THE USE OF MEDICINAL PLANT RESOURCES IN RETIROLÂNDIA, STATE OF BAHIA, BRAZIL

O USO DE RECURSOS DE PLANTAS MEDICINAIS EM RETIROLÂNDIA, ESTADO DA BAHIA, BRASIL

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Abstract

The present study attempts to record the medicinal use of 71 plants in the county of Retirolândia, State of Bahia, Northeastern Brazil. Data were obtained through open-ended interviews conducted with locals from march to june, 1997. Data showed that many of the utilized taxa are cultivated species. Plant species belonged to 41 different families, with Lamiaceae, Euphorbiaceae, Caesalpiniaceae, and Asteraceae, being the most representative ones. Plant-based remedies are prescribed for curing numerous aliments, being generally administered as teas. Pharmacological studies are needed in order to obtain information on the bioactivity of the plants and on the reliability of the medicinal properties attributed by folk tradition.

Key words: ethnobotany, folk medicine, traditional knowledge, Brazil.

Resumo

O presente estudo tenta registrar o uso medicinal de 71 plantas no município de Retirolândia, estado da Bahia, nordeste do Brasil. Os dados foram obtidos mediante entrevistas abertas realizadas com moradores locais no período de março a junho de 1997. Os dados demonstram que muitos dos táxons utilizados são espécies cultivadas. As espécies vegetais pertencem a 41 famílias distintas, sendo Lamiaceae, Euphorbiaceae, Caesalpiniaceae e Asteraceae as mais representativas. Remédios baseados em plantas são prescritos para curar numerosas enfermidades, sendo geralmente administrados como chás. Estudos farmacológicos são necessários a fim de se conseguir informações sobre a bioatividade das plantas e sobre a confiabilidade das propriedades medicinais atribuídas pela tradição popular.

Palavras-chave: etnobotânica, medicina popular, conhecimento tradicional, Brasil.

INTRODUCTION

Plants, either cultivated or from the wild, have been harvested since ancient times for a variety of purposes, such as medicine, house construction, handicrafts, and food (Clement, 1988; Clement, 1990; Khan and Sing, 1996; Gottlieb and Kaplan, 1993; Bharel *et al.*, 1996; Alkofahi *et al.*, 1996). As medicinal resources, plants provide most of the biologically active agents for pharmacological screening. According to Farnsworth (1997), about 119 chemical substances currently in use are plant-derived, and some 75% of these were discovered by examining the use of plants in traditional medicine (Carlson *et al.*, 1997).

The World Health Organization estimates that 88% of people from developing countries rely on traditional medicines for their basic healthcare needs (Rodrígues and West, 1995). In industrialized countries, 45% of commercial drug production comes from natural products (Elisabetsky, 1986; Elisabetsky and Nunes, 1990). As Elisabetsky (1986) said, a practical and fast way to discover medicinal plants is to develop surveys on the ethnopharmacology of traditional societies, since they have an accumulated ethnobotanical knowledge on the use of natural resources. The antimalarial medicine

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quinine, for example, has been known to indigenous peoples of South America for hundreds of years.

In Brazil, the use of medicinal plants has been recorded both in indigenous and traditional societies (Elisabetsky, 1986; Ribeiro, 1987; Begossi *et al.*, 1993; Marques, 1995; Volks, 1996). In the 17th century, Piso and MarcGrave, Dutch botanists who accompanied Maurício de Nassau during his journey to Brazil, were the first two authors to record the medicinal uses of plants in the northeast region of the country (Ribeiro, 1993). Although some studies on the medicinal flora of the State of Bahia have been done (Menezes, 1949; Bahia, 1979), many areas within the State need to be surveyed.

For this reason, an ethnobotanical survey was carried out in the county of Retirolândia, which has an area of 204.5 km^2 and lies between 11° 34' S and 39° 20' W (figure 1). This Brazilian region is mainly characterized by a semi-arid climate with deciduous, woody vegetation dominated by thorny phanerogamous, leafless cacti and bromeliad species comprising what is traditionally called 'caatinga' ('white forest' in the Tupi indigenous language). The 'caatinga' is characterized by being a mosaic of local vegetation types, referred to by specific names (Sampaio, 1995). According to this author, a complete inventory of plant species in the region has not been made. He states that the families or subfamilies with most species are Caesalpinoideae, Mimosoideae, Euphorbiaceae, Papilionoideae and Cactaceae.

Retirolândia lies completely in the 'caatinga' dominium, where the mean annual rainfall is about 400 to 600 mm and the mean temperature is 20 °C (CEI, 1994). Most of the 12.000 inhabitants of Retirolândia make their living by planting crops (e. g., "sisal" *Agave sisalana*) and raising cattle. The social group studied here corresponds to the typical Brazilian racial profile of composite people of European and African descent, Indians, and various mixtures of these groups, living integrated with the other members of the society of which they are a part. As a consequence of their economic and social background, most of the people of Retirolândia have limited access to the allotherapeutic drugs and comercial medical care, so local people hold a traditional knowledge related to the use of both wild, semi-wild, and cultivated plant species as medicines.

Few studies concerning the 'caatinga' botanical resources utilized as medicines have been conducted (Bandeira, 1972; Mota, 1987; Bandeira, 1993). For this reason, the present paper aims to describe the use of 96 plant species prescribed as folk medicines in the county of Retirolândia. This is the first time that such a survey has been cained out, as no ethnobotanical investigation of this material has previously been reported for this city.

MATERIALS AND METHODS

The methods regularly applied in ethnobotanical studies were used (Martin, 1995). The data were obtained from march to june, 1997 through open-ended interviews and field observations performed with ten informants during four visits of three days. The informants were local herbalists, old aged persons, small farmers, herbal specialists, and midwives. They were all local residents and were chosen because they were indicated by local people as knowledgeable persons on the subject.

Before each interview the informants were asked whether recording the conversations would be permitted. Questions were such as "Which kind of plant do you use to treat your aliments?", "What were those plants prescribed for?", and "How were plant-based medicines administered?"

Botanical specimens of all plants were collected by two of the authors (Oliveira and Pinheiro). They were identified by the HUEFS (Herbarium of Feira de Santana State University) staff, specially doctor Raymond Harley and doctor Luciano Paganutti de Queiroz. Voucher species were deposited at this herbarium. The most typical plants from this area were also photographed.

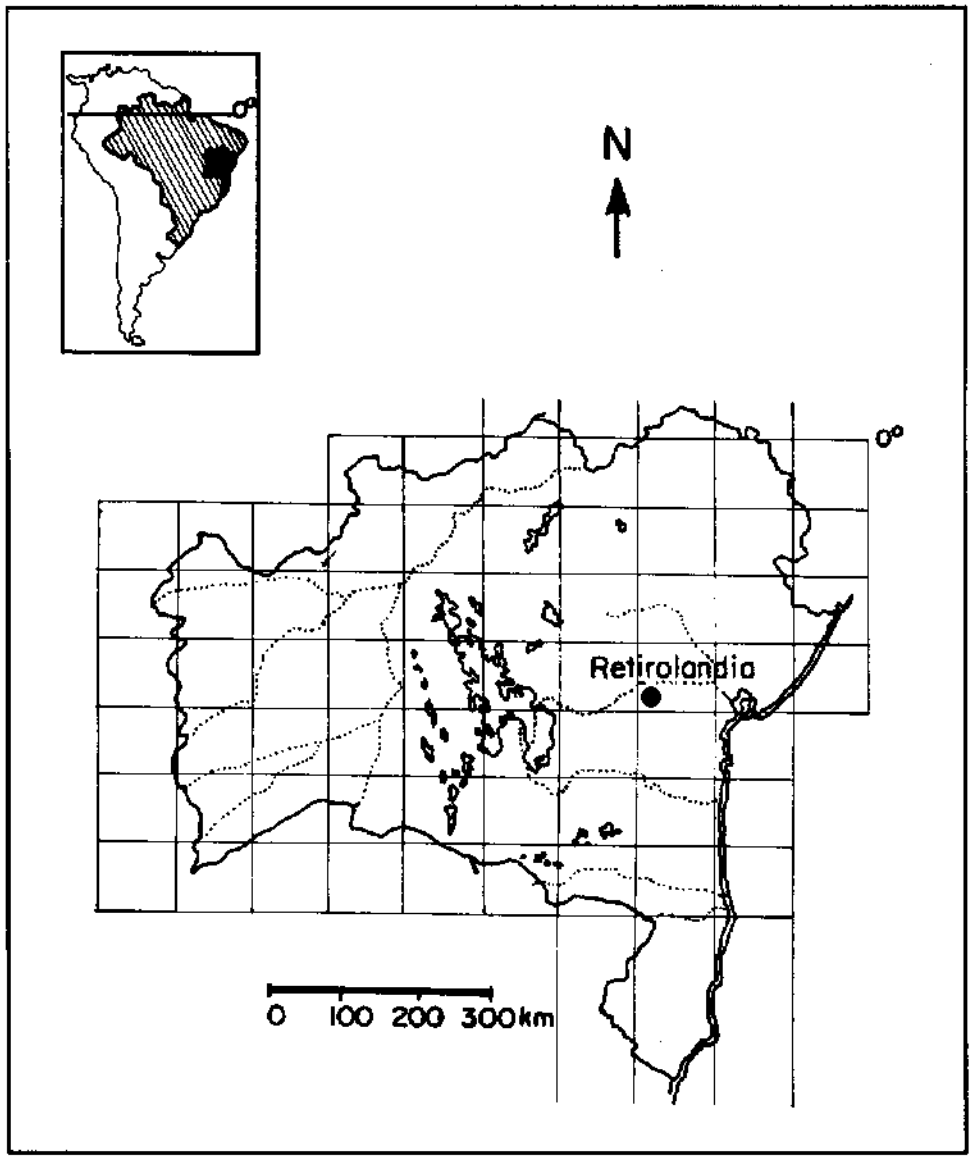

Figure 1. County of Retirolândia

RESULTS

The medicinal plants are arranged in alphabetical order. The information is presented as follows: plant scientific name, family (in parenthesis), vernacular name as spoken by informants, uses, and plant-treated ailments (table 1).

Table 1. Medicinal plants used in the county of Retirolândia, Northeastern Brazil

Coll. No	Common name/ (Scientific name)	Cultivated wild semi-wild	Part used	Preparation	Specific problem cured or action of cure
ABORTIVE					
11613 HUEFS	Artemísia *Artemisia vulgaris* L., Asteraceae	Wild	Leaves	Tea	Boil for tea. Drink cold

23186 HUEFS	Tinguí *Magonia* sp., Sapindaceae	Wild	Stem bark	Tea	Make tea
33328 HUEFS	Melão-de-são-caetano *Mormodica charantia* L., Cucurbitaceae	Wild	Whole plant	Tea	Make tea
22890 HUEFS	Espirradeira-branca *Nerium oleander* L., Apocynaceae	Cultivated	Leaves	Tae	Make tea
ANEMIA					
24738 HUEFS	Angico *Piptadenia moniliformes* Benth., Mimosaceae	Wild	Stem bark	Tea	Make tea
ANTIBIOTIC					
32143 HUEFS	Eucalipto *Eucalyptus citriodora* Hook, Myrtaceae	Cultivated	Leaves, Stem bark	Tea	Make tea
APHRODISIACS					
22741 HUEFS	Cordão-de-são-Francisco *Leonorus nepetifolia* Benth., Lamiaceae	Wild	Fruit	Tea	Make tea
BACKACHE					
35583 HUEFS	Carrapicho-de-ovelha *Bidens pilosa* L., Asteraceae	Wild	Leaves	Tea	Boil. Apply topically
02733 HUEFS	Amendoeira *Terminalia catapa* L., Combretaceae	Cultivated	Leaves	Tea	Massage on the back
13635 HUEFS	Caroá *Neoglaziovia variegata* Mez., Bromeliaceae	Wild	Root	Tea	Boil. Apply topically
BAD DIGESTION					
09018 HUEFS	Cassutinga *Croton* sp., Euphorbiaceae	Wild	Stem bark	Tea	Make tea
04345 HUEFS	Purga-de-batata *Operculina macrocarpa* (L.) Urban, Convolvulaceae	Wild	Root	Tea	Make tea

24525 HUEFS	Pau-de-rato *Caesalpinia pyramidalis* Tul., Caesalpiniaceae	Wild	Leaves, Stem bark	Tea	Boil for tea. Drink cold
			BRONCHITIS		
32143 HUEFS	Eucalipto *Eucalyptus citriodora* Hook, Myrtaceae	Cultivated	Leaves, Stem bark	Tea	Make tea
27005 HUEFS	Hortelã-miúdo *Mentha hortorum* L. det. Krieger, Lamiaceae	Cultivated	Leaves	Tea	Make tea
27006 HUEFS	Hortelã-graúdo *Plectranthus* cf. *amboinicus* (Lour.) Spr., Lamiaceae	Cultivated	Leaves	Tea	
			CARIES		
18998 HUEFS	Juazeiro *Zizyphus joazeiro* Mart., Ramnaceae	Wild	Leaves, Stem bark		Rising of the mouth by Rising of the mouth by mixing the leaves and stem bark with water
			CHICKEN POX		
19607 HUEFS	Sabugueiro *Sambucus australis* Cham. et Sch., Caprifoliaceae	Cultivated	Leaves	Tea	Make tea
			CICATRIZANT		
26896 HUEFS	Trançagem *Plantago major* L., Plantaginaceae	Wild	Leaves	Tea	Wash wounds
33970 HUEFS	Maravilha *Caesalpinia pulcherrima* Swartz, Caesalpiniaceae	Cultivated	Leaves	Juice	Apply topically on wounds
15133 HUEFS	Quarana *Cestrum laevigatum* L., Solanaceae	Wild	Whole plant	Poultice	Apply topically on wounds
32143 HUEFS	Eucalipto *Eucalyptus citriodora* Hook, Myrtaceae	Cultivated	Leaves, Stem bark	Tea	Make tea
05912 HUEFS	Aroeira *Astronium urundeuva* Engl., Anacardiaceae	Wild	Stem bark	Tea	Make tea. Wash wounds

		COUGH			
29787 HUEFS	Língua-de-vaca *Talinum patens* Wild., Portulacaceae	Wild	Leaves, Bark	Tea	Make tea
		DANDRUFF			
18998 HUEFS	Juazeiro *Zizyphus joazeiro* Mart., Ramnaceae	Wild	Leaves, Stem bark	Make a shampoo	Wash the hair
		DIABETES			
35881 HUEFS	Pata-de-vaca *Bauhinia catingae* Harms, Ceasalpiniaceae	Cultivated/ Wild	Leaves	Tea	Make tea
		DIARRHEA			
06321 HUEFS	Quixabeira *Bumelia sartorum* Mart., Sapotaceae	Wild	Leaves	Tea	Make tea
04686 HUEFS	Maria-preta *Chamaesyce prostata* (Ait.) Small, Euphorbiaceae	Wild	Whole plant	Tea	Make tea
09018 HUEFS	Cassutinga *Croton* sp., Euphorbiaceae	Wild	Stem bark	Tea	Make tea
22914 HUEFS	Goiaba *Psidium* cf. *guajava* L., Myrtaceae	Cultivated/ Wild	Shoot	Tea	Make tea
29716 HUEFS	Cajueiro *Anacardium occidentale* L., Anacardiaceae	Cultivated/ Wild	Stem bark	Tea	Make tea
10012 HUEFS	Pau-de-colher *Maytenus* cf. *rigida* M., Celastraceae	Wild	Stem bark	Tea	Make tea
01354 HUEFS	Pinhão *Jatropha mollissima* (Pohl.) Baillon, Euphorbiaceae	Cultivated/ Wild	Latex		Mix latex with water and drink
27528 HUEFS	Umbuzeiro *Spondia tuberosa* Arruda, Anacardiaceae	Wild	Root		The scrapings of the root are put in water and drunk
13066 HUEFS	Mandioca *Manihot esculenta* Crantz, Euphorbiaceae	Cultivated	Root	Tea	Boil for tea

DIURETIC					
23658 HUEFS	Cabeça-de-frade *Melocactus bahiensis* (Br. et Rose) Werderm, Cactaceae	Wild	Pulp of the stem	Tea	Make tea
36381 HUEFS	Capim-açú *Andropogon leucostachyus* Kunth, Poaceae	Wild	Leaves	Tea	Make tea. Drink cold
23914 HUEFS	Vassourinha-do-mato *Scoparia dulcis L.*, Scrophulariaceae	Wild	Leaves, Bark	Tea	Make tea
23261 HUEFS	Golfo *Pistia stratiotes* L., Araceae	Wild	Leaves	Tea	Make tea
24880 HUEFS	Mandacaru *Cereus jamacaru* D. C., Cactaceae	Wild	Bark	Tea	Make tea
EXCESS CHOLESTEROL					
24525 HUEFS	Pau-de-rato *Caesalpinia pyramidalis* Tul., Caesalpiniaceae	Wild	Leaves, Bark stem	Tea	Make tea
31836 HUEFS	Cardo-santo *Argemone mexicana* L., Papaveraceae	Wild	Leaves	Tea	
EXPECTORANT					
02503 HUEFS	Melancia-da-praia *Solanum agrarium* Sendtn., Solanaceae	Wild	Leaves, Stem	Tea	Make tea
EYE'S INFLAMMATION					
05815 HUEFS	Crista-de-galo *Helyophytum foetido* D.C. et Salen., Boraginaceae	Wild	Whole plant	Eye drops	Mash the whole plant and drop the juice into the eyes for inflammation
FOGO SELVAGEM (WILD FIRE ?)					
13066 HUEFS	Mandioca *Manihot esculenta* Crantz, Euphorbiaceae	Cultivated	Green leaves	Bath	A bath is taken
HEART PROBLEMS					
06827 HUEFS	Umburana-de-cambão *Commiphora leptoplocos* (Mart.) Gillet., Burseraceae	Wild	Stem bark	Tea	Make tea

31167 HUEFS	Baunilha *Vanilla palmarum* Lindl, Orchidaceae	Wild	Fruit	Tea	Make tea
		HEPATIC PROBLEMS			
23894 HUEFS	Jurubeba *Solanum paniculatum* L., Solanaceae	Wild	Fruit, Root	Tea	Make tea
17322 HUEFS	Agrião-do-brejo *Cardamine* cf. *bonariensis* Pers., Brassicaceae	Wild	Leaves, Bark	Tea	Make tea
27006 HUEFS	Hortelã-graúdo *Plectranthus* cf. *amboinicus* (Lour.) Spr., Lamiaceae	Cultivated	Leaves	Tea	Make tea
		HEPATITIS			
24520 HUEFS	Pau-ferro *Caesalpinia ferrea* Mart. ex Tul., Caesalpiniaceae	Wild	Pod	Tea	
		HIGH BLOOD PRESSURE			
22870 HUEFS	Fedegoso *Sena ocidentalis* (L.) Link., Caesalpiniaceae	Wild	Root, Seeds	Tea	Boil for tea
		INFLUENZA			
05854 HUEFS	Romã *Punica granatum* L., Punicaceae	Cultivated	Leaves, Fruit bark	Tea	Make tea
04046 HUEFS	Laranja *Citrus sinensis* (L.) Osbeck, Rutaceae	Cultivated	Leaves	Tea	Make tea
26971 HUEFS	Pejo *Mentha pulegium* L., Lamiaceae	Cultivated	Leaves	Tea	Make tea
13084 HUEFS	Velame *Croton campestris* St. Hill., Euphorbiaceae	Wild	Leaves	Tea	Make tea
22071 HUEFS	Jericó *Selaginella convoluta* Spring, Selaginellaceae	Wild	Leaves, Bark	Tea	Make tea
06827 HUEFS	Umburana-de-cambão *Commiphora leptoplocos* (Mart.) Gillet., Burseraceae	Wild	Stem bark	Tea	Make tea

13936 HUEFS	Acerola *Malpihia glabra* L., Malpighiaceae	Cultivated	Leaves, Fruits	Tea Juice	Make tea Drink the juice
03576 HUEFS	Quioiô *Ocimun gratissmum* L., Lamiaceae	Cultivated/ Semi-wild	Leaves	Tea	Make tea
00591 HUEFS	Alecrim-de-boi *Lippia* cf. *pohliana* Shauer, Verbenaceae	Wild	Leaves	Tea	Boil for tea
22870 HUEFS	Fedegoso *Sena ocidentalis* (L.) Link, Caesalpiniaceae	Wild	Root, Seeds	Tea	Make tea
27037 HUEFS	Manjericão *Ocimun gasilicum* L., Lamiaceae	Cultivated	Leaves	Tea	Make tea
13302 HUEFS	Palma *Opuntia fucus-indica* Mill., Cactaceae	Wild/ cultivated	Resin	Tea	Make tea
23894 HUEFS	Jurubeba *Solanum paniculatum* L., Solanaceae	Wild	Fruit, Root	Tea	Make tea
05506 HUEFS	Mastruz *Chenopodium ambrosioides* L., Chenopodiaceae	Wild/ Semi-wild	Leaves, Bark	Tea	Make tea
INSOMNIA					
32089 HUEFS	Alface *Lectuca sativa* L., Asteraceae	Cultivated	Leaves	Tea	Make tea
INTESTINAL PROBLEMS					
07198 HUEFS	Arroz *Oryza sativa* L., Poaceae	Cultivated	Seeds		Cook the grains until they melt; then add a glass of water and drink
13084 HUEFS	Velame *Croton campestris* St. Hill., Euphorbiaceae	Wild	Leaves	Tea	Make tea
LITHIASIS					
13549 HUEFS	Quebra-pedra *Phyllanthus niruri* L. Euphorbiaceae	Wild/ Semi-wild	Whole plant	Tea	Boil for tea. Drink regularly

MENSTRUAL COLIC					
27005 HUEFS	Hortelã-miúdo *Mentha hortorum* L. de.t Krieger, Lamiaceae	Cultivated	Leaves	Tea	Make tea
RENAL PROBLEMS					
08034 HUEFS	Graviola *Annona muricata* L., Annonaceae	Cultivated	Leaves	Tea	Boil for tea. Drink cold
16786 HUEFS	Araticum *Rollinia* sp., Annonaceae	Wild	Leaves	Tea	Make tea
SEDATIVE					
04046 HUEFS	Laranja *Citrus sinensis* (L.) Osbeck, Rutaceae	Cultivated	Fruits	Juice	Drink regularly
17780 HUEFS	Erva-cidreira *Lippia alba* (Mill.) N. E. Br. N. E. Br., Verbenaceae	Cultivated	Leaves, Bark	Tea	Make tea
06638 HUEFS	Pau-d'arco *Tabebuia impetiginosa* (Mart.) Standl., Bignoniaceae	Wild	Stem bark	Tea	Make tea
21525 HUEFS	Maracujá *Passiflora cincinnata* Mast., Passifloraceae	Cultivated	Leaves	Tea	Make tea
22881 HUEFS	Capim-santo *Cymbopogon citratus* Stapf., Poaceae	Cultivated	Leaves	Tea	Make tea
29808 HUEFS	Guiné *Petiveria aliacea* L., Phitolocaceae	Wild	Leaves, Bark, Root	Tea	Make tea
SEXUALLY TRANSMITTED DISEASES					
31836 HUEFS	Cardo-santo *Argemone mexicana* L., Papaveraceae	Wild	Latex	Bath	Feminine genitalia is to be washed with the latex
THROAT INFLAMMATION					
27528 HUEFS	Umburana-de-cheiro *Torresia acreana* Ducke, Caesalpiniaceae	Wild Stem bark, Seeds	Leaves,	Tea	Make tea
05854 HUEFS	Romã *Punica granatum* L., Punicaceae	Cultivated	Leaves, Fruit bark	Tea	Make tea

26178 HUEFS	Enxerto-de-passarinho *Struthanthus* sp., Lorantaceae	Wild	Leaves, Stem	Tea	Make tea
STOMACHACHE					
03707 HUEFS	Alumã *Vernonia bahiensis* Tol., Asteraceae	Cultivated	Leaves	Tea	Make tea
STROKE					
22870 HUEFS	Fedegoso *Sena ocidentalis* (L.) Link, Caesalpiniaceea	Wild	Root, Seeds	Tea	Make tea
TUBERCULOSIS					
00838 HUEFS	Sisal *Agave sisalana* (Peir), Agavaceae	Cultivated	Green root	Tea	Make tea
ULCERS					
05506 HUEFS	Mastruz *Chenopodium ambrosioides* L., Chenopodiaceae	Wild/ Semi-wild	Leaves, Bark	Tea	Make tea
VERMIFUGE					
03608 HUEFS	Abóbora *Cucurbita pepo* L., Cucurbitaceae	Cultivated	Seeds	Tea	Make tea
03936 HUEFS	Quioió *Ocimun gratissimum* L., Lamiaceae	Cultivated/ Wild	Leaves	Tea	Make tea
05506 HUEFS	Mastruz *Chenopodium ambrosioides* L.,	Wild/ Semi-wild	Leaves, Bark	Tea	Make tea
09544 HUEFS	Chenopodiaceae Mamão *Carica papaya* L., Caricaceae	Cultivated	Leaves, Seeds	Tea	Boil yellow leaves for tea. Drink cold

DISCUSSION

The first survey on medicinal plants developed in Retirolândia has recorded 71 plants belonged to 41 families of Angiosperm. The most representative families were: Lamiaceae, Euphorbiaceae, and Caesalpiniaceae (six species each), Asteraceae (four species), Anacardiaceae, Poaceae, Solanaceae, and Cactaceae (three species each). Sixty per cent of the utilized taxa are wild species, whereas 40% of these are cultivated species. *Agave sisalana*, one of the most important sources of income to the local inhabitants due to its fiber, has its roots recommended for the treatment of tuberculosis. This imported plant substituted *Neoglaziovia variegata* as a fiber-producing plant 40-50 years ago (Sampaio, 1995).

A total of 94 raw materials derived from plant parts are used for preparing folk medicines. These are barks (9), leaves (41), seeds (5), stem barks (12), roots (8), stems (3), fruits (6), latex (2), shoot (1), resin (1), and pod (1). Whole plants (5) are also used. In most cases, these materials are turned into teas that are recommended for curing influenza, bronchitis, lithiasis, tuberculosis, ulcers, high blood pressure, diarrhea, toothache, cough, diabetes, sexually transmitted diseases, etc. Most of the plants (fourteen species) are used to treat influenza; nine plants are recommended to treat diarrhea, whereas six species are used as sedatives, and five species are used as diuretics.

The value of medicinal resources derived from plants is very significant. They are usually the only available resources for the majority of the Retirolândia people, who have limited access to commercial medicines and proper medical care. According to the informants, decoctions are prepared by pouring 200 ml of boiling water over 10 g of dried plant parts. After few hours, one or two teacups are drunk in a day. Infusions, on the contrary, are prepared by putting 100 g of plant parts into 1.000 ml of water. When they are ready they are put in the refrigerator and drunk instead of fresh water. According to the interviewees, the folk medicines are thought to be free of side-effects when used in the prescribed ways.

Many of the plants currently recorded already have been screened for bioactive compounds, such as *Carica papaya* (Akah *et al.*, 1997), *Cucurbita pepo* (Bombardelli and Morazzoni, 1997), *Bryophyllum pinnatum* (Olajide *et al.*, 1998), *Catharantus roseus* (Carlson *et al.*, 1997), and *Annona muricata* (Khan *et al.*, 1998). Chymopapain, a compound extracted from *Carica papaya*, has been clinically useful as proteolytic and mucolytic (Carlson *et al.*, *op. cit.*). According to Olajide *et al.* (1999), extracts of *Psidium guajava* have shown both antispasmodic and anti-diarrhoeal effects.

According to Posey (1996), traditional ethnobotanical knowledge may serve to provide new uses for existing plants, uses for previously unknown ones, and new sources for unknown and necessary compounds. For this reason, further pharmacological studies are needed to obtain information on the bioactivity of the reported plants. But most importantly, full recognition and compensation should be given to the informants, who are the carriers of knowledge and raw materials. Also, a conservation program on medicinal plants should be established in order to provide people with permanent and reliable sources of medicine, food, income, and other benefits.

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