombola communities, demonstrate their relevance, given factors such as cultural influence, ancient knowledge passed on to each generation bringing them to scientific knowledge. In this context, the present study aimed to conduct a survey on the diversity and use of medicinal plants by quilombola communities, through the review of articles from 2014 to 2019 obtained by the SciELO platform, LILACS and CAPES Magazine Portal. With the study, it is clear what is the importance or fundamental knowledge about the diversity and use of these medicinal plants, and the lack of knowledge of an important risk factor for poisoning for the residents of these communities, thus alerting the need for education and preventive activities, as well as the publication and dissemination of research with similar objectives, are those that best use above as their basic and nutritional needs.*

Keywords— *Quilombol community; Traditional knowledge; Phytotherapeutic species.*

I. INTRODUCTION

Ethnobotany can be understood as the study of human populations and their ecological, genetic, evolutionary, symbolic and cultural interactions with plants, which seeks to interrelate the two elements, the plant with structure-functions and the human being (REIS et al., 2017). In Brazil, phytotherapeutic science is a therapeutic practice encouraged by the Ministry of Health and has made considerable progress due to its proven effectiveness (SALES et al., 2015).

Brazil, in turn, a country resulting from the strong cultural influence of indigenous people mixed with African traditions, originating from three centuries of trafficking in black slaves and the European culture brought by the colonizers, brings with it a diversity of ethnic groups, many of those found in the northeast region (BARACUHY et al., 2014).

Biodiversity has been the subject of research in the ethnobiological and ethnoecological fields, in order to

assist local and regional development programs, as well as environmental conservation policies (BARACUHY et al., 2014). Many peoples associate the use of natural resources with their conservation, as they are directly dependent on these resources for their subsistence, economic and social development (LIMA et al., 2012). In this context, studies of medicinal plants in the semi-arid region of Northeastern Brazil have grown progressively (REIS et al., 2017).

Medicinal plants, which are any vegetable that has substances that can be used for therapeutic purposes (Resolution CFN, 2007), have been used, for several generations, by quilombolas through the traditional knowledge transmitted by parents and grandparents, with the objective of preventing and treating common illnesses in their community, since such knowledge is inserted in their culture (GUIMARÃES et al., 2019).

The perception of the medicinal power of plants and the use of their leaves, flowers, stems, seeds and roots correspond to a set of knowledge that is transmitted orally

from generation to generation, enriching the cultural framework of traditional communities, at the same time which challenges phytogeographic, pharmaceutical, botanical studies and their methodological keys for identifying species, such as, for example, the work of Carvalho et al., (2019) and Pereira Júnior et al., (2014).

In a data survey conducted by Guimarães et al., (2019), based on quilombola reports, it was observed the importance of expanding scientific studies that prove the effectiveness of plants for certain purposes, as many plants can be potentially toxic, have medicinal properties in lower concentrations, as well as cause undesirable side effects (GUIMARÃES et al., 2019).

The World Health Organization (WHO) estimates that approximately 80% of the world population depends on home remedies prepared with traditional knowledge of the use of plants. However, the continued use of these plants may be threatened due to the interference of factors external to the group's social dynamics, such as the exposure of communities to external economic and cultural pressures. However, as the relationship between man and the territory is transformed by modernization in the countryside, the network for transmitting knowledge about plants starts to change (SALES et al., 2015).

In this way, the study on medicinal plants, which demonstrates their diversity and use by quilombola communities, demonstrates their relevance, given factors such as cultural influence, ancient knowledge passed on to each generation, bringing them to scientific knowledge. This review aims to survey the ethnobotany of medicinal plants in terms of their diversity and use, traditionally known by quilombola communities.

The use of plants, in addition to other natural products, in the prevention and cure of diseases, can be identified in different forms of social organization, constituting itself as an ancient practice associated with popular and medical knowledge and religious rituals (FERNANDES, 2004).

In Brazil, the National Policy on Medicinal Plants and Herbal Medicines, through Decree No. 5,813, of June 22, 2006 (BRAZIL, 2006), defines medicinal plant as being a plant species, cultivated or not, from which products with medicinal properties Healing materials can be obtained and used in the human species for therapeutic purposes.

In this sense, the knowledge acquired and accumulated by traditional communities over the centuries has shown a close relationship between these communities and the natural environment, proving to be

fundamental for the maintenance of biological diversity, using natural resources rationally (MING, 2009).

According to Silva (2019), quilombola communities, as well as other traditional communities, preserve valuable knowledge about medicinal plants, one of the causes of the intense relationship between these communities and the environment in which they are inserted is the provision of countless resources that nature disposes of them and that are fundamental for their survival and reproduction, contributing to the continuation of quilombos, guaranteeing the survival of this population. This knowledge has, over the years, constituted an important socioeconomic factor in rural communities, being passed on from generation to generation. In many rural communities, knowledge and use of plants represent the only option for treating illnesses, due to limited access to health programs.

In this way, studies that emphasize that ethnobotany, and at the same time of human society, past and present, and their ecological, genetic, evolutionary, symbolic and cultural interactions with plants, allow to conquer, with approach and experience, the rescue of the knowledge of popular medicine and the relationship of affinities between humans and plants.

II. MATERIALS AND METHODS

This bibliographic research was carried out from August to November 2019 and includes articles published from 2014 to 2019, with the keywords: "quilombola community", "traditional knowledge", "medicinal plants", used in the SciELO, LILACS platform and CAPES Journal Portal. 26 articles were selected, which again passed through a filter, which excluded studies in duplicates; studies with themes of works not related to the research interest and articles that related only toxic plants. Thus, 20 articles remained, which were used only those that described quilombola communities, the diversity of medicinal plants and their use.

DATA ANALYSIS

Based on the ethnobotanical data collected by most of the articles, quantitative analyzes of the information were carried out, with the objective of verifying the medicinal plants most cited in the articles and the use of quilombola peoples, which contribute to the preservation of health and quality of life, as well as maintenance of medicinal resources within these communities. The method consists of the ratio of the number of information that was cited in the articles and a given species to the number of informants that cited the species (SILVA et al., 2010).

III. RESULTS AND DISCUSSIONS

A total of seven articles were used, published between 2014 and 2019 and it was observed that ethnobotany is a knowledge of great relevance for society, especially for quilombola communities. Oliveira (2015) and Reis (2017) point out that the majority of those who know popular knowledge are women, and this information has been perpetuating over time through grandparents who passed it on to their children and so on. However, Santos (2014) warns of an increasingly growing fact, which is the lack of interest of young people in the community in wanting to learn about old knowledge, sometimes because they are attached to new treatments as well as to disbelief by medicinal plants.

In the interview conducted by Reis et al., (2017), it can be observed that the knowledge informed by the interviewees about medicinal plants, is vast and of great importance to the community, however, the absence of certain information, could also emphasize, as for example, the risks to humans that toxic plants may have. The types and quantity of medicinal plants mentioned by the study by Beltreschi (2017) differ from the research carried out by Conde (2017), since the locality and the communities are different, demonstrating that knowledge is not uniform among quilombolas.

Similar to the results of Reis et al., (2017) the numerical difference of the plants mentioned by the collaborators, was possibly associated with the fact that the knowledge is linked to a single holder of local knowledge or restricted only to a family nucleus, as well as the knowledge may have been acquired individually through contact with other quilombos and not have been shared.

When analyzing knowledge according to the age group of the interviewees, the study carried out by Reis and collaborators, analyzes age and reveals that older people (over 50 years old) have greater knowledge in relation to younger age groups. The relationship between the age of the informants and the level of knowledge has also been reported by other ethnobotanical works

(ALBUQUERQUE et al., 2010), reaffirming that older people have greater knowledge in relation to young people.

Some species of medicinal plants, shown in Table 1, are quite common in most quilombola communities mentioned in different studies analyzed. In this sense, it is important to carry out ethnobotanical surveys of medicinal plants in quilombola communities, as they have extensive knowledge in the use of these medicinal resources, as well as in their way that is directly related to the culture and beliefs of these communities, as is the case of use them for rituals and baths (THIAGO et al., 2014).

In the quilombola populations, during the interviews carried out, a common pattern was observed in the answers when questioned the reason why medicinal plants are used. In the study by Oliveira et al., (2015), he indicated for diseases of the respiratory system, diseases of the digestive system, various pains, soothing / insomnia and high blood pressure, already in the research by Reis et al., (2017) they show interest in solve diseases and symptoms of the digestive, respiratory, circulatory system and skin diseases.

In research carried out in different regions of the world (ABE; OHTANI, 2013; NGO; KIM, 2014; TETIK et al., 2013), the respiratory system and the digestive system are the most relevant for traditional communities, according to a high degree consensus among respondents. The reason for this result of diseases of the respiratory system being more common is due to the fact that its symptoms are well defined, favoring the identification of the disease. Another reason for these systems to have the highest values is the precarious socioeconomic and health conditions in which these populations live (BELTRESCHIL et al., 2018).

Table 1: Medicinal plants most cited in studies carried out in Brazilian quilombol communities between the years 2014 to 2019.

FAMILY	POPULAR NAME	SCIENTIFIC NAME	PART USED	BIOLOGICAL ACTIVITY
Lamiaceae	Anador (BELTRESCHI, 2018)	<i>Coleus barbatus</i> (Andrews) Benth. ex G. Don	Leaves	Pain
Lamiaceae	Alecrim (REIS et al., 2017; OLIVEIRA, 2015)	<i>Rosmarinus officinalis</i> L.	Whole plant	Intestinal gases, nervousness, tonic
Verbenaceae	Erva cidreira (REIS et al., 2017; OLIVEIRA, 2015)	<i>Lippia alba</i> (Mill.) N.E.Br. ex P. Wilson.	Leaves	Soothing, insomnia, nerves, colds, heart, painkiller
Apiaceae	Erva doce (OLIVEIRA, 2015)	<i>Pimpinella anisum</i> L.	Branch, leaf and seeds	Soothing, gas, pain
Fabaceae	Umburana / Amburana/ imburana de cheiro (REIS et al., 2017; OLIVEIRA, 2015)	<i>Amburana cearensis</i> (Allemão) A. C. Sm.	Trunk, seeds and bark	Digestion, flu, hepatitis, bronchitis, diarrhea, stomach and sinusitis
Anacardiaceae	Aroeira (REIS et al., 2017; BELTRESCHI, 2018)	<i>Schinus terebentifolius</i> Raddi	Leaves and bark of the trunk	Natural antibiotic; cough; anemia and tuberculosis
Rutaceae	Arruda (REIS et al., 2017; BELTRESCHI, 2018)	<i>Ruta graveolens</i> L.	Leaves	Inflammation, liver, diarrhea, colic
Lamiaceae	Manjeriçã/ Manjerona (REIS et al., 2017; BELTRESCHI, 2018)	<i>Ocimum basilicum</i> L.	Leaves and seeds	Cold and cough
Lamiaceae	Boldo (REIS et al., 2017; OLIVEIRA, 2015)	<i>Plectranthus barbatus</i> Andrews	Leaves	Diabetes, diuretic, cough, cramps, inflammation
Poaceae	Capim Santo (REIS et al., 2017; BELTRESCHI, 2018)	<i>Cymbopogon citratus</i> (DC.) Stapf	Leaves and bark of the trunk	Soothing, tranquilizer, repellent, allergies, sleeping pills
Asphodelaceae	Babosa (REIS et al., 2017; OLIVEIRA, 2015)	<i>Aloe vera</i> (L.) Burm. f.	Leaves	Natural healing, hemorrhoids, gases, laxative, prostate
Fabaceae	Pau de rato (REIS et al., 2017)	<i>Cenostigma bracteosum</i> (Tul.) E. Gagnon & G.P. Lewis	Leaves and bark of the trunk	Soothing and relaxing

Amaranthaceae	Mastruz (REIS et al., 2017; OLIVEIRA, 2015)	<i>Dysphania ambrosioides</i> (L.) Mosyakin & Clemants	Leaves	Inflammation and injuries
Lamiaceae	Hortelã (REIS et al., 2017; OLIVEIRA, 2015)	<i>Mentha piperita</i> L.	Leaves	Colds and flu
Asteraceae	Camomila (REIS et al., 2017; BELTRESCHI, 2018)	<i>Matricaria chamomilla</i> L.	Leaves and flowers	Relaxing, soothing, nerves, soothing
Fabaceae	Angico (REIS et al., 2017)	<i>Anadenanthera colubrina</i> (Vell.) Brenan	Trunk bark	Anemia, cough, tuberculosis, insecticide, inflammation, throat, arthritis, pain, rheumatism

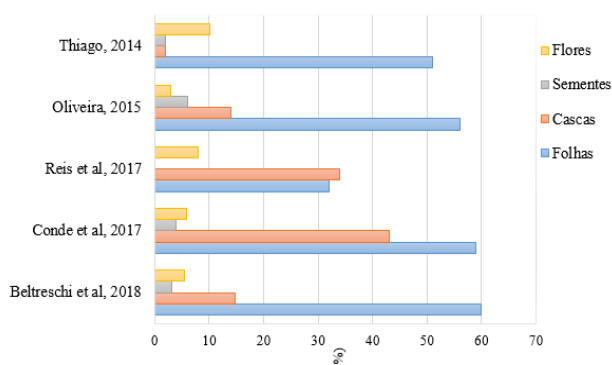


Fig.1: Parts most used in drug preparations in quilombola communities

According to a survey conducted by Beltreschi et al., (2018), the parts indicated for greater medicinal use are the leaves, followed by the bark, flowers and seeds. In the study with women from the quilombola community in Furadinho in the municipality of Vitória da Conquista in the state of Bahia, there was a predominance in the use of leaves, with 4% of the interviewees declared using the leaves together with seeds and 3% of the interviewees declared using the leaves. Leaves together with the flower (OLIVEIRA, 2015), which shows similes results in different regions of the country (Figure 1).

The National Health Surveillance Agency (ANVISA) regularly publishes the list of authorized species to be commercialized, highlighting the safety and risks for the patient (ANVISA, 2015). The list is made up of 71 plant species, for which research and investment are prioritized, with the aim of being used safely and effectively in their different forms of presentation: fresh

plant material, dry plant material, manipulated and industrialized medicines (Sales et al., 2015).

When comparing the table rewritten in the present study to ANVISA's list of medicinal plants allowed for use, the total of 16 plants cited, only 4 (*Amburana cearensis* (Allemão) A. C. Sm.; *Ocimum basilicum* L.; *Dysphania ambrosioides* (L.) Mosyakin & Clemants were not on ANVISA's list, the others present (*Coleus barbatus* (Andrews) Benth. ex G. Don., *Rosmarinus officinalis* L., *Lippia alba* (Mill.) N.E.Br. ex P. Wilson, *Pimpinella anisum* L., *Schinus terebinthifolius* Raddi, *Ruta graveolens* L., *Plectranthus barbatus* Andrews, *Cymbopogon citratus* (DC) Staupf., *Aloe vera* (L.), *Mentha piperita* L., *Matricaria chamomilla* L., *Anadenanthera colubrina* (Vell.) Brenan).

According to Ndhlala (2013), the lack of evidence of the effectiveness of some plants, which may contain toxic substances, which affect vital organs, while some can affect the main functional systems of the body, such as the central nervous system (CNS), interfering with coordination nerve functions of the body. Metabolic toxins affect organs such as kidneys, liver, heart and lungs, depending on the route of administration, stage of growth or part of the plant, amount consumed, species and susceptibility of the victim, there is a need for registration and dissemination of these plants, through booklets, lectures, educational games and other tools, in order to contribute to the passage of traditional knowledge to future generations, as well as to promote safety while using them.

Therefore, it is necessary to point out the agroecology used by these communities, whether improved, or to improve the agroecological technologies of those who use medicinal plants, as well as to learn about their diversity

and use to counter conventional production for those who are unaware of more advanced models. Sustainable and that the knowledge and experiences mentioned in these articles are strengthened by the creation of a national benefit sharing fund, aimed at the conservation of medicinal plants of agrobiodiversity and the implementation of the rights of these quilombos, in order to adopt specific laws to promote the use sustainability of agricultural biodiversity and ensure due legal space on the use and diversity in these local agroecological systems.

IV. CONCLUSION

In the sample universe of this review, it was found that less than half of the populations cited in the articles had knowledge about traditionally used medicinal plants, in this context, the old quilombolas, reveal that they have the ethnobotanical knowledge of the plants, however, the frequent report of loss of interest by young quilombolas on the topic, which causes this knowledge to be lost more and more.

Through this review, it was observed from the reports described by the authors, that public programs and policies are not always oriented towards the conservation, diversity, use of medicinal plants and the implementation of quilombola rights in specific laws. So that these laws open spaces for such programs and policies to strengthen and reframe knowledge for the new quilombol generations.

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