**Diversitas Journal**
ISSN 2525-5215
Volume 8, Número 1 (jan./mar. 2023) p. 0062 – 0070
https://diversitasjournal.com.br/diversitas_journal

# Use of medicinal plants by residents in a rural community in southern Piauí

# Uso de plantas medicinais por moradores em uma comunidade rural no sul do Piauí

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## ABSTRACT

Over time populations have been using natural resources such as medicinal plants for the treatment of various diseases. In recent decades, interest has been increasing in trying to understand the relationship between humans and plants. This study aimed to identify medicinal plants used by residents in a rural community in the municipality of Bom Jesus, South of Piauí. An open questionnaire with 10 questions was applied with residents in a rural community, with the objective of analyzing the main causes that motivated the use and importance of the use of medicinal plants in the treatment of diseases. As well as the ethnobotanical aspects (popular name, used parts, forms of preparation and therapeutic purposes), where they were obtained and where popular knowledge came from. It was possible to identify the use of 14 species, distributed in 14 kinds and 11 botanical families. The family Lamiaceae with 5 species was the most cited. The most cited species were Mint, Lemon Balm, "Malvão", Orange and "Amburana". Leaves are the most used plant parts in the preparation of medicines (78.5%), followed by seeds (14.2%) and bark and seeds (7.1%). Most indications are for stomach and flu problems. The residents of the Eugenópolis community know a variety of medicinal plants belonging to various botanical families. The sharing of traditional knowledge about medicinal plants, forms of preparation and consumption is passed down from generation to generation.

**INFORMAÇÕES DO ARTIGO**

***Histórico do Artigo:***
Submetido: 12/04/2022
Aprovado: 31/10/2022
Publicação: 10/01/2023



**Keywords:**
Popular knowledge, phytotherapy, rural communities

## RESUMO

Ao longo do tempo as populações vêm utilizando os recursos naturais como as plantas medicinais, para o tratamento de diversas doenças. Nas últimas décadas vem aumentando o interesse em tentar entender a relação entre os seres humanos e as plantas. Esse estudo teve como objetivo a identificação de plantas medicinais usadas por moradores em uma comunidade rural do município de Bom Jesus, Sul do Piauí. Foi aplicado um questionário aberto com 10 perguntas com moradores em uma comunidade rural, com o objetivo de analisar as principais causas que motivaram o uso e a importância do uso de plantas medicinais no tratamento de doenças. Bem como os aspectos etnobotânicos (nome popular, partes usadas, formas de preparo, e fins terapêuticos), onde foram obtidos, de onde veio o conhecimento popular. Foi possível identificar a utilização de 14 espécies, distribuídas em 14 gêneros e 11 famílias botânicas. A família Lamiaceae com 5 espécies foi a mais citada. As espécies mais citadas foram Hortelã, Erva cidreira, Malvão, Laranja e Amburana. As folhas são as partes vegetais mais usadas no preparo de remédios (78,5%), seguidas pelas sementes (14,2%) e cascas e sementes (7,1%). A maioria das indicações são para problemas estomacais e gripais. Os moradores da comunidade Eugenópolis conhecem uma variedade de plantas medicinais pertencentes a diversas famílias botânicas. O compartilhamento dos saberes tradicionais sobre plantas medicinais, formas de preparo e consumo é passado de geração em geração.

***Palavras-Chave***:
Conhecimento popular, fitoterapia, comunidades rurais

*DOI:* 10.48017/dj.v8i1.2313

## Introduction

Brazil has the largest plant biodiversity in the world, so it arouses worldwide interest about plants that have pharmacological properties, rich in bioactive compounds of pharmaceutical interest (Santos et al., 2017).

The use of medicinal plants is an ancient practice and is related to indigenous, African and European immigrant cultures (Oliveira et al., 2016; Silva & Almeida, 2020). According to Rodrigues et al. (2011), about 82% of the Brazilian population uses medicinal plant products in their health care. Mainly due to the lack of access to traditional medicine (Gaspar, 2008; Schiavo et al., 2017).

Over time, man has been using medicinal plants to treat various diseases, that is, to use these resources with therapeutic purpose passed between generations through empirical knowledge (Nascimento et al., 2012). According to Cavalcante & Silva (2014) ethnobotanical studies are essential, because they help in the evaluation of how this knowledge is brought from their places of origin and is passed on to the other generations.

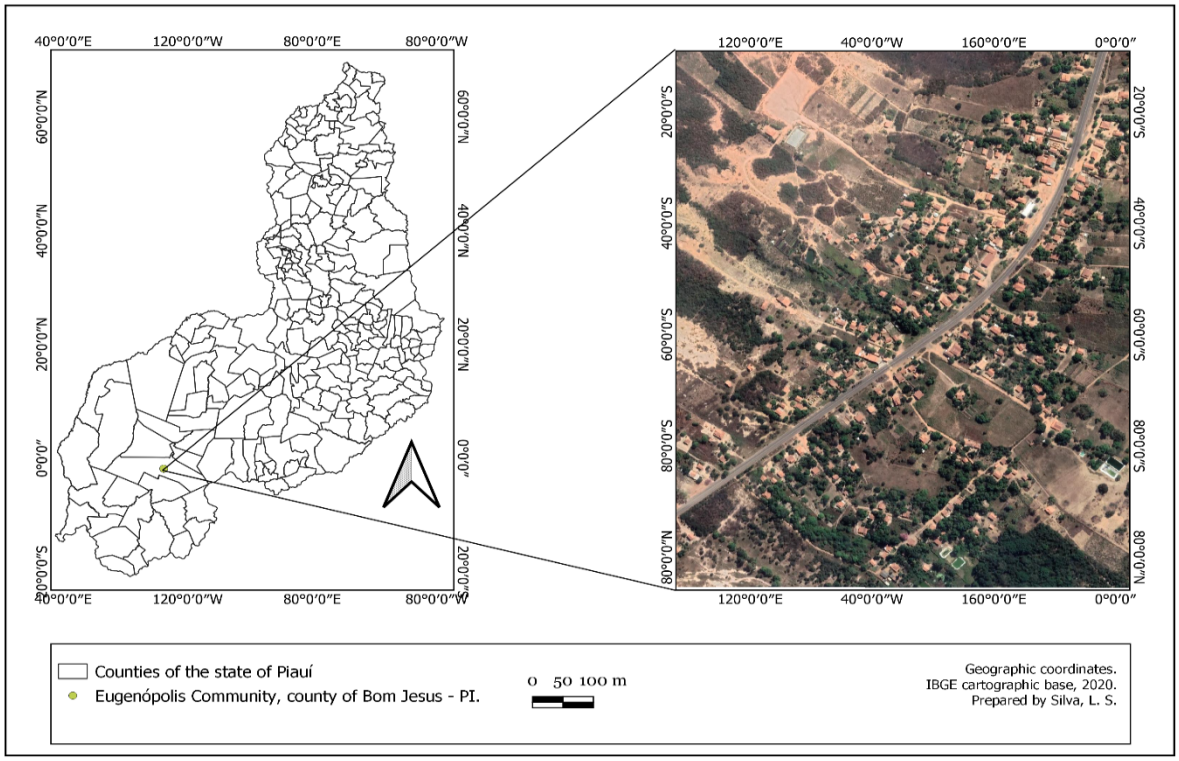
Medicinal plants are easy to obtain and are seen as safe and beneficial (Santana et al., 2014). However, in the scientific environment there is still not much knowledge about the safety and reliability of the use of most medicinal plants (Firmo et al., 2011). The presentation and appreciation of traditional knowledge of the use of medicinal plants in rural communities is very important, which justifies the accomplishment of this work, which aimed to identify medicinal plants used by residents in a rural community in the municipality of Bom Jesus Sul do Piauí.

## Methodological Procedure

The research was carried out in the Eugenópolis community, located in the rural area of the municipality of Bom Jesus, southern Piauí region (Figure 1). Being located in the following geographical coordinates (9° 12.793'S and 44° 26.471'O). According to Köppen classification, the climate of the region is type Aw (tropical climate with dry winter period), average temperature 26.7° C and average annual rainfall of 1002 mm (Alvares et al., 2013).

The methodology used in this study was based on a field research (data collection), where an open questionnaire with 10 questions was applied and an interview with 20 residents of the community. The following aspects were prioritized: ethnobotanicals - whether or not they use medicinal plants, preparation, parts used and information about the categories of use attributed to plants (therapeutic use) (Andrade et al., 2012). The ethnobotanical categories related to the use of medicinal plants, are those capable of promoting cure and prevention of diseases.

*Figure 1.*
*Location map of the state of Piauí, county of Bom Jesus and the Eugenópolis community.*




The identification of the species was made, first recognizing by the common name informed by the interviewed themselves. Subsequently, taxonomic identifications were performed through literature-based, electronic consultation on the Species Link website. The species were classified at family level, scientific name, common name, part used and indication of use for each plant mentioned. The botanical classification followed the APG IV system (Angiosperm Phylogeny Group, 2016). The name of the species was updated using the Brazil Flora Species List 2020.

## Results e Discussion

Through the interviews it was possible to identify the use of 14 species, distributed in 14 kinds and 11 botanical families used by community residents (Chart 1). The family Lamiaceae (5 species) was the most cited, the other families had one species each. The family Lamiaceae is also mentioned in other works (Gandolfo & Hanazaki, 2011; Brito et al., 2017), is considered one of the most common families within medicinal plants. These species are rich in essential oils, the smelly characteristic of these plants is commonly related to their medicinal effects (Amorozo, 2002).

**Chart 1.**

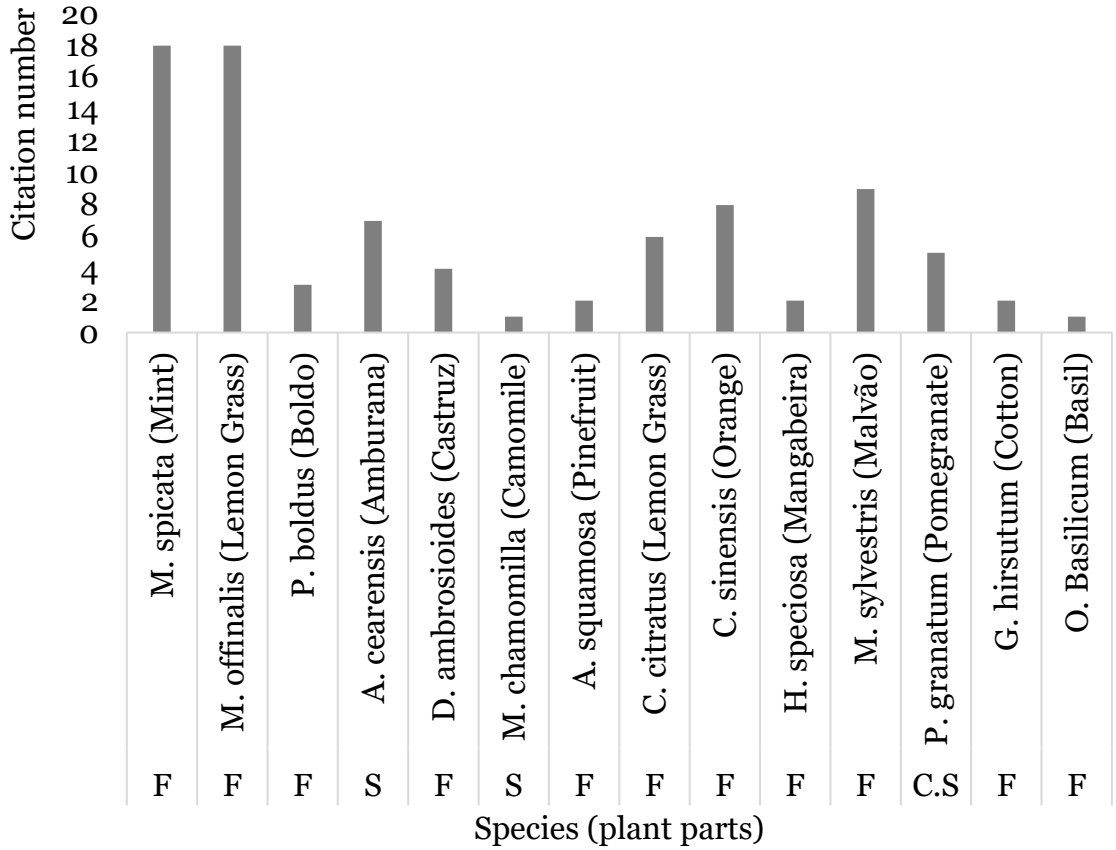
*List of families and botanical species indicated for the treatment of simple diseases by residents of the Eugenópolis community, Bom Jesus - PI.*

| **Family** | **Species** | **Popular name** |
|---|---|---|
| Lamiaceae | *Mentha spicata* L. | Mint |
| Lamiaceae | *Melissa officinalis* L. | Lemon Balm |
| Lamiaceae | *Plectranthus barbatus* Andr. | Bilberry |
| Fabaceae | *Amburana cearensis* (Allemao) ACSm. | "Amburana" |
| Amaranthaceae | *Dysphania ambrosioides* (L.) Mosyakin & Clemants | "Mastruz" |
| Asteraceae | *Matricaria chamomilla* L. | Camomile |
| Annonaceae | *Annona squamosa* L. | Pinefruit |
| Poaceae | *Cymbopogon citratus* (DC) Stapf | Lemon Grass |
| Rutaceae | *Citrus sinensis* (L.) Osbeck | Orange |
| Apocynaceae | *Hancornia speciosa* Gomes | "Mangabeira" |
| Lamiaceae | *Plectranthus amboinicus* (Lour.) Spreng. | "Malvão" |
| Lythraceae | *Punica granatum* L. | Pomegranate |
| Malvaceae | *Gossypium hirsutum* L. | Cotton |
| Lamiaceae | *Ocimum basilicum* L. | Basil |

The results indicate the preference of the residents for the plants in the treatment of illnesses. The most cited species were Mint, Lemon Balm, Malvão, Orange and Amburana (Figure 2). The species Mint was the most cited by residents of the community of Brenha, Redenção - CE (Santos et al., 2018). All interviewed said they cultivate medicinal plants because they are easily grown in their own backyards. According to Araújo and Lima (2019) this is a common practice used by many Brazilian families. In other communities in the Northeast region, the species Amburana is used in the treatment of inflammations and diseases associated with the respiratory system such as influenza, sinusitis, bronchitis and cough with proven efficacy (Silva & Freire, 2010; Santos et al., 2018).

**Figure 2.**

*Part of the medicinal plants used by the Eugenópolis community, Bom Jesus - PI. On what: F = leaf, S = seed and C. S. = bark and seeds.*




As observed in figure 2, leaves were the most indicated plant parts for the preparation of medicines (78.5%), followed by seeds (14.2%), bark and seeds (7.1%). Studies indicate that leaves were also the most used parts of the plant in the preparation of homemade medicine (David & Pasa, 2015; Merhy & Santos, 2017; Oliveira et al., 2018; Parente et al., 2022). Most active compounds are found in leaves, according to Brito et al. (2017), the preference for leaf in the preparation of homemade medicine is a good indication of plant conservation.

Most indications are for stomach problems followed by influenza, fever, natural calming and inflammation, in which they are prepared and consumed in the form of teas or juices (Mastruz), and are consumed on the same day they are prepared (Chart 2). These results were similar to those found by Freitas et al. (2012); Lopes et al. (2016), in which the diseases most treated with the use of medicinal plants in the Northeast region are those that harm the digestive and respiratory system.

**Chart 2.**

*List of species used for medicinal purposes in the Eugenópolis community, county of Bom Jesus – PI. On what: Conh. = Acquired knowledge, F = Family, Q. dia = Number of times a day they are ingested, Prep. = Way of preparation, Rest. = Result; Exc. = Excellent, Ef. Ad = Adverse effect and C. Med. = if they have already communicated to the doctor about the use of medicinal plants.*

| Species | Indication | Conh. | Q. dia | Prep. | Consumption | Rest. | Ef. Ad. | C. Med. |
|---|---|---|---|---|---|---|---|---|
| *M. spicata* (Mint) | Fever, flu | F | 2 | Tea | Same day | Exc | No | No |
| *M. officinalis* (Lemon Balm) | Soothing | F | 2 | Tea | Same day | Good | No | No |
| *P. boldus* (Boldo) | Intestine | F | 1 | Tea | Same day | Good | No | No |
| *A. cearensis* (Amburana) | Intestine | F | 4 | Tea | Same day | Good | No | No |
| *D. ambrosioides* (Mastruz) | Intestine | F | 4 | Juice | Same day | Good | No | No |
| *M. chamomilla* (Camomile) | Soothing | F | 1 | Tea | Same day | Good | No | No |
| *A. squamosa* (Pinefruit) | Stomach | F | 1 | Tea | Same day | Good | No | No |
| *C. citratus* (Lemon Grass) | Intestine | F | 3 | Tea | Same day | Good | No | No |
| *C. sinensis* (Orange) | Soothing | F | 2 | Tea | Same day | Good | No | No |
| *H. speciosa* (Mangabeira) | Inflammation | F | 2 | Tea | Same day | Good | Yes | No |
| *M. sylvestris* (Malvão) | Fever, Flu | F | 1 | Tea | Same day | Good | No | No |
| *P. granatum* (Pomegranate) | Fever, Flu | F | 2 | Tea | Same day | Good | No | No |
| *G. hirsutum* (Cotton) | Fever, Flu | F | 2 | Tea | Same day | Good | Yes | No |
| *O. basilicum* (Basil) | Soothing | F | 1 | Tea | Same day | Good | No | No |

On what: 1 = once a day, 2 = twice, 3 = three times and 4 = when feel pain.

For most of the people interviewed, the results of medicinal plants are good and excellent, only in two cases were recorded adverse effect, when they ingested tea made from the leaves of Mangabeira and Cotton (Chart 2). Similar results regarding the use of medicinal plants were found by Carvalho et al. (2013), the interviewed stated that they used the homemade medicine made with the plants when they are sick and also obtain positive results with this type of treatment.

All the interviewed people never reported to the doctor about the use of medicinal plants (Chart 2). However, it is worth mentioning that the vegetables used as medicines by populations are for the treatment of simple diseases, such as flu, colds and poor digestion, or complementary therapy in the treatments of some diseases because it is a low cost and effective alternative, as well as inheritance passed through generations over time. According to Melo et al. (2017), the consumption of these substances too much, without real scientific evidence can bring risks to cells, so it is important to communicate to the doctor about the use of medicinal plants.

Chart 2 shows that knowledge about medicinal plants and their preparations is passed on between generations. Similar results were found by Silva et al. (2012) and by Silva et al.

(2014), in surveys of the use of medicinal plants in the Northeast region. Santos et al. (2018) stated that knowledge about medicinal plants is also passed on by faith healers or praying woman and healers, who are responsible for herbal medicinal formulations to relieve, prevent and even cure diseases. However, this knowledge may be threatened due to the rural exodus and by the rise of modern medicine (Giraldi & Hanazaki, 2010). Therefore, it is necessary to expand ethnobotanical studies, for this knowledge to be disseminated and preserved for future generations.

## Conclusions

This study shows that medicinal plants are widely used by the studied population, they are traditional knowledge passed between generations, as an alternative means to the treatment of diseases, so the use of these plants has become a common practice.

Several species used as medicinal plants have been identified, this popular knowledge needs to be disseminated, and investments in advancing research to prove effectiveness of the methods used in the preparation of homemade medicine.

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