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Traditional uses of medicinal plants at Seropédica, Rio de Janeiro

[Usos tradicionales de plantas medicinales en Seropédica, Rio de Janeiro]

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Abstract

Context: This work had as outcome to deal with the part of the population of Seropédica, Rio de Janeiro those who use the public health system and use alternative medicinal plants for the treatment of illness.

Aims: To evaluate the potential medicinal uses of local plants traditionally used in curing/treatment different diseases and illnesses, and contribute as a therapeutic option in the public health system of municipality.

Methods: A semi-structured questionnaire was used to measure independent variables and issues related to the consumption of medicinal plants, based on field surveys and direct face to face communication. It was calculated the relative importance index (RI) of the medicinal plants used in the community as the number of users that mentioned them and the agreement use.

Results: Seventy-three plants (44 families) were cited by the population. Species with the highest number of citations (50%) were boldo, lemon grass, gorse, lemon balm, breaks stone and air plant, and the leaves over part used in medicinal preparations; it was the tea as the main form of use from the fresh plant.

Conclusions: The data suggest that the use of medicinal plants remains an important therapy and wanted by the population, and this would be integrating the knowledge of the practices of traditional medicine to scientific knowledge of these species, replacing the empirical use to the correct use, ensuring secure access to the population. This study is the first ethnopharmacological report in Seropédica, Rio de Janeiro.

Keywords: complementary practices; ethnopharmacological importance; medicinal plants; traditional knowledge.

Resumen

Contexto: Este trabajo tuvo como salida estudiar la parte de la población de Seropédica, Río de Janeiro que utiliza el sistema de salud pública y el uso de plantas medicinales como alternativa para el tratamiento de enfermedades.

Objetivos: Evaluar los posibles usos medicinales de las plantas locales utilizadas tradicionalmente en la cura-tratamiento de diferentes enfermedades y dolencias, y contribuir como una opción terapéutica en el sistema de salud pública del municipio.

Métodos: Un cuestionario semi-estructurado fue utilizado para medir las variables independientes y aquellas relacionadas con el consumo de plantas medicinales, utilizando una encuesta de campo y de comunicación directa cara a cara. Se calculó el índice de importancia relativa (RI) de las plantas medicinales utilizadas en la comunidad así como el número de usuarios que mencionaron éstas y el uso de ellas.

Resultados: Setenta y tres plantas (44 familias) fueron citadas por la población. Las especies con el mayor número de citas (50%) fueron boldo, hierba de limón, aulaga, melisa, chanca piedra y planta de aire. Las hojas fueron la parte más utilizada en preparaciones medicinales. La infusión fue la principal forma de utilización de la planta fresca.

Conclusiones: Los datos sugieren que el uso de plantas medicinales sigue siendo una terapia importante y buscada por la población, y esto integraría los conocimientos de las prácticas de la medicina tradicional con el conocimiento científico de estas especies, sustituyendo el uso empírico por el uso correcto, asegurando el acceso seguro de la población. Este es el primer informe etnofarmacológico en Seropédica, Río de Janeiro.

Palabras Clave: conocimiento tradicional; importancia etnofarmacológica; plantas medicinales; prácticas complementarias.

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INTRODUCTION

Medicinal plants are used in symptoms treatment and healing diseases since the dawn of civilization (Di Stasi, 1996) and still have nowadays a great importance as therapeutic agents. Currently, is estimated that 40% of the available therapeutic drugs have been developed from natural sources; 25% derived from plants, 13% from microorganisms and 3% from animals (Newman and Cragg, 2012).

Among the drugs approved worldwide in the period between 1981 and 2010, about 60% were natural products or coming from these (Newman and Cragg, 2012). Furthermore, approximately 25% of prescribed drugs worldwide are derived from plants, and the 252 considered basic and essential medicines by the World Health Organization (WHO), 11% are exclusively originating from plants (WHO, 2004).

Even today, it is undeniable that the majority of the lower class population refers to medicinal plants as one of the ways to cure or to prevent diseases, as the drug trade in Brazil mainly serves the upper class (about 30% of the population).

Since the 70's the WHO has been conducting global conferences in an attempt to encourage the re-introduction of traditional practices regarding health care, especially herbal medicine. In Brazil the RENISUS was established to support the development of the entire production chain, including the actions that will be undertaken by the other ministries participating in the National Program of Medicinal Plants and Herbal medicine. Setting as a target the legalization farming or management, production, marketing and dispensing of medicinal plants in the public health system (SUS). In this context countless, initiatives such as "National Policy on Medicinal Plants", "Integrative and Complementary Practices: Herbal plants and phytotherapy regarding basic attention", "Phytotherapy in SUS" and the "Program of Medicinal plants and phytotherapy" were established.

Considering an enormous variety of the Brazilian Flora, that pursuit 22% of plants from all Planet, still exists a huge amount of unexplored natural source of secondary metabolic with countless medicinal and chemical properties not yet revealed (Rates, 2001). Therefore, the Brazilian medicinal plants must have analyzed according to moderns methods available aiming the appropriated use by the population (Lapa et al., 2003).

Thus, the need for increasing extension actions of medical plants with the higher association between the chemistry and pharmacology active chemical substances to achieve significant therapeutic applications that can be available to the population. In programs that are focused on ethno-harmacology study, the universities play a prominent role, especially sharing with the population knowledge, medications and the identification of species.

The study of medicinal plants allows not only the understanding of local systems of medicine but also the elucidation of the rationales for the use of the species involved and the development of pharmaceutical forms with a low cost and access to the population.

There are few systematic studies about of medicinal plants in Seropédica, Rio de Janeiro. Thus, the Federal Rural University of Rio de Janeiro (UFRRJ) has an important socio-cultural role in this process, providing to the community an ideal guidance about production and the use of medicinal plants, mainly those regularly employed by the population and; above all, to assist in the training of an outstanding human resources in this area.

MATERIAL AND METHODS

Location and characterization of the study area

The study was conducted in the town of Seropédica, located in the micro-region of Itaguaí, in the Metropolitan Greater Region of Rio de Janeiro, Rio de Janeiro State, Brazil (Fig. 1). It is located 75 km from the state capital, occupying an area of 283.762 km²; and its population was estimated in 2013 at 78.186 inhabitants by the Brazilian Institute of Geography and Statistics (IBGE, 2013). It is the 31st most populous of the state and the second most populous of its micro-region (IBGE, 2013). According to IBGE, the city has a unit of federal health, twenty-two municipal health units, and eight private health units (IBGE, 2013).

Data collection procedures

The population interviewed in this study consisted of peoples that use the public health system of Seropédica, Rio de Janeiro (Fig. 1).
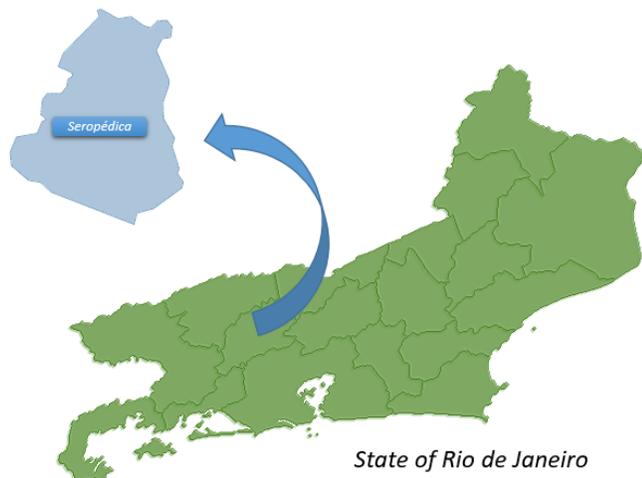
Figure 1. Geographical location of the study area of Seropédica, Rio de Janeiro, Brazil. (Adapted from http://www.emater.rj.gov.br/imagens/mapa-mini-88.jpg)

The research took place from February to May (2014) and was approved by the Research Ethics Committee (23083.010529/2014-78) of the Federal Rural University of Rio de Janeiro. To the accomplishment of the study, it was used a semi-structured questionnaire, based on field surveys and direct face to face communication, to measure independent variables, and issues related to the consumption of medicinal plants. The issues related to medicinal plants were based on the purpose of use, the indication of them, the process of acquiring, the period spent during the use, species and part of the used medicinal plant, the amount, and others. A survey was tested to validate the instrument of research and was used with fifty users from the public health system. The adjustments were related to the comprehension of technical terms by the population.

The systematization and the interview's data analysis were based on Bardini (2002). The text was divided into parts and afterward reuniting in classes or categories according to the topics. Related to the ideas those less mentioned were not disregarded because of its importance to the proposed study.

Data analysis

It was calculated the relative importance index (RI) of the medicinal plants used in the community as the number of users that mentioned them and the agreement use, according to the methodology proposed by Amorozo (1996), Brasil (2011), and Paulino et al. (2012). The RI was obtained by calculating the percentage of the agreement according to the use of specific species (CUP); taking into account that the main use corresponded to the indications of the most mentioned medicinal species.

The percentage of concordance regarding the main uses of each species quantifies the relative importance of used plants in the community as the number cited by the interviewed and the concordance of the above uses. Subsequently, the CUP value was corrected by the correction factor (CF) where the RI value between 0 and 24 corresponds to species with a minor use, values between 25 and 49 to species of an intermediate level and therefore 50 to 100 species with a wider use.

Selection of medicinal plants

The selection of medicinal plants was based on criteria as: percentage used by the locals, the name of the vegetal species on the National List of Medicinal Plants or Interest of SUS and/or listed in the List of Simplified Registration of Herbal Medicines, and the technical and economic possibilities for the development of appropriate and efficient quality control of each medicinal plant to be provided by the University to the locals by pharmaceutical care.

RESULTS AND DISCUSSION

Sociodemographic profile of respondents

Of the three hundred and two interviewed, one hundred sixty-six (55%) were women and one hundred thirty-six (45%) men. The sex ratio (number of women/number of men) found was 1.29; and close to the one presented by the Health Ministry in 2007 (1.07) (Brasil, 2010a). Thirty-three percent of the sample had the age over fifty years; 23% aged 51 to 60 years, and 10% older than 60. The values found in the items gender and age correspond to the population distribution in the city in 2010, according to Human Development Atlas data in Brazil in 2013

obtained in September 2014 (Ipea, 2014). The data show the proportion of the elderly population that in 2010 was around 6.75%; percentage close enough to the value of 10% collected in this research. These results show that sampling was significant and represents faithfully the profile of the local population studied.

Data relating to medicinal plants

Among the participants, 88% said they use or have already used medicinal plants for the treatment of any illness, were mentioned seventy-three different species (Table 1). However, there were few species in common use, the survey totaling five hundred and fifty-three registrations, averaging 2.6 plants/individual user. The sixteen medicinal plants most commonly used, according to the survey, were arnica, aroeira, boldo, chamomile, cana-do-brejo, lemon grass, gorse, fennel, lemon balm, guava, guaco, pennyroyal, breaks stone, punica, air plant and Birdseed. Six of which (boldo, lemon grass, gorse, lemon balm, breaks stone and air plant) accounted for 50% of all species cited in the research, as illustrated in Table 2 and Fig. 2.

Note that it has not been possible to set the scientific name of the species mentioned, since it was not feasible to obtain a sample of the plant used for making dried specimens and the correct proof of its scientific name by classification analysis, by professionals vegetable and botanical systematic; not even through photographic data.

According to the information collected was observed that respondents demonstrated a directly related to the popular knowledge with scientific observations and therapeutic indications. The boldo has been reported to improve liver problems and sickness, which is directly related to scientific data (bile duct and choleretic) (Brasil, 2008; Matos and Lorenzi, 2008). The lemon grass has carminative properties (reduction of intestinal gas - form reported by users), mild antispasmodic and anxiolytic (Ruiz et al., 2008). The peppermint, boldo family type, and lemon grass, also presented reports by users related to stomach problems and improves respiratory processes, which are confirmed in scientific studies as intestinal antispasmodic, carminative and expectorant (Weiss and Fintelmann, 2000; Brasil, 2008). The guaco is a species well known by the population and has

been mainly used in syrups formulations as expectorant (bronchodilator); chamomile species has been used as intestinal antispasmodic and functional dyspepsia (Brasil, 2008).
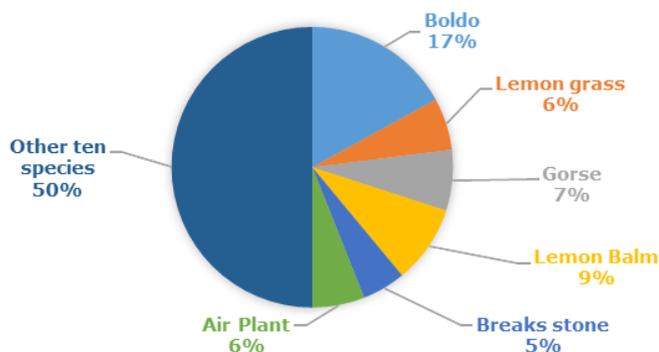
Figure 2. Medicinal plants most used by people interviewed (302 people) in the city of Seropédica – Rio de Janeiro, Brazil.

Despite popular knowledge have a direct relationship to scientific studies, the traditional or popular use of medicinal plants is often mistaken for lack ignorance of the population about its risks (Veiga Junior et al., 2008). Thus, it is important to convey to the public the concept and the differences between medicinal and herbal plant.

Briefly, considers itself a medicinal plant every plant that is popularly used for the treatment of an illness or having scientific studies that prove its effectiveness. Herbal medicine is produced, in other words, fabricated from a plant or parts of it, and the requirement for proof of their effectiveness, quality and safety (Brasil, 2010a).

The part of the medicinal plant indicated by respondents as the most used was the leaf (76.8%), corroborating previous data (Almeida et al., 2009; Oliveira et al., 2010), followed by flower (1.6%). The result meets the information found in the official literature (Brasil, 2010b) on the parts used for the first six species mentioned.

Among the users of medicinal plants, 32% (151 people) are in the age group over fifty years, and 35 of these claimed not making use of medicinal plants for health care. Therefore, there is an adhesion of 77.4% of this population. The age group of those who are over 60 years we related (11.7%), 76.5% use medicinal plants to treat an illness. Similar data were also observed in the work of Brasileiro et al. (2008) showed that an increasing percentage of users of medicinal plants in the population over 60 years

for the treatment of diseases, while the younger and better-educated people showed less interest in herbal medicine. The indication that the population over fifty years is a user of herbal is very useful, especially because the growth of the elderly population can become one of the issues to be considered by the health system (Brasil, 2007).

Forty-nine percent of the studied population was situated in the lower salary range than two minimum wages, 46% receive between two and four salaries and 5% more than four minimum wages. Based on the two lowest salary bands that represent 95% of respondents, was obtained 71.2% of herbal users. In the higher salary levels, the number of users is 56.8%. Thus, it was found that the class of lower purchasing power is the one that most used medicinal plants in their treatments. This information could indicate that the high cost of allopathic medicines and treatments related to official medicine has been the subject of demand for alternative therapies

As pointed out by Gonçalves et al. (2011) there is a socioeconomic relation in the use of non-allopathic resources, especially medicinal plants. However, in this study, the family traditions are said to be a greater factor influence on the use of medicinal plants and not the cost of drugs purchased as shown by the data in Fig. 3.
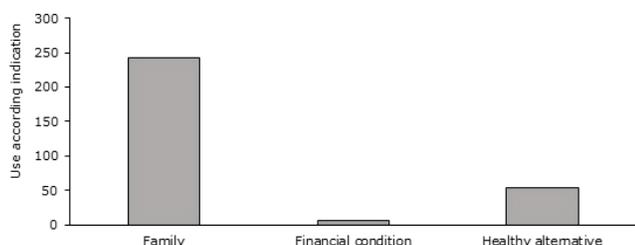

Figure 3. Influence factor for the use of medicinal plants to treat diseases by the population of respondents (302 people) in the city of Seropédica – Rio de Janeiro, Brazil.

The cultural tradition related to the use of medicinal plants is a relevant factor for the population studied, because when inquired about the origin of indication, approximately 86% of respondents based the answers on family orientation, compared to 1% who claimed use by medical personnel. Tomazzoni et al. (2006) showed a percentage of 92% of users of medicinal herbs used because of suggestions of friends and family, and therefore smaller

than the percentage obtained in this study (97%). Surveys were conducted in rural towns with precarious urbanization (Cascavel, Paraná and Seropédica, Rio de Janeiro) and did not present any loss of knowledge at all on the use of medicinal plants.

Addressing of how to purchase medicinal plants, 56% of respondents presented the data point to the presence of homemade orchards (planting) managed as the means of obtaining them; followed by extraction with approximately 26% (Fig. 4).
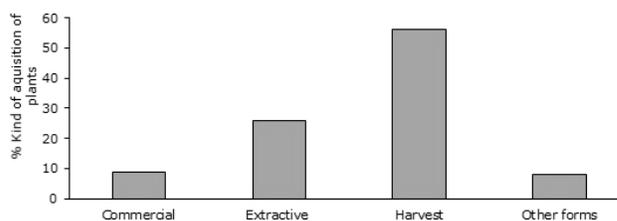
Figure 4. Kind of acquisition of medicinal plants by the population interviewed (302 people) in the city of Seropédica – Rio de Janeiro, Brazil.

Commercial: marked and open-air-marked; Extractive: a set of economic activities related to the collection or extraction of natural resources from environment. Harvest: way to get the plant material from home cultivation.

These two ways of acquisition of medicinal plant correspond to 82% of the answers obtained from the interviewed users. Brasileiro et al. (2008) point out the maintenance of gardens and backyards as a significant contribution to the conservation of medicinal plant species in urban areas. However, these data are troubling when one considers facts such as the risk of the identification of the medicinal plant. According to Matos and Lorenzi (2008), one of the most delicate aspects of herbal medicine concerns is the correct identification of plants, that is due to be heavily based on popular names the actual identity of a plant can vary considerably from region to region.

Given this possible difficulty of identifying species, the way of identifying them when during the act of collecting was also an issue addressed, being complementary to the previous question. Among users, 85% were visual identifiers, and this is a tradition being passed from generation to generation.

Regarding appropriated period to use them, two hundred and three people said to use medicinal plants for one week, indicating that the majority of users (86.8%) do not continuously use the plants.

Table 1. Seventy-three medicinal plants commonly used, according to the survey, in the city of Seropédica, Rio de Janeiro, Brazil. Common and scientific names, botanical family, indications of use and part of the plant used.

Family† / Scientific name	Common name	Indications of use	Part of plant	Form of preparation
Alismataceae				
Echinodorus grandiflorus Cham. & Schltdl.	Chapéu de couro	Kidney	Leaves	Infusion
Amaranthaceae				
Lepidium pseudodidymum Thell. ex Druce	Mastruz	Vermifuge	Leaves	Infusion
Dysphania ambrosioides L. Mosyakin & Clemants	Santa maria	Vermifuge	Leaves	Infusion
Alternanthera brasiliana L. Kuntz	Terramissina	Wound healing	Leaves	Infusion
Amaryllidaceae				
Allium sativum L.	Alho	Expectorant	Bulb	Syrup
Anacardiaceae				
Schinus terebinthifolia Raddi	Aroeira	Itch, anti-inflammatory, healing	Leaves/stem	Infusion/Topical
Mangifera indica L.	Mangueira	Antiviral	Leaves	Infusion
Apiaceae				
Pimpinella anisum L.	Anis	Cough, gasses, high blood pressure	Seeds	Infusion
Foeniculum vulgare Mill.	Funcho	Colic	Leaves	Infusion
Petroselinum crispum Mill. Fuss	Salsa lisa	Antithrombotic	Leaves	Dcoction
Apocynaceae				
Geissospermum laeve (Vell.) Miers	Pau-pereira	Liver	Leaves	Infusion
Asteraceae				
Acmella oleracea L. R. K. Jansen	Agrião	Anti-inflammatory	Leaves	Infusion
Baccharis trimera Less. DC.	Carqueja	Indigestion, liver	Leaves	Infusion
Mikania glomerata Spreng.	Guaco	Flu	Leaves	Infusion
Bignoniaceae				
Jacaranda caroba Vell. DC.	Carobinha	Antithrombotic	Leaves	Infusion
Bixaceae				
Bixa orellana L.	Urucum	Diabetes	Leaves	Infusion

Table 1 continued...

Family† / Scientific name	Common name	Indications of use	Part of plant	Form of preparation
Boraginaceae				
Symphytum officinale L.	Confrei	Wound healing	Leaves	Infusion
Brassicaceae				
Brassica oleracea L.	Couve	Imunoestimulant	Leaves	Infusion
Caprifoliaceae				
Valeriana officinalis L.	Valeriana	Anxiolytic	Leaves	Infusion
Caricaceae				
Carica papaya L.	Mamoeiro	Cough	Flower	Infusion
Caryophyllaceae				
Dianthus caryophyllus L.	Cravo	Flu	Stem	Infusion
Celastraceae				
Maytenus ilicifolia Mart ex Reissek	Espinheira Santa	Gastritis	Leaves	Infusion
Chrysobalanaceae				
Chrysobalanus icaco L.	Abajiru	Diabetes	Leaves	Infusion
Compositae				
Solidago microglossa DC	Arnica	Fracture, inflammation	Leaves	Topical
Cabobanthus polysphaerus Baker H.Rob.	Assa peixe	Expectorant	Leaves	Infusion
Matricaria chamomilla L.	Camomila	Soothing	Leaves	Infusion
Convolvulaceae				
Operculina macrocarpa L. Urb.	Bata de pulga	Antibiotic	Leaves	infusion
Costaceae				
Costus spicatus Jacq. Sw.	Cana do brejo	Kidney problems, urinary tract inflammation	Leaves	Infusion
Crassulaceae				
Kalanchoe laciniata L. DC.	Saião	Anti-inflammatory, liver, cough	Leaves	Infusion
Equisetaceae				
Equisetum giganteum L.	Cavalinha	Diuretic, Bleeding	Stem	Infusion

Table 1 continued...

Family† / Scientific name	Common name	Indications of use	Part of plant	Form of preparation
Euphorbiaceae				
Ricinus communis L.	Mamona	Vermifuge	Leaves	Infusion
Fabaceae				
Senna alexandrina Mill.	Sene	Constipation	Leaves	Infusion
Ginkgoaceae				
Ginkgo biloba L.	Ginkgo	Memory	Leaves	Decoction
Lamiaceae				
Ocimum gratissimum L.	Alfavaca	Flu	Leaves	Infusion
Lavandula angustifolia Mill.	Alfazema	Cough, Migraine	Leaves	Infusion
Plectranthus barbatus Andrews	Boldo	Liver	Leaves	Infusion
Salvia hispanica L.	Chia	Lose weight	Seed	Maceration
Mentha spicata L.	Elevante	Stomatic disorders	Leaves	Infusion
Melissa officinalis L.	Erva cidreira	Soothing, anti-inflammatory, flu	Leaves	Infusion
Leonurus sibiricus L.	Macaé	Stomachache	Leaves	Infusion
Ocimum basilicum L.	Manjericão	High pressure	Leaves	Infusion
Mentha pulegium L.	Poejo	Expectorant	Leaves	Infusion
Lauraceae				
Persea americana Mill	Abacate	Kidney problems, diuretic	Fruit	Decoction
Cinnamomum verum J.Presl	Canela	Flatus	Stem	Infusion
Laurus nobilis L.	Louro	Stomatic problems	Leaves	Infusion
Leguminosae				
Abarema cochliocarpos Barneby & J.W.Grimes	Barbatimão	Wound healing	Leaves	Infusion
Bauhinia forficata Link	Pata de vaca	Inflammation, high pressure, diabetes	Leaves	Infusion
Tamarindus indica L.	Tamarino	Kidney stone	Stem	Infusion
Lythraceae				
Punica granatum L.	Romã	Throat inflammation	Fruit	Syrup

Table 1 continued...

Family† / Scientific name	Common name	Indications of use	Part of plant	Form of preparation
Malvaceae				
Gossypium hirsutum L.	Algodão	Woud healing	Leaves	Infusion
Moraceae				
Morus nigra L.	Amora	Kidney	Leaves	Infusion
Artocarpus altilis (Parkinson ex F.A.Zorn) Fosberg	Fruta pão	Kidney	Leaves	Infusion
Myrtaceae				
Eucalyptus globulus Labill	Eucalipto	Expectorant	Leaves	Infusion
Psidium guajava L.	Goiaba	Stomachache, diarrhea	Leaves/Bud	Infusion
Syzygium cumini L. Skeels	Jamelão	Diabestes	Leaves	Infusion
Eugenia uniflora L.	Pitanga	Expectorant	Leaves	Infusion
Phyllantaceae				
Phyllanthus acutifolius Poir. ex Spreng	Quebra-pedra	Kidney infection	Leaves	Infusion
Plantaginaceae				
Plantago major L.	Tanchagem	Anti-inflammatory	Leaves	Infusion
Poaceae				
Cymbopogon citratus (DC.) Stapf	Capim limão	Soothing	Leaves	Infusion
Poligonaceae				
Polygonum persicaria L.	Erva do bicho	Allergy	Leaves	Shower
Rosaceae				
Rosa centifolia L.	Rosa branca	Inflammation	Leaves	Infusion
Rutaceae				
Ruta graveolens L.	Arruda	Inflammation	Leaves	Infusion
Citrus sinensis (L.) Osbeck	Laranja	Flu, cough	Leaves	Infusion
Simaroubaceae				
Quassia amara L.	Pau tenente	Gastritis	Leaves	Infusion

Table 1 continued...

Family† / Scientific name	Common name	Indications of use	Part of plant	Form of preparation
Solanaceae				
Solanum melongena L.	Berinjela	Lower cholesterol	Fruit	Decoction
Solanum paniculatum L.	Jurubeba	Kidney	Leaves	Infusion
Acnistus arborescens (L.) Schltdl	Marianeira	Migraine	Leaves	Topic
Urticaceae				
Cecropia pachystachya Trécul	Embauba	Back pain	Leaves	Infusion
Acalypha communis Müll. Arg.	Parietária	Kidney inflammation	Leaves	Infusion
Verbenaceae				
Stachytarpheta cayennensis (Rich.) Vahl	Gervão roxo	Kidney	Leaves	Infusion
Xanthorrhoeaceae				
Aloe vera (L.) Burm.f.	Babosa	Anti-inflammatory, wound healing	Leaves	Infusion
Zingiberaceae				
Alpinia zerumbet (Pers.) B.L.Burtt & R.M.Sm.	Colônia	High pressure	Leaves	Infusion
Zingiber officinale Roscoe	Gengibre	Throat inflammation	Root	Infusion

† The scientific names were proposed according to The Plant List (2015); Heinrich and Verpoorte (2014); and Rivera et al. (2014).

Table 2. The sixteen medicinal plants species most commonly used, according to the survey, in the city of Seropédica, Rio de Janeiro, Brazil. Common and scientific names, botanical family, indications of use, part of the plant used and the relative importance of the use.

Species/Family†	Common name	Indications of use	Part of plant	Form of preparation	RI
Apiaceae					
Pimpinella anisum L.	Fennel	Cough, gasses, high blood pressure	Seeds	Infusion	21.0
Anacardiaceae					
Schinus terebinthifolia Raddi	Aroeira	Itch, anti-inflammatory, healing	Leaves/stem	Infusion/Topical	13.0
Asteraceae					
Baccharis trimera (Less.) DC.	Carqueja	Indigestion, liver	Leaves	Infusion	55.3
Mikania glomerata Spreng.	Guaco	Flu	Leaves	Infusion	19.8
Compositae					
Matricaria chamomilla L.	Chamomile	Soothing	Leaves	Infusion	28.0
Solidago chilensis Meyen	Arnica	Fracture, inflammation	Leaves	Topical	25.5
Costaceae					
Costus spicatus (Jacq.) Sw.	Cana do brejo	Kidney problems, urinary tract inflammation	Leaves	Infusion	25.1
Crassulaceae					
Kalanchoe laciniata (L.) DC.	Air plant	Anti-inflammatory, liver, cough	Leaves	Infusion	51.0
Lamiaceae					
Melissa officinalis L.	Lemon balm	Soothing, anti-inflammatory, flu	Leaves	Infusion	59.0
Mentha pulegium L.	Pennyroyal	Expectorant	Leaves	Infusion	19.0
Plectranthus barbatus Andrews	Boldo	Liver	Leaves	Infusion	90.0
Lythraceae					
Punica granatum L.	Punica	Throat inflammation	Fruit	Syrup	25.0
Myrtaceae					
Psidium guajava L.	Guava	Stomachache, diarrhea	Leaves/Bud	Infusion	25.0
Phyllanthaceae					
Phyllanthus acutifolius Poir. ex Spreng.	Breaks stone	Kidney infection	Leaves	Infusion	45.0
Plantaginaceae					
Plantago major L.	Birdseed	Anti-inflammatory	Leaves	Infusion	13.5
Poaceae					
Cymbopogon citratus (DC.) Stapf	Lemon grass	Soothing	Leaves	Infusion	59.0

† The scientific names were proposed according to The Plant List (2015); Heinrich and Verpoorte (2014); and Rivera et al. (2014). RI: Relative importance. The RI was obtained by calculating the percentage of the agreement according to the use of specific species; taking into account that the main use corresponded to the indications of the most mentioned medicinal species

This result was considered positive since prolonged use of medicinal plants can have serious toxic effects. The medicinal plant, as a xenobiotic agent, may submit biotransformation products; which can be toxic with an immediate effect that is related to its intake, or with long-term effects, related to the constant use (Silveira et al., 2008). However, the non-perception of toxic effects from medicinal plants can contribute to the use without medical supervision and the wrong idea that species are safe to use (Veiga Junior, 2008). The result gathered on the occurrence of adverse reactions is related to the popular thinking on the use of medicinal plants, which is imposed by popular saying that "it is natural and therefore does not cause any damage.

The majority of respondents (98.5%) reported that they did not have adverse reactions when used medicinal plants, and only 1.5% had unwanted reactions such as: diarrhea, stomach pain, a drop in blood pressure, reflux, drowsiness, loss of voice, severe intestinal colic, increased diuresis, phlebitis, and palpitation.

It is known that the benefits arising from the use of herbal medicine are more often highlighted than the disadvantages, and refer, mainly to the effectiveness, low cost and reduced side effects (Loures et al., 2010). Probably there is the same premise of the safety of medicinal plants, 92.5% of three hundred and two users, said indicate the use of medicinal plants to others, and only 7.5% stated that they do not do it.

Among the interviewed users, 94.3% did use the fresh plant and 5.7% dry vegetable, and only 92% make use such as tea and 2% use only in the form of home-prepared syrup. Tea for infusions or decoctions was also recorded as the way most used in work by Brasileiro et al. (2008), representing 78% of the citations, as well as in another works (Schwambach and Amador, 2007; Veiga Junior, 2008; Oliveira et al., 2010).

CONCLUSIONS

This study suggests that the use of medicinal plants remains an important therapy and wanted by the population, and this can be explained by the low cost or even the easy access to these products. In this sense, from the data of traditional knowledge, we can provide information for the implementation of herbal medicine in public health in the municipality of Seropédica, Rio de Janeiro, using initially the most used plant species, which should be properly classified and standardized.

However, some considerations should highlight the complexity of herbal medicine implementation process in the field of public health. The effectiveness of a health care model should be able to cover the whole needs of citizens and should take into account a number of essential information that can support the improvement of local health.

The herbal medicine as a practice in the National Health System should be supported in the aspects of quality, efficacy and safety. Only then, the use of medicinal plants would be integrating the knowledge of the practices of traditional medicine to scientific knowledge of these species, replacing the empirical use to the correct use, ensuring secure access to the population.

To the best of our knowledge this is the first report for the study of the ethnopharmacology of the Seropédica, Rio de Janeiro.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Concepts or Ideas	X	X	X			
Design	X					
Definition of intellectual content	X	X	X			
Literature search	X	X	X	X	X	X
Experimental studies	X	X	X			
Data acquisition		X	X	X		
Data analysis	X	X	X	X		
Statistical analysis	X			X	X	
Manuscript preparation	X					X
Manuscript editing	X	X	X		X	X
Manuscript review	X				X	X