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Medicinal plants used by Ponta Porã community, Mato Grosso do Sul State

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ABSTRACT. The academic interest regarding the knowledge that people in general have about plants and their uses has increased significantly. Therefore, aiming to understand it better, this present work studied parts of the plant used by residents from Jardim Aeroporto, in Ponta Porã, Mato Grosso do Sul State, to prepare and use these medicinal plants. This city shares borders with Pedro Juan Caballero (Paraguay), a place where many people use these herbs. The residents use different kinds of plants which are planted around their houses. The leaf was the most used part to prepare the medicines. The plants used by this community belong to 17 families, 28 genera and 30 species, and the women from 30-40 age group with junior high school degree who know the plants, their usage and the preparation of the medicines. These women are responsible to cultivate the plants in the backyards and around their houses. The botanical families which presented higher number of species were Lamiaceae, Asteraceae and Leguminosae. *Baccharis trimera* (Less). DC., *Mentha piperita* L. and *Aloe vera* (L.) Burm. f. were the most used plants by the interviewees, which were prepared in form of tea or plasters.

Key words: ethnopharmacology, ethnobotany, use, culture.

RESUMO. Levantamento etnobotânico em Ponta Porá, Estado do Mato Grosso do Sul. O interesse acadêmico a respeito do conhecimento que as populações detêm sobre plantas e seus usos têm crescido. Visando conhecer melhor esse conhecimento, o presente trabalho objetivou: levantar o perfil dos usuários de plantas medicinais, caracterizar o conhecimento acerca do uso de plantas medicinais, detectar as partes da planta mais empregadas no preparo e aplicação medicinal pela comunidade de moradores do Bairro Jardim Aeroporto em Ponta Porã, Estado do Mato Grosso do Sul. Foram entrevistados 200 moradores, no período de julho a outubro de 2006. As entrevistas foram feitas pelo método da "listagem livre". A cidade faz divisa com Pedro Juan Caballero (Paraguai), onde muitas pessoas recebem as espécies medicinais. Os moradores fazem uso de grupo diversificado de plantas, presentes ao redor de suas casas. A parte vegetal mais citada como utilizada na preparação dos remédios foi a folha. As plantas utilizadas pela população pertencem a 17 famílias, 28 gêneros e 30 espécies, e o conhecimento das plantas, uso e preparo é pertencente às mulheres, na faixa etária dos 30 a 40 anos, em sua maioria com grau de escolaridade do Ensino Fundamental. As mulheres são responsáveis pelo cultivo das plantas, em seus quintais ou ao redor de suas residências. As famílias botânicas que apresentaram maior número de espécies foram, respectivamente, Lamiaceae, Asteraceae e Leguminosae. *Baccharis trimera* (Less). DC (carqueja), *Mentha piperita* L. (hortelã) e *Aloe vera* (L.) Burm. f. (babosa) foram as plantas mais utilizadas pelos entrevistados, sendo preparadas na forma de chás ou emplastro.

Palavras-chave: etnofarmacologia, etnobotânica, uso, cultivo.

Introduction

In Brazil, ethnopharmacological studies are a great challenge, since the diverse Brazilian flora has been progressively destroyed and the popular medicine, a rich mixture of Indigenous, European and African knowledge based on tropical and medicinal plants, becomes more and more modified by modern culture (AMOROZO; GÉLY, 1988). In this context, the practices related to the popular use of medicinal plants are what many communities have as a viable alternative for the treatment of diseases or the maintenance of health. So, knowing how people use the natural resources becomes a great value in the feat of scientific knowledge. Albuquerque and Andrade (2002) remark that the knowledge about the combination between scientific and popular wisdoms generates the knowledge and assimilation of preparation techniques, which may

favor the bases for future posology planning.

Another point of interest for the knowledge acquisition that the populations have about plants and their uses is in the response that the empirical basis developed by them, over the centuries, may have scientific evidence, in many cases, which can qualify the expansion of these uses to industrialized society (FARNSWORTH, 1988). Nevertheless, although Brazil has the greatest vegetal diversity in the world (BRASIL, 1998), during the last 20 years, the amount of information about medicinal plants grew only 8% annually. This demonstrates that in a country biologically so rich and with ecosystems so threatened, research with medicinal plants must be stimulated, since they may lead to the reorganizations of the usage structures from natural resources, having in mind the necessity of its extraction is associated to plant handling (MARIZ et al., 2006).

In Mato Grosso do Sul, some studies have been carried out. This work quotes the study by Schardong and Cervi (2000) that described the ethnobotanical knowledge of the plants marketed in the community of São Benedito, in Campo Grande. Bueno et al. (2005) verified the use of the plants in the native community by Caiuá and Guarani, in Caarapó. Nunes et al. (2003) present a list of the plants marketed by street vendors in Campo Grande. In Dourados, Alves et al. (2008) carried out an ethnobotanical survey of vegetal species with medicinal properties, in two forest areas located in the city.

Thus, the aim of this present work was to intensify the knowledge and the use of medicinal plants by the community in Jardim Aeroporto, Ponta Porã, Mato Grosso do Sul State.

Material and methods

The research was carried out from July to October 2006, in Ponta Porã, located in western Mato Grosso do Sul State, in the Center-West region of the country and sharing a border with Pedro Juan Caballero, in Paraguay.

The geographical positioning of the city is between 21° and 23°, with South latitude 23°, 32', 30"; West longitude 55°, 37', 30"; in an area of 5,359.30 km^2, and altitude of 655 m above sea level. It is the second town in altitude in the state, 328 km away from the capital, Campo Grande.

The chosen neighborhood was Jardim Aeroporto, located in the south side of the city, with approximately 250 houses. About 55% of the residents were visited at random, depending on the availability of the interviewees. The neighborhood presents modest houses built in wood or stonework, and the research was carried out at riverside areas. It benefits from the forest area from the 11 RC MEC military headquarters, one of the main causes to cultivate the medicinal plants. The interviews were made by the "free listing" method (BARUFFI, 2004) and for each interviewee it was requested to answer a previously validated questionnaire (Box 1), which consists of some personal data and some aspects about the ten most used plants.

The material recommended as medicinal was collected according to usual techniques and identified using specific literature, consulting a specialist and through a comparison with the collections from the herbarium of the Universidade Federal da Grande Dourados (DDMS) and from the Centro Universitário da Grande Dourados (HU).

For information on the therapeutic potential of the listed species and their popular names, several sources were used, such as: Correia (1926); Almeida et al. (1998); Ribeiro and Walter (1998); Proença et al. (2000); Camargos et al. (2001); Rodrigues and Carvalho (2001); Farias et al. (2002); Lorenzi and Matos (2002); Durigan et al. (2004). For the presentation of the species, the Cronquist (1981) and APG (1998) classifications were considered. The taxonomic updating was performed by consulting the species index from the Royal Botanic Gardens – KEW (1993) and the writings of the authors followed the recommended standardization by Brumitt and Powell (1992).

Results and discussion

All information enclosed in this study was supplied by women who cultivate and prepare the plants for their own use.

For Amorozo and Gély (1988), there is a certain difference between male and female knowledge in relation to plants that grow in managed environments or not. In general, women control better the knowledge of plants that grow near their houses, yards and small farms, while men know better the plants of the field. But this specialization is not fixed at all, since some women know "country" remedies as well as their husbands.

In relation to the age group of the interviewees, it was verified that the majority of them (about 60%) were between 30 and 40 years old; 22% 20 to 30 years old; 10% less than 20 years old, and 8% between 40 and 50 years old.

As for schooling, it was detected that 90% of the interviewees had only primary education, 5% attended secondary education, and 7% did not have any formal education.

The interviewees, all living at Jardim Aeroporto, use 30 medicinal species, distributed in 28 genera and 17 families, presented around their houses (Table 1).

Table 1. List of species used for medicinal purposes by the community from the neighborhood Jardim Aeroporto, Ponta Porã, Mato Grosso do Sul State.

Family	Scientific Name/Number of Herbarium	Name	Medicinal use
Asteraceae	*Chamomilla recutita* (L.) Rauschert. (DDMS 1458)	Chamomile	antiseptic; soothes eye and mouth irritations and inflammations; used as digestive properties and soothing for intestinal colic.
	Baccharis trimera (Less). DC (DDMS 978)	Carqueja	eliminates toxins from digestive system; used for heartburns; colic; diabetes; uric acid; purging.
	Acanthospermum australe (Loefl.) Kuntze. (DDMS 1401)	Bur	the root is diuretic. Cooked leaves are used for diarrhea, hemorrhage, drips and vaginal inflammations.
	Bidens pilosa L. (DDMS 1541)	beggartick	used for jaundice; diabetes; dysentery; gonorrhea; malaria; cough; gases in stomach; erysipelas and wounds.
Caprifoliaceae	*Sambucus nigra* L. (DDMS 2418)	Elder tree	purging; soothing; sudorific; diuretic; lightens the skin; used for rheumatism; coughs; dandruffs.
Cecropiaceae	*Cecropia pachystachya* Trécul. (DDMS 2261)	Embauba	diuretic; lowers blood pressure; stimulates circulation; used for coughs, bronchitis, respiratory ailments.
Celastraceae	*Maytenus ilicifolia* Mart. Ex Reissek (DDMS 1324).	Cancorosa	tonic; analgesic; antiseptic; healing; diuretic; purgative; used for anemia, stomachache; dyspepsia; regulates gastrointestinal functions, paralyzing abnormal fermentation.
Chenopodiaceae	*Chenopodium ambrosioides* L. (DDMS 864).	Mexican tea	vermicide; stomach tonic; used for inflammations and drips; diabetes; gases; mycosis; scabs and cracks. Kills lice.
Cucurbitaceae	*Sechium edule* (Jacq.) Sw (DDMS 2670)	Chayote	soothing and refreshing.
Flacourtiaceae	*Casearia sylvestris* Sw (DDMS 2313)	Chá-de-Bugre	eliminates cholesterol, helps to lose weight; purging; assists in ovary and prostate affections; used for swelling legs and heart ailments; lowers blood pressure.
Lamiaceae	*Rosmarinus officinalis* L. (DDMS 1945)	Rosemary	diuretic; antimicrobial; digestive tonic; indicated for bad circulation, nervous breakdown, cough, menstrual pains, asthma, rheumatism; acts against hair loss and dandruff; hydrates and soothes the skin.
	Ocimum basilicum L. (DDMS 2076)	Basil	diuretic; purging; heart tonic; used in treatments of period pains, gases, coughs; mouth ulcers, rheumatism; acts against hair loss; stimulates breast milk production.
	Plectranthus barbatus Andr. (DDMS 860)	Boldo	tonic; diuretic; used for hepatic and biliary infections; period pains; mycosis; increases biliary secretion; stimulates digestion; kills lice.
	Melissa officinalis L. (DDMS 898)	Balm	soothing; digestive.
	Mentha piperita L. (DDMS 1343)	Mint	antiseptic; eliminates parasites from digestive system; relieves headaches; hydrates and soothes the skin.
	Mentha pulegium L. (DDMS 883)	Pennyroyal	soothing; digestive.
	Salvia officinalis L. (DDMS 1328)	Sage	used for nervous breakdown, stress, depression.
Leguminosae	*Stryphnodendron adstringens* (Mart.) Coville (DDMS 152)	Barbatimão	only for external use. Acts against infections, tumors, wounds, discharges; vaginal itching; used as astringent and healing.
	Cassia hirsuta L. (DDMS 1542)	Senna	laxative effects confirmed; diuretic; used in treatments for liver and erysipelas. Its toasted seeds help prostate inflammations and it is used as vermicide.
	Cassia angustifolia Vahl. (DDMS 149)	Sene	laxative effect.
	Bowdichia virgilioides Kunth. (HU 213)	Sucupira	*bark and tubers of the root:* hemorrhages, gastric affections, organic weakness, diabetes; rheumatism; *seeds:* rheumatism, gout, arthritis, syphilis; skin blemishes, ulcers, wounds.
Liliaceae	*Aloe vera* (L.) Burm. f. (HU 223)	Aloe vera	healing for skin inflammations, burns, eczemas, erysipelas; acts against hair loss and dandruffs; hydrates and regenerates cells; vermicide; used for bronchitis and hemorrhoids.
Malvaceae	*Malva sylvestris* L. (DDMS 2306)	Mallow	healing; used for inflammations and infections from mouth, throat, larynx, eyes, ears, stomach, ulcers, kidneys, bladder, ovaries, hemorrhoids.
Musaceae	*Musa paradisíaca* L. (HU 113)	Banana	used in treatments for bronchitis.
Piperaceae	*Piper dilatatum* Rich. (DDMS 1798)	Pariparoba	diuretic, used for jaundice, spleen and liver illnesses, colds; tumors and boils.
Plantaginaceae	*Plantago major* L. (DDMS 2002)	Fleawort	astringent; purging; diuretic; used as mouth and throat anti-inflammatory; and for asthma, diarrhea, burns, eczemas, psoriasis; conjunctivitis.
Rubiaceae	*Uncaria tomentosa* (Willd. ex Roem. & Schult.) DC. (HU 415) .	Cats claw	used for diabetes, female cancer for urinary tract; hemorrhages; menstruation irregularities; cirrhosis; fevers; abscesses; gastritis; rheumatism; inflammations; internal washing and tumors; 'normalize the body'. It is also used as contraceptive.
Rutaceae	*Ruta graveolens* L. (DDMS 873)	Rue	kills lice; acts against eyes and ears inflammations and boils (external use, preferably).
	Citrus limonum Risso (DDMS 1724)	Lemon	antispasmodic; antiseptic; astringent, healing and nutritive properties; rich in citric acid and vitamin C.
Verbenaceae	*Stachytarpheta cayennensis* (Rich.) Vahl (DDMS 68)	Gervão	acts against organism weakness; used for hepatitis; bad digestion; stomach and liver ailment; in cataplasm form: it acts against tumors, boils and urinary affections.

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The families that presented larger number of species were Lamiaceae (7), Asteraceae and Leguminosae (4) and Rutaceae (2), respectively. These families, except for Leguminosae, were quoted by Medeiros et al. (2004) as those which presented a large number of species used as medicine by the rural population of Rio das Pedras Reserve, in Mangaratiba, Rio de Janeiro state. Marodin (2002) emphasized that Laminaceae and Asteraceae occupy the first positions in the surveys made in the south region of Brazil. Fuck et al. (2005) and Gazzaneo et al. (2005) also noted Laminaceae as the most representative for the urban area in Bandeirantes, in Paraná State and in the Atlantic forest, in Pernambuco State, respectively.

Laminaceae is a plant rich in essential oils intended for industries, to produce medicines, perfumes and cosmetics (MORALES; SIMON, 1996).

Guarim Neto and Morais (2003) in a bibliographic study about medicinal plants from Cerrado, in Mato Grosso State, also recorded these same families; however, Leguminosae was the family with a large number of species, followed by Asteraceae, Bignoniaceae and Rubiaceae.

Asteraceae and Leguminosae are families with a large number of species; consequently, with a higher probability of becoming used by the human populations. On the surveys carried out by other authors in different regions of Brazil, the most used species is Asteraceae and/or Fabaceae, for medicinal purposes. Alves et al. (2007) with a work achieved with herb sellers from Campina Grande, in Paraíba State, observed that the most used species for medicinal purposes belong to 17 botanical families; and Fabaceae is the most representative, followed by Anacardiaceae and Euphorbiaceae.

Recently, in Ouro Verde, in Goiás State, Silva and Proença (2008) achieved a survey from the most used botanical families, standing out Asteraceae (13 spp.) and Lamiaceae (11 spp.) as the most representative.

From the total of the interviewees, 90% used "carqueja" (*Baccharis trimera*), mint and aloe vera (Figure 1).

The leaf was the most cited and used vegetal part for preparing the medicines, followed by the roots, petals and the whole plant. Similar results were also observed by Fuck et al. (2005) and Alves et al. (2008). Corroborating the present data, Maioli-Azevedo and Fonseca-Kruel (2007) verified that the population of Rio de Janeiro, Rio de Janeiro State, used predominantly the leaves for preparing the medicines (58%), flower (16.1%), the whole plant (10.7%) and in small percentages the stem (5.3%), fruit (4.3%), peel (3.3%) and roots (2.1%).

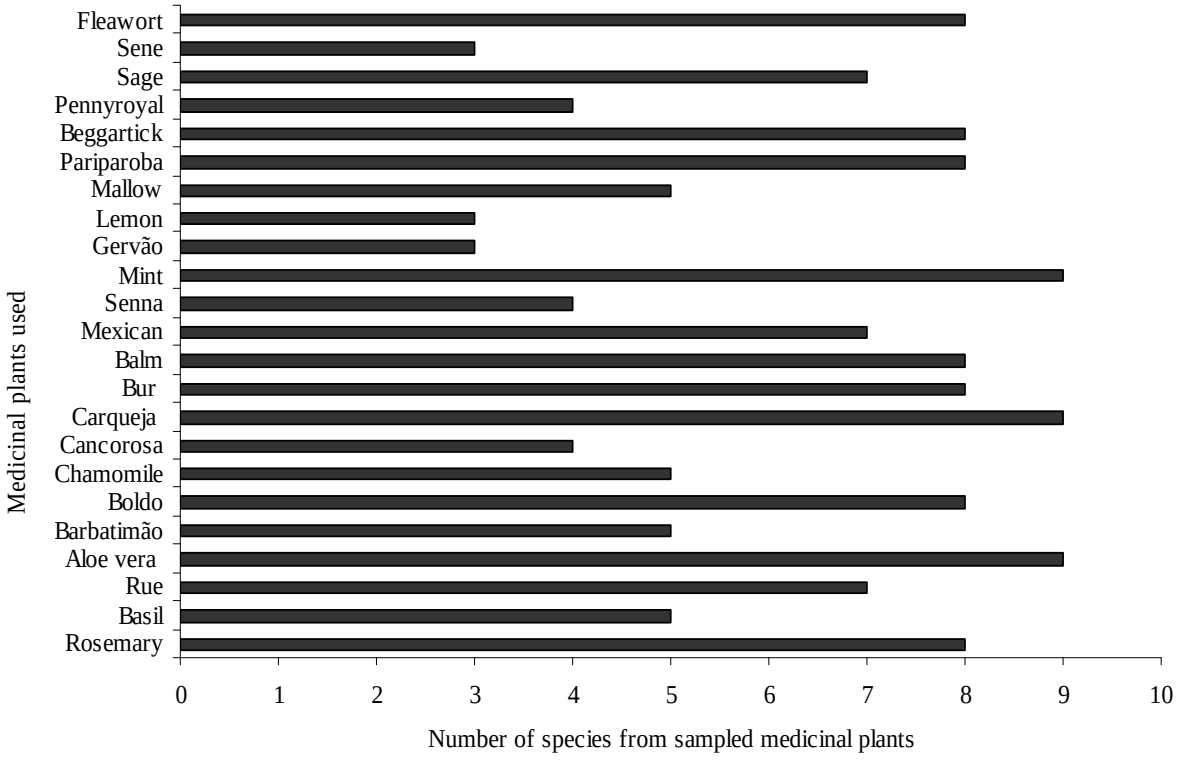

Figure 1. Medicinal plants used in the Jardim Aeroporto neighborhood, in Ponta Porã, Mato Grosso do Sul State.

Amorozo (2002) observed that the population from Santo Antonio do Leverger, in Mato Grosso State, uses all vegetal parts but the leaves were the most used (including branches and sprouts); for the species from the Cerrado, the use of roots and peels were more common. However, Alves et al. (2007) observed a higher use of the peels for preparing the medicines (56%) by the population from Campina Grande, in Paraíba State; probably for its predominant kind of vegetation, on which the leaves do not constitute a resource of continuous supply. Parente and Rosa (2001), in a study about medicinal plants in Barra do Piraí, in Rio de Janeiro State, the use of the whole plant predominated.

According to Castellani (1999), the soft parts of the plants such as leaves, buds and flowers are the richest in volatile components, delicate fragrances and active principles, which diminish by the combined action of water and prolonged heat.

During the interviews, it was cited the *in natura* manner for preparing and using them – that is, consumed with cold water plus "erva de tereré" (typical herb from the region) for preventing diseases. In most cases, the way for preparing it is a tea, through infusion (83% of the interviewees), followed by maceration (6%) and plaster (3%). Similar results were also observed by Castellani (1999) and Fuck et al. (2005).

In relation to the therapeutic indications, there are cases in which they refer to symptoms from determined illness (headache, bellyache, fever, colic and infection) and not to the illness itself. In other cases, the disease itself is the aim of the indication (flu and high blood pressure). Some indications are concerned with the expected effects while using the medicine as in cases used as purging, soothing and vermicide. There are also those in which the organ is remembered to achieve the treatment (throat, kidneys, intestine, stomach, eyes and others). Consequently, all these items reveal that there is no difference between symptoms and diseases for the interviewees.

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ANEXO

Box 1 – Questionnaire applied to the interviewees from the neighborhood Jardim Aeroporto, Ponta Porã, Mato Grosso do Sul State, 2006.

Date:___/___/_____

Name of the interviewee:_____
Address:
Schooling:
Source of revenue: _____
Do you use medicinal plants? ( ) yes ( ) no

Name of the interviewee:_____
Address:
Schooling:
Source of revenue: _____
Do you use medicinal plants? ( ) yes ( ) no

Medicinal plants used	popular name	medicinal use	How do you prepare?	Part used	how do you get it
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					