



# Cares on the Use of Medicinal Plants as a Therapeutic Resource

Débora Pinheiro Montes<sup>1\*</sup>, Rodrigo Freitas Silva<sup>2</sup> and Marcelo Otone Aguiar<sup>2</sup>

<sup>1</sup>Candido Mendes University, Postgraduate Program in Plant Biology, Coronel Fabriciano, MG, Brazil

<sup>2</sup>Federal University of Espírito Santo, CCENS, Department of Computing, Alegre, ES, Brazil

\*Corresponding author: Débora Pinheiro Montes, Candido Mendes University, Postgraduate Program in Plant Biology, Coronel Fabriciano, MG, Brazil

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## Abstract

From the earliest times man has sought in plants the source of his well-being, whether as food, clothing or medicine. Currently, the use of medicinal plants for curative purposes has become increasingly growing among the population. From this context, this study has as general objective to describe the criteria necessary to guarantee the efficacy and safety regarding the use of these medicines. Specifically, present a brief history of the use of medicinal plants by man, characterize herbal medicine, as well as demonstrate the most common forms of preparation. For context of the subject was used as methodology the bibliographic research, as well as, resolutions of the National Agency of Sanitary Surveillance (NASS). With this study it was possible to conclude that the use of medicinal plants is not exempt of adverse reactions and risks when the use is carried out of inadequate form. Therefore, it is suggested that more studies be performed and that the population is also more informed not only of the benefits, but, above all, about the correct preparation and use of medicinal plants. On the other hand, it is also necessary to consider that the commercialization of herbal medicines must take into account the criteria related to the collection, drying and preparation of the plants, so that it is possible to guarantee the safety and effectiveness of the use.

**Keywords:** Medicinal Plants; Phyto therapy; Safety; Efficiency

## Introduction

In recent years there has been a resumption of the valorization of phytotherapy as an alternative or therapeutic complement in the most diverse clinical practices. Given this context, the present study portrays the use of medicinal plants highlighting the indispensable criteria to guarantee the correct and safe use of herbal medicines. The literature indicates that plants have always been used by man with the most different purposes, such as for food, ornamentation or even as medication. The use of plants for the treatment and cure of diseases is as old as the human species itself. In Brazil, it has its origin in the culture of the diverse indigenous groups that inhabited the country [1], mixed with the traditions of use of the Europeans and Africans that arrived later and constitutes the current local pharmacopoeia, arousing great national and international interests for the therapeutic and economic potential that it represents [2].

[3] warned that phyto therapeutics should be used safely, since it contains active principles capable of offering satisfactory therapeutic results when correctly employed. Thus, taking into

account the advances in the use of medicinal plants and the growing commercialization of herbal medicines, this study has as general objective to describe the criteria necessary to guarantee the efficacy and safety regarding the use of these medicines. Among the specific objectives, briefly describe the history of the use of medicinal plants by man, characterize phyto therapy, as well as demonstrate the most common ways of preparing plants and their proper use. The choice of this theme is justified by the need to expand studies on the use of medicinal plants, since incorrect use can cause health and life risks. It is also added that the use of medicinal plants by the Brazilian population has become increasingly popular; however, multidisciplinary studies involving biologists, ethnobotanists, chemists, pharmacologists and agronomists (in this case, in the control of the cultivation of medicinal herbs ) in order to increase the knowledge of medicinal plants, how they act, what their toxic and collateral effects are, to guarantee the healing power, safety and efficacy of herbal medicine. It should also be noted that the commercialization of herbal medicines must also follow certain criteria, especially in relation to the collection, drying and

preparation of the plants in order to guarantee the final quality of the product and the efficacy of the medicinal product.

## Development

Medicinal plants are plants that have biological activity, possessing one or more active principles useful to human health. From the earliest times, man searches in plants for the source of his well-being, whether as food, clothing or medicine [4]. For a long time, medicinal plants were used in religious rituals and healing. Some plants came to be elevated to the category of divinity, since their hallucinogenic powers served to make believe that in the state of torpor man approached God. Besides the cure, the plants were also used by the Egyptians in the method of preparation of the mummies, which until today has not been fully revealed. With the advent of writing, knowledge can be systematized and dispersed to more people. Hippocrates, called "Father of Medicine", wrote a medical work where he pointed out for each disease the vegetal remedy and the treatment. Pelácius, a physician from Nero, also contributed significantly, conducting studies on more than 500 species of medicinal plants. With the strengthening of the Catholic Church in the Middle Ages, however, it was decided to forget the research already carried out and, only in the thirteenth century, with the emergence of the schools of Salerno and Montpellier in Europe, the subject on medicinal plants was resumed [5].

Thus, it is understood that the use of medicinal plants in the art of healing is a form of treatment with roots very old, related to the beginnings of medicine and based on the accumulation of information by successive generations. There are two main fields of study of plants. One of them represents phytochemistry (plant chemistry), which is responsible for studying these active substances, their structure, distribution in the plant, modifications and the transformation processes that take place during the life of the plant, during the preparation of the plant remedy and in the storage period (brandão, 2008). The second field of research is phytotherapy, a method of treating diseases characterized by the use of medicinal plants. In Brazil, the use of plants in the treatment of diseases is fundamentally influenced by the indigenous, African and, of course, European culture. The World Health Organization (WHO) estimates that 80% of the world population somehow uses medicinal plants as medicines [6]. The Amazon is home to 50% of all existing biodiversity. Among the main Brazilian medicinal plants can be mentioned: artichoke, rue, rosemary, aloe, burdock, boldo, mulatto caatinga, lemongrass, carqueja, cavalina, confri, stone break, ginger, mint, marjoram, mil-rama, pariparoma, corn, sage, vegetable.

According [7], it is estimated that Brazil has 55 thousand species cataloged and broad socio-diversity beyond the tradition of use of medicinal plants transmitted by generations, also adds the current technological development that has scientifically validated this knowledge and expanding the use of the phytotherapy in the most diverse clinical varieties. Thus, in order to establish policies to guarantee integrality in health care, the Ministry of Health has implemented the National Policy on Natural Medicine and Complementary Practices (NPNCP), whose implementation addresses, above all, the need to know, support, incorporate and

to implement experiences that have already been developed in the public network of many municipalities and states, such as those in traditional Chinese medicine-acupuncture, homeopathy, phytotherapy and anthroposophic medicine. The NPNCP includes therapeutic resources that are called by the WHO for traditional and complementary medicine, which involve approaches that seek to stimulate the natural mechanisms of health promotion and recovery through effective technologies, with emphasis on welcoming listening, developing the therapeutic bond and the integration of the human being with the environment and society [7].

It is also added that one of the actions carried out by NASS to ensure the health of the population is the registration of medicines, at which stage they are evaluated for their safety, efficacy and quality before they are exposed to sale for use by the population. In this context, Collegiate Board Resolution (CBR) 48/2004, establishes norms for registration of herbal medicines in Brazil, and allows the registration as phytotherapeutic only of the derivative of vegetable drug, which is the product of extraction of the vegetal raw material: Extract, dyeing, oil, wax, exudate, juice, etc. According to the scope, "the medicinal plant or its parts are not registered or registered, after collection, stabilization and drying processes, and may be intact, shaved, crushed or pulverized". [3] Emphasize that the use of medicinal plants as an alternative practice for the treatment of pathologies can contribute to the health of the individuals, but must be part of a complete system, so that benefits can really be offered to the users. Therefore, it is necessary to take into account that for each case and type of plant material there is a more suitable and effective preparation form, as well as the way of use and the frequency are important during the treatment. It is no use taking a pint of tea at one time, when it should be taken at regular intervals of time during the day at least. Likewise, a plant recommended exclusively for external use should not be administered internally. The most common forms of preparation are 3:

**A. Bath:** External use of the herbs, in which a more concentrated infusion or decoction is made, which must be fused and mixed in the bath water. Another way is to place the herbs in a thin cloth bag and let them float in the bath water. Baths are often indicated as powerful aids in the healing processes and energy balance of the body, help relax and are truly soothing. The frequency is once a day;

**B. Cataplasm:** Used externally, with calming effect on neuralgia, swelling, bruising, rheumatism, gout, suppurations. It is obtained mainly by kneading the fresh and well-cleaned herbs, applying them directly on the affected part or wrapped in fine cloth or gases;

**C. Compress:** Consists of the application, on the skin, of a paste, often hot, between two cloths, in which there will be penetration of the active principles.

**D. Decoction:** Method indicated for the use of barks, stems, nuts, roots and seeds (vegetable parts with greater resistance to hot water). In a decoction, place the plant part in boiling water, cover and let it boil over low heat for a period of 10 to 20 minutes.

Next, one should strain and squeeze the herb into one piece of cloth or strainer;

**E. Inhalation:** Uses the combination of water vapor with volatile substances from aromatic plants. It is recommended for respiratory problems. The herb should be placed in a bowl with water and to direct the steam is used a cardboard cone placed on the container, with the larger base facing the container and the smaller base facing up;

**F. Infusion:** Preparation used for all parts of medicinal plants rich in volatile components that have different flavor qualities, intensities and concentrations, which degrade by the combined action of water and prolonged heat. Pour boiling water over the chopped herb in a bowl, cover the bowl and let it cool for 10 minutes. The infused, immediately after resting, should be used on the same day of preparation;

**G. Maceration:** Preparation consisting of placing the part of the medicinal plant in a container containing alcohol, oil, water or other extractive liquid. Leaves, flowers and other tender parts are minced and macerated. More resistant plant parts should be macerated for a longer period of time. Plants with the possibility of fermentation should not be prepared in this way;

**H. Oils:** They are used for aromatic plants or that present active lipophilic substances. The dried or finely ground or finely chopped herbs, respectively, are placed in a clear vial of olive, sunflower or corn oil, keeping the vial closed directly;

**I. Powders:** In this type of preparation the leaves and stems must be dry enough to allow them to be crushed with the hands. The resulting powder should be sieved and stored in a tightly closed container, usually protected from light. The husks and roots must be ground to powder, which can be mixed with milk, honey or used in infusions or decoctions. It can also be spread directly on the wound or mixed in oil, Vaseline or water before applying;

**J. Juice or Juice:** In this preparation mode the fruit is used, squeezing it while the juice is obtained by grinding a fresh medicinal plant in a pestle or in domestic blenders and centrifuges. Juice should be used at the time of use.

**K. Tincture:** It is the simplest way to conserve for long periods the active principles of many medicinal plants, since the active substances, for the most part, are soluble in alcohol.

**L. Ointment and Ointments:** Can be prepared with the herb juice or more concentrated tea mixed with animal lard, coconut fat or petrolatum in liquid form.

**M. Wine:** In the preparation, 5 g of one or more dried herbs are used for each 100 ml of wine, which may be white, red or liqueur, with an alcoholic strength of approximately 11°C. The wine remains in maceration, well capped and in a dark place, for a period of 10 to 15 days, and should be shaken once or twice daily. Then the filtrate is filtered. You usually take a spoon (soup) before or after meals.

Although several studies have proven the effectiveness of using vegetables in the treatment of diseases, care must be taken since improper use of plants can cause health damage. Intoxications occur almost always due to the use of excessive amounts of certain plants or the use of plants with toxic effects. Not infrequently are cases where only one or more parts of the plant are used for medical purposes, and another part is considered to be toxic. Some plants have an acute toxic effect, others are cumulative in the body, that is, they have a delayed toxic action. However, the "natural" character of such products does not guarantee the exemption of adverse reactions and other problems arising from such medicine. It is important to mention that the World Health Organization considers it essential that experimental investigations be carried out on plants used for medicinal purposes and their active principles to ensure their therapeutic efficacy and safety. Through his research with medicinal plants, [3] verified that the great part of the population makes use through familiar / friend indications and popular knowledge. However, these same authors emphasize that the health professional plays a fundamental role in guiding, as it establishes direct contact with the population, especially in public health, and has the opportunity to educate and guide the use of plants that may be beneficial or malicious, and suitable form of being used. This education work can be done in a hospital, in the community, or through the Family Health Program (FHP).

On the other hand, it should be pointed out that the lack of regulation and control in the commercialization, easy access, risk of contamination and / or adulteration of the material continue to be the main factors that contribute to the misuse of plants [8]. Therefore, plants should be marketed, consumed or dried immediately after harvesting, in order to minimize the losses of the active substances, since from the moment of harvest a process of degradation of the substances responsible for the medicinal effects begins, due to increase the activity of enzymes capable of breaking these molecules [9]. High levels of water in the plant parts, besides allowing the enzymatic action, also favor the development of microorganisms, compromising the therapeutic qualities [10], which is why it is essential that the plants are dried properly. Drying can be natural, which is a slower process, carried out in shaded and ventilated locations, but free of contaminants such as dust and insects. Sun drying is not recommended so that there is no change in the active ingredients. Another alternative is the artificial drying, in greenhouses, indicated for regions of cold and rainy climate [5]. Another that needs to be taken into account is that the vast majority of plant compounds that are used for medicinal purposes is part of the plant's secondary metabolism. Secondary metabolites, also called byproducts, are compounds that do not play a direct role in the growth and development of the plant, but present other important and important functions, such as defense against pathogens and herbivores.

Although a plant may contain hundreds of secondary metabolites, only the compounds present in higher concentrations are generally isolated and studied by classical phytochemistry. The analysis of active substances is much more complex and longer,

since generally the compounds present in smaller proportion in the plant are those that present better biological effects. Secondary metabolites represent a chemical interface between plants and the surrounding environment, so their synthesis is often affected by environmental conditions. The time at which a plant is collected, for example, is one of the most important factors, since the quantity and sometimes even the nature of the active constituents is not constant during the year. The temperature also influences and the range in which annual, monthly and daily variations in temperature occur is one of the factors that exerts the greatest influence on its development, affecting, therefore, the production of secondary metabolites [11]. The physiological factors, such as photosynthesis, stomatal behavior, reserve mobilization, leaf expansion and growth, can be altered by different types of stress and, consequently, lead to alterations in secondary metabolism. We highlight that the use of herbal medicines has been gradually regulated in the last decades, based on scientific experiments that attest the real effectiveness and, mainly, determine the main side effects. However, it is necessary to be more rigorous regarding the surveillance that involves from the preparation to the marketing of these medicines in a way that guarantees therapeutic efficacy and, above all, the safety of those who use it [4]. From the above, it is understood that although the experiments have been supported by scientific evidence, they have not yet reached sufficiency both in the field of discussion and in concrete practice to guarantee their legitimacy and acceptability, to the point of making herbal medicine a method without risks in relation the clinical practice [12]. For this reason, it is suggested to expand the inspection and also the campaigns divulged by the media, the greater participation of the health professionals regarding the orientation of the population on the risks arising from the incorrect use of the medicinal plants and also in relation to the herbal medicines.

## Conclusion

With this work it was observed that the use of phytotherapics has been widely used since antiquity and contributes to the cure of pathologies and, therefore, the improvement of the health of individuals, especially those with less economic power. However, it is emphasized that the population should be better informed about how to prepare and use medicinal plants appropriately, since they can also cause reactions and adverse effects when improperly used. On the other hand, it is also necessary that greater rigor

in the inspection that involves from the industrialization to the commercialization of herbal medicines. Therefore, considering that medicinal plants have great potential for the generation of new drugs and beneficial products for health, it is indispensable to expand experimental studies that will certainly contribute not only to scientifically prove the effectiveness of these plants, but also, from the point of view of social view, contribute to the improvement of the quality of life of the population that will have an affordable medicine and low financial cost.

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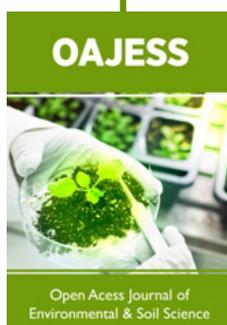
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