



## MEDICINAL PLANTS AND PHYTOTHERAPEUTICS: A REFLECTION ON TOXIC AND THERAPEUTIC EFFECTS

### PLANTAS MEDICINAIS E FITOTERÁPICOS: UMA REFLEXÃO SOBRE EFEITOS TÓXICOS E TERAPÊUTICOS

### PLANTAS MEDICINALES Y FITOTERAPÉUTICOS: UNA REFLEXIÓN SOBRE LOS EFECTOS TÓXICOS Y TERAPÉUTICOS



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#### ABSTRACT

The consumption of medicinal plants and herbal medicines for the treatment of a wide range of illnesses has been growing as an alternative to traditional medicine. The reasons for consuming these plants include ease of access, fewer side effects, low cost, lack of prescriptions, and even cultural or religious beliefs. However, both herbal remedies and medicinal plants can cause a variety of undesirable reactions, such as poisoning, nausea, irritation, edema, and even death, like any other medication. The objective of this study was to identify the medicinal and toxic effects of medicinal plants and herbal medicines. The methodology consisted of a survey of articles published between 2009 and 2025 on the topic in the search engines Scielo, Google Scholar, and Web of Science using the following keywords: medicinal plants, toxic properties, phytotherapy, clinical effects. The search results yielded 1,590 papers. Studies that lacked scientific evidence of toxic or therapeutic effects, or that did not address the research topic, were excluded. Eighteen articles citing more than forty medicinal plants and herbal remedies remained. To refine this article, the searches were then repeated using the scientific names of the plants previously described to complement the work and provide further insight into their toxicity. Medicinal plants and herbal remedies obtained through their processing, extraction, and the production of teas, ointments, gels, etc., have vast uses for health promotion. However, it is important to be aware of their toxic effects. Choosing a medicinal plant for consumption requires understanding its toxicity, whether through incorrect administration or even the choice of plant. Therefore, it is crucial

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to promote the safe use of medicinal plants and herbal remedies, as well as to raise awareness of the risks of toxicity.

**Keywords:** Phytotherapy. Health. Integrative Practices.

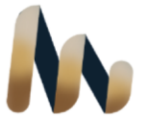
## RESUMO

O consumo de plantas medicinais e medicamentos fitoterápicos para tratamento das mais diversas enfermidades vem crescendo em alternativa à medicina tradicional. Os motivos para o consumo destas plantas são: facilidade de acesso, menos efeitos colaterais, baixo custo, ausência de receitas médicas, até mesmo as crenças culturais ou religiosas. Mas tanto os fitoterápicos como as plantas medicinais podem causar diversas reações indesejáveis, como: intoxicações, enjoos, irritações, edemas, e até a morte, como qualquer outro medicamento. O objetivo deste estudo foi identificar os efeitos medicinais e tóxicos de plantas medicinais e fitoterápicos. A metodologia consistiu no levantamento de artigos publicados entre 2009 e 2025 sobre o tema nas plataformas de busca Scielo, Google acadêmico e Web of Science com as seguintes palavras-chave: plantas medicinais, propriedades tóxicas, fitoterapia, efeitos clínicos. Os resultados da busca alcançaram 1590 trabalhos, foram excluídos estudos em que não se identificou comprovação científica dos efeitos tóxicos ou terapêuticos, ou que não abordaram o tema da pesquisa, restou dezoito artigos que citaram mais de quarenta plantas medicinais e fitoterápicos. Depois, a título de refinamento do presente artigo, foram refeitas as buscas, usando os nomes científicos das plantas já descritas anteriormente, afim de complementar o trabalho e apresentar mais sobre a toxicidade dessas plantas. Pode-se afirmar que as plantas medicinais, e fitoterápicos obtidos por meio de seu processamento, extração, fabricação de chás, pomadas, géis e etc.; possuem uma vasta utilidade para a promoção da saúde, todavia, é importante atentar-se a seus efeitos tóxicos, eleger uma planta medicinal para consumo requer conhecer sua toxicidade, seja na forma errônea administrada ou até mesmo, na escolha do vegetal. Por isso é importante disseminar o uso seguro das plantas medicinais e fitoterápicos, assim como alertar sobre os riscos de toxicidade.

**Palavras-chave:** Fitoterapia. Saúde. Práticas Integrativas.

## RESUMEN

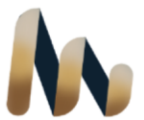
El consumo de plantas medicinales y fitoterapias para el tratamiento de diversas enfermedades ha ido en aumento como alternativa a la medicina tradicional. Las razones para consumir estas plantas incluyen la facilidad de acceso, la reducción de efectos secundarios, el bajo costo, la ausencia de recetas e incluso creencias culturales o religiosas. Sin embargo, tanto los remedios herbales como las plantas medicinales pueden causar diversas reacciones adversas, como intoxicación, náuseas, irritación, edema e incluso la muerte, como cualquier otro medicamento. El objetivo de este estudio fue identificar los efectos medicinales y tóxicos de las plantas medicinales y las fitoterapias. La metodología consistió en una revisión de artículos publicados entre 2009 y 2025 sobre el tema en los buscadores Scielo, Google Académico y Web of Science, utilizando las siguientes palabras clave: plantas medicinales, propiedades tóxicas, fitoterapia, efectos clínicos. Los resultados de la búsqueda arrojaron 1590 artículos. Se excluyeron los estudios que carecían de evidencia científica de efectos tóxicos o terapéuticos, o que no abordaban el tema de investigación. Se mantuvieron dieciocho artículos que citaban más de cuarenta plantas medicinales y fitoterapias. Para perfeccionar este artículo, se repitieron las búsquedas utilizando los nombres científicos de las plantas descritas previamente para complementar el trabajo y comprender mejor su toxicidad. Las plantas medicinales y los remedios herbales obtenidos mediante su procesamiento, extracción y elaboración de té, ungüentos, geles, etc., tienen amplios usos para la promoción de la salud. Sin embargo, es importante conocer sus efectos tóxicos. Elegir una planta medicinal para su consumo requiere comprender su



toxicidad, ya sea por una administración incorrecta o incluso por la elección de la planta. Por lo tanto, es crucial promover el uso seguro de las plantas medicinales y los remedios herbales, así como concienciar sobre los riesgos de toxicidad.

**Palabras clave:** Fitoterapia. Salud. Prácticas Integrativas.





## 1 INTRODUCTION

The demand for alternative treatments to conventional medicine and natural products has been growing among the population, due to accessibility, low cost, influence of social media, support from the World Health Organization (WHO) for the use of medicinal plants and even information passed down through generations, especially for needy populations or even those that are more distant from the usual medical treatments (Da Cruz Montero and Brandelli, 2017).

According to the Health Surveillance Agency (ANVISA), medicinal plants are those capable of relieving or curing diseases and have a tradition of use as medicine in a population or community. To use them, you need to know the plant, know where to harvest it and how to prepare it.

The use of medicinal plants has existed since the beginning. In antiquity, there was still no scientific evidence, but healing experience, as demonstrated on a Sumerian clay tablet from Nagpur, where it lists 12 recipes for the preparation of medicines, being based on more than 250 different plants, such as poppy, henbane and mandrake, with a history of about 5,000 years (Pretovska, 2012).

Within this approach to the use of medicinal plants, and their broad health care, we can analyze that knowledge about their use, whether in the form of maceration for ointments, extraction of oils, production of teas, etc.; is not valued by many health professionals and therefore ends up being recognized as a popular belief. (Ceretta *et al*, 2023).

The use of medicinal plants goes far beyond medicines and teas, according to several studies on Aloe species (Asphodelaceae family), which also reveal aesthetic treatments and other skin care, being used in pustules, hair strands, among others (Czelusniak *et al.*, 2012).

The adopted and known alternative is the use of medicinal plants and herbal medicines that are manufactured from the processing of medicinal plants, being used for the treatment of the most diverse diseases.

When the medicinal plant is industrialized to obtain a medicine, the result is the herbal medicine. The industrialization process avoids contamination by microorganisms and foreign substances, in addition to standardizing the amount and the right way it should be used, allowing for greater safety of use. Industrialized herbal medicines must be regularized with Anvisa before being marketed.

Among the reasons for the consumption of medicinal plants by the population, we can mention: reports in studies, easy access, adverse effects of the use of chemical medications, low cost, manipulations in the form of pills, absence of medical prescriptions, or even cultural beliefs that lead them to believe in the potential of these natural substances (Da Cruz Montero



and Brandelli, 2017). But contrary to popular belief, herbal medicines and medicinal plants can cause several undesirable reactions, such as: intoxication, nausea, irritation, edema, and even death, just like any other medicine.

"Plants can cause adverse reactions ranging from skin and mucous membrane allergies to cardiovascular, respiratory, metabolic, gastrointestinal and neurological disorders. Many medicinal plants can cause embryotoxic, teratogenic and abortifacient effects, plant toxins can cross the placental barrier and induce malformation in embryos and developing fetuses." (Santana and Silva, 2018).

Plants are complex organisms that produce chemicals from their primary and secondary metabolism. Primary metabolism is common to living beings and originates organic compounds necessary for survival.

Secondary metabolism does not occur in animals, the biochemical pathways responsible for the production of these compounds include the shikimic acid and mevalonic acid pathway (De Carvalho *et al.*, 2018). Compounds that belong to the group of phenolics, antioxidant and astringent substances, terpenes, which constitute the majority of essential oils and nitrogenous compounds, are produced; This group includes alkaloids, such as morphine, cocaine, caffeine. These substances can be found in plant tissues of approximately 211 botanical families and, among these, the Araceae, Euphorbiaceae and Solanaceae families commonly used as ornamental plants stand out (Baltar *et al.*, 2017).

In general, plants produce many chemicals that constitute their phytocomplex (Da Rocha *et al.*, 2014). It contains the active ingredients, responsible for the pharmacological action, as well as other principles that can trigger toxicity, it should be remembered that the pharmacological actives themselves can also develop toxicity depending on the dose, time of use, and interactions (Pedroso *et al.*, 2021)

For a safe and effective use of the extract extracted from the plant, many aspects must be analyzed, for example, correct identification of the plant in question, which part will be used for extraction, method of preparation, correct dose, on the other hand, the inappropriate use brings serious health risks. (Zimila *et al.*, 2020).

This literature review study aims to present beneficial and toxic medicinal properties of medicinal plants of traditional use.

## 2 METHODOLOGY

The methodology used in this study consisted of a bibliographic review of articles published in Brazil and around the world, between 2009 and 2019, which addressed medicinal and toxic properties of medicinal plants and herbal medicines. The following

keywords were used to search for articles: medicinal plants, toxic properties, phytotherapy, bacteria and clinical effects.

The selection of articles was carried out with search tools on the *Google Scholar* and *Scielo* platforms. Initially, the search resulted in 1590 works. Ethnobotanical studies, studies of therapeutic potencies, studies of isolated bioactive compounds were discarded, resulting in 18 articles to compose the initial work.

Subsequently, the search in the Web of Science (WOS) database was redone in order to refine the present work, the descriptors "medicinal plants", "bacteria", "toxicological activity" were used, in addition, the more specific searches on the plants already described previously in this article were redone, using their scientific and popular names, in order to refine, detailing and enrichment of the work.

### 3 RESULTS AND DISCUSSION

#### Nervous system

Linalool, present in the volatile oil of several aromatic plants, such as catinga de mulata (*Aeolanthus suaveolens*), Lamiacea family, is used as an anticonvulsant. Studies have revealed that the use of this plant has shown an improvement in action in experimental models of epilepsy in mice, highlighting protection against seizures induced by electroshock (Santos, 2017).

Tujone is a compound that occurs in several plants, including artemisia and salvia, it is present in the drink absinthe that gained prominence in the nineteenth and twentieth centuries.

Anxiety, considered a disorder related to the nervous system, has been treated with the use of essential oils. Borneol is present in the essential oil of several plants, such as *Valeriana officinallis* L, *Matricaria chamomilla* and *Lavandula officinallis*; the use of extracts from these plants promotes relief from anxiety, tiredness and insomnia, but can also cause analgesia and anesthesia (Amaral, 2018).

Valepotriates are the most important chemical group of the Valerianaceae family, they are capable of enhancing anesthesia, reducing aggressiveness, also have anticonvulsant effects, increase sleep time, reduce locomotor activity and have sedative effects (Passos *et al.*, 2009).

Bortoluzzi *et al.* (2020) report the effects of medicinal plants against anxiety. The plants analyzed in the present study were: *Passiflora edulis* (passion fruit), from which the leaves are used to make teas, which have calming effects, indicated for anxiety, arterial hypertension, insomnia, tachycardia, palpitations and myalgias. The extract prepared with



buds of *Citrus aurantiun* L. (Sour Orange), has a soothing action. *Melissa officinalis* L. (lemon balm), *Matricaria chamomilla* (chamomile) and *Cymbopogon citratus* (lemongrass) were also reported with calming action (Moreira, 2013).

Essential oils have also shown actions, protect long-term health, relieve pain and improve mood. The consumption of fresh medicinal herbs can help improve anxiety, this effect is improved if combined with the use of essential oils. (Bortoluzzi et al., 2020).

*Ginkgo biloba* L. extract features gincolides that have antioxidant and neurotransmitter modulating effects, as well as increasing cerebral blood flow; studies have shown that these compounds have reduced sleep time in mice and increased latency time to sleep onset. (Steps et al., 2009). Other bioactive compounds, such as forsocholine, salvinin and ginsenosides act on the central nervous system mediating neuronal responses, can be hallucinogenic, and have neuroprotective activities on different neuronal cells; Ginkgo roots are used to treat psychiatric illnesses, such as anxiety and depression (Passos et al., 2009).

#### Blood pressure:

The pulp and peel of the chayote fruit (*Sechium edule*) led to a decrease in blood pressure in volunteers in a study in Minas Gerais (Nunes et al., 2015). Holy grass (*Cymbopogon citratus*) has antihypertensive and diuretic action (Moreira, 2013). The so-called Brazilian lemon balm (*Lippia alba*) showed relaxing effects on the vessels; while passion fruit (*Passiflora* sp.) which has a depressant action on the central nervous system and muscle relaxant, which probably results in a decrease in systemic arterial hypertension (Nunes et al., 2015).

#### Bactericide:

Articles were read about the use of medicinal plants in the fight against multidrug-resistant bacteria; the antimicrobial activity of extracts and essential oils of these plants was proven based on studies from several countries with diverse flora. Saraiva (2012) reports that the increase in multidrug-resistant bacteria due to the indiscriminate use of antimicrobials. All the extracts of medicinal plants and fractions under study demonstrate activity for at least one species of multidrug-resistant bacteria tested, proving that medicinal plants can represent an important alternative in the control of bacterial resistance (Saraiva, 2012).

In a study carried out by Zimila et al. (2020) the analysis by the disk-diffusion method of the antimicrobial activity of *Salacia Kraussii* under *Escherichia coli*, *Proteus Mirabilis*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, and *Candida albicans*; the bacteria described are constantly isolated in cases of urinary tract infection, often being highly resistant to conventional antibiotics; in addition, *C. albicans* is found in bacterial vaginosis and has been difficult to treat clinically. Various concentrations of the plant extract were

tested, which demonstrate that the hydroethanolic extract of the leaves of *S. kraussii* exhibited the highest antimicrobial activity against the bacterial strain *P. mirabilis*, *K. pneumoniae*, *S. aureus*, *E. coli*. In relation to *C. albicans*, the result was less susceptible to the action of the extract. Thus, given the result, the study in question suggested that the hydroethanolic extract of *S. kraussii* leaves contains antimicrobial action against fungi and bacteria and is considered a herbal medicine that can be used for this purpose.

Sood *et al* (2012) proved, through experiments, that the ethanolic and aqueous extract of *Cassia angustifolia* leaves, collected in three different regions of India, showed significant antimicrobial activity in microbial strains tested of *E. coli*; *B. subtilis*; *C. albicans*; *S. aureus* and *A. niger*.

In *Eleutherine plicata* (marupazinho), bioactive compounds were identified with therapeutic use for: gastralgia, diarrhea and intestinal worms, it also has coronary dilating action and antifertility action. It was also given the use as teas for the treatment of amoebiasis, intestinal infection, liver diseases, hemorrhages and anemia; as for its extract, antibacterial and antifungal actions have been proven (Malheiros, 2008; Saraiva, 2012).

#### Hepatic effects:

Medicinal plants may contain bioactive compounds that affect the liver. These compounds can be hepatotoxic or hepatoprotective. *Portulaca pilosa* (grown pansy) is a plant that can be used as a hepato-protectant, antidiarrheal, and diuretic, while the blunt, plastered leaves are used for burns, erysipelas, and wounds (Dos Santos Pinheiro, 2020).

#### Body weight control:

It was possible to analyze studies on the use of medicinal plants and phytotherapy applied in weight reduction processes, presenting therapeutic indications aimed at improving digestion, water retention, satietogenic, and lipolytic, diuretic, and lipolytic action, with emphasis on plants with calming action (Simão, 2013).

*Silybum marianum* Gaertn, popularly known as Silymarin, or milk thistle, of the Asteraceae family, has its bioactive compound extracted from the fruit, has antioxidant and metabolic regulatory action, widely used for digestive disorders (Simão, 2013). *Citrus aurantium* (bitter orange), belonging to the Rutaceae family, had extracts used as satietogenic and thermogenic. The alkaloids present in its structure are responsible for increasing the production of hepatic lipase, so the increase in lipolysis through thermogenesis can consequently lead to weight loss (Gonçalves *et al.*, 2019).

The artichoke, *Cynara scolymus*, has a diuretic and laxative action. The soluble fibers present in its composition accelerate intestinal functioning and reduce lipid metabolism, contributing to weight loss. (Costa *et al.*, 2020). Green tea, *Camellia sinensis* belongs to the



Theaceae family, has tannins, flavonoids and catechins in its leaves that confer diuretic and antioxidant, hypolipidic and thermogenic action (Gindro *et al.*, 2018).

There is a wide variety of medicinal plants that help in the metabolic balance of the body. *Morus nigra* L (Blackberry), is a diuretic and antioxidant; *Carthamus tinctorius* (Safflower, bastard saffron) promotes the feeling of satiety. *Matricaria chamomilla* (Chamomile) is soothing and helps with intestinal disorders; *Equisetum arvense* (Horsetail) has antioxidant and diuretic action; *Erythrina verna* (Mulungu, parrot's beak, tame lord, man-cape, penknife, cork), acts as a tranquilizer, mild sedative; *Pimpinella anisum* L. (Fennel) is antispasmodic and acts on poor digestion (Costa *et al.*, 2020).

#### Toxic effects:

Among the analyzed properties of medicinal plants, we must also pay attention to their properties that cause health risks, scientific articles also describe these risks: abortifacient and teratogenic effects can occur, the use of these substances can cause adverse reactions, from skin and mucosal allergies to cardiovascular, respiratory, metabolic, gastrointestinal and neurological disorders (Santana *et al.*, 2018).

Some toxins can cross the placental barrier and induce malformation in embryos and fetuses still developing, and can also bring risks in the processes of growth and postnatal maturation. Many teratogenic mechanisms have been associated with the use of herbal products (Dos Santos Pinheiro *et al.*, 2020).

In plants such as *Aloe vera* (*Aloe vera*), Cascara sagrada (*Rhamnus purshiana*), Senna (*Cassia angustifolia*) and Ipê roxo (*Handroanthus impetiginosus*) there is a group of substances called anthraquinones that have laxative action, as they stimulate the contraction of the smooth muscles of the intestine, but in pregnant women, these compounds can induce uterine contractions leading to abortion (Campos, 2016; Santana *et al.*, 2018).

These compounds are found in products based on rosemary, buchinha paulista, camphor, mint, chamomile, Artemisia, asafoetida, leather hat, espinheira santa, eucalyptus, carqueja, among others. For the pregnant woman, these compounds tend to cause miscarriage, due to the relaxation of the uterine muscles, which makes it difficult to attach the embryo. In addition to effects such as embryotoxicity and teratogenicity (Santana *et al.*, 2018).

The Araceae family has specimens of plants widely used as ornamentals, popularly known as: me-nobody-can, taioba brava, café-de-parão, anthurium, calla lily and etc., which have shown that toxic actions occur by substances that cause deleterious effects on the affected organic tissues, such as calcium oxalate crystals in the shape of raffides, which when

penetrating the skin and mucosa induces the release of histamines and saponins (Baltar *et al.*, 2017).

As representatives of the Euphorbiaceae family we have: pine nut, crown-of-christ, castor bean, wild cassava, avelós and etc., and they present toxic actions through ingestion, due to calcium oxalate, contact with seeds or latex, which is caustic and has an irritating action on the skin and mucous membranes due to the presence of curcine and phorbol esters. Wild cassava causes poisoning due to the presence of cyanogenic glycosides, which releases cyanide and compromises oxygen transport and cellular respiration (Baltar *et al.*, 2017).

As for the Solanaceae family, the wild smoke and the white skirt stand out. The compounds described and responsible for the poisonings were the alkaloids atropine, hyoscyne, scopolamine and anabasine (Baltar *et al.*, 2017).

The poisonings presented by the use of plants of the Araceae, Euphorbiaceae and Solanaceae families occurred through the ingestion of leaves and stems, as well as dermal contact with plants, these events are usually accidental and occur in children (Campos *et al.*, 2016).

The excessively incorrect use of medicinal plants, herbal products and their derivatives can trigger undesirable and toxic effects, such as hepatotoxicity (Pinheiro, 2020). Some studies have shown these toxicities, of plants such as Cascara sagrada (*Rhamnus purshianus*), occur due to inadequate administration and cause hepatotoxic effect.

Senna (*Cassia angustifolia*) has laxative action and has shown hepatotoxic effects. Both have anthraquinones, which are responsible for laxative action. Senna was blamed for acute hepatitis in a patient who used it in high doses. (Meirelles, 2011). In the same way, the misuse of plants such as Chaparral (*Larrea tridentata*), green tea (*Camellia sinensis*) from preparation and dosage has hepatotoxic effects (Dos Santos Pinheiro *et al.*, 2020).

Comfrey (*Symphytum officinalis*) is contraindicated for ingestion, being prohibited in many countries, as pyrrolizidine alkaloids are toxic to the liver. In breastfeeding women, in addition to maternal contamination, the baby can be contaminated by ingesting the active ingredient, pyrrolizidinic compounds, thus triggering effects such as the destruction of hepatocytes. (Dos Santos Pinheiro *et al.*, 2020).

Pennyroyal (*Mentha pulegium*) has in its composition a toxic constituent, pulegona, this metabolite ends up being biotransformed in the enzymatic system and tends to produce acute hepatitis or fulminant hepatitis (Meirelles, 2011).

Sacaca (*Croton cajucara*) has had numerous cases of side effects, many of which are related to hepatotoxicity due to continued ingestion. They described hepatocellular alterations



in animals. Some had hepatocellular necrosis similar to acute hepatitis, which led the authors to conclude that the toxicity of Sacaca is dose-dependent. (Dos Santos Pinheiro *et al.*, 2020).

Campos *et al.* (2016) reports that plants should be used if they are studied, to minimize risks. Poisoning caused by plants was identified, which can occur in two ways, as described: acute or chronic; The acute one usually occurs through a single contact, those accidentally, which usually affects children, or intentionally, where it aims, for example, at an abortion attempt or even suicide. Chronic intoxication, on the other hand, occurs continuously, that is, the habit of consuming/ingesting plants leads to intoxication.

The largest cases of plant poisoning are presented by babies to children up to four years old, who are the most vulnerable to this action, going through the exploratory phase, and low understanding of the risks; it can occur through ingestion, physical contact, in parks, schools, home gardens, etc.; We also have reports of poisoning through industrial and agricultural activities, as in the case of Green Tobacco Sickness where poisoning occurs due to the absorption of nicotine through the skin during harvesting; (Fields *et al.*, 2016)

The articles on plant poisoning are still little described, the orientation is that more and more work is addressed and carried out, so that the population is oriented about the risks of ingesting unknown plants, whether its dosage, association with other drugs and even crop care, storage. It is also necessary to pay attention to plants that are easily accessible to babies and children in squares, gardens, and the interior of homes.

#### **4 FINAL CONSIDERATIONS**

In Brazil, there are public policies that encourage the use of medicinal plants, for example, the National Policy on Medicinal Plants and Herbal Medicines (PNPMF) was approved: through Decree No. 5,813, of June 22, 2006, which establishes:

The guidelines and priority lines for the development of actions by the various partners around common objectives aimed at ensuring safe access and rational use of medicinal plants and herbal medicines in our country, the development of technologies and innovations, as well as the strengthening of production chains and arrangements, the sustainable use of Brazilian biodiversity and the development of the Health Production Complex (Brazil, 2006).

But there is still a lack of approximation between policies, scientific texts and professionals that lead to practices and the citizen's right to enjoy something that belongs to everyone (Furlan *et al.*, 2018). The "Medicinal Plants Research Program of the Medicines Center (PPPM/CEME)", establishes that the pharmacological value of preparations based on medicinal plants justifies their inclusion in the National List of Essential Medicines (Rename)"; alternative practices were also created in health services; regulation and implementation of



Phytotherapy in health services and creation of procedures and routines related to its practice in medical care units. (De Mello Dias et al., 2018).

As reported in this article, we must pay attention to the fact that medicinal plants, in addition to their phytotherapeutic capabilities, also have levels of toxicity, so when encouraging the consumption of medicinal plants, it is necessary to know that they can also be harmful. Therefore, it is extremely important to resort to traditional use or seek a health professional.

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