Journal of Global Biosciences
ISSN 2320-1355
Volume 6, Number 2, 2017, pp. 4758-4762
Website: www.mutagens.co.in
E-mail: submit@mutagens.co.in
researchsubmission@hotmail.com

Research Paper

USE OF MEDICINAL PLANTS IN PIROÁS AND BARRA NOVA, REDENÇÃO, CEARÁ, BRAZIL

Evalda da Conceição Santos Daio[1], Amalia Santiago de Souza[2], Maria de Fatima Barbosa Coelho[3] and Aiala Vieira Amorim[4]

[1,2,4]Instituto de Desenvolvimento Rural,
Universidade da Integração Internacional da Lusofonia Afro-Brasileira – UNILAB. Av. da Abolição, 7. Redenção, Ceará, Brazil, CEP 62790-000.
[3]Universidade Federal de Mato Grosso,
Programa de Pos-Graduação em Agricultura Tropical. Av. Fernando Correa da Costa, s/n. Cuiaba, Mato Grosso, Brazil, CEP 78060-900.

Abstract

There are traditional communities that use and preserve the Caatinga species as an important resource for their health maintenance. The objectives of this study were to survey the main health problems of the communities of Barra Nova and Piroás in Redenção, Ceará .Visits were made in the community of Piróas and Barra Nova from August 2013 to August 2014 and 35 families were identified to conduct interviews on medicinal plants and health problems. A total of 42 health problems were identified and the most frequent were influenza, fever, diarrhea, diabetes, inflamed throat, cough, migraine, virus, inflammation in uterus and hypertension. Ten plant species were mentioned *Plectranthus amboinicos*, *Plectranthus neochilus*, *Lippia sidoides*, *Lippia alba*, *Bryophyllum calycinum, Cymbopogon citratus*, *Citrus sinensis*, *Eucalyptus globulus*, *Ocimum gratissimo* and *Myracrodruon urundeuva*.

Key words: ***Medicinal plants, Caatinga, Health***.

INTRODUCTION

The Caatinga covers an area of approximately 800.00 km^2, which extends through the States of Piauí, Maranhão, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia and Norte de Minas Gerais in Brazil [1]. It is characterized by low rainfall (350-700 nm/year), high evapotranspiration potential (2,000nm per year) and sunshine of 2,800h/year [2]. The climate, by the Köppen classification, is BsWh, that is, dry, very hot and with a rainy season in the summer, and one presents great physiognomic variation, mainly regarding the density and the size of the plants [3].

Despite the destruction of the Caatinga by agricultural activities, which have settled in the several municipalities completely ignoring the local vegetation and introducing exotic species of immediate economic interest, there are still communities that use and preserve the Caatinga species as an important resource for their survival. The use of more of 500 native species medicinal plants has been demonstrated by [4, 5, 6, 7, 8].

Through Decree No. 5,813 of June 22, 2006, the National Policy on Medicinal and Phytotherapeutic Plants was approved, with the general objective of guaranteeing the Brazilian population the safe access and rational use of medicinal and phytotherapeutic plants, promoting the sustainable use of Biodiversity, topic ten of the guidelines says that popular practices of using herbal and home remedies should be promoted and recognized.

The objectives of this study were to survey the main health problems of the communities of Barra Nova and Piroás in Redenção, Ceará.

MATERIALS AND METHODS

Visits were made in the community of Piróas and Barra Nova from August 2013 to August 2014, in order to favor the participation of residents in planning meetings (Courses, Workshops and Medicinal Gardens) where the project proposals were presented and discussed. From these activities, families were identified to conduct interviews on medicinal plants and health problems [9].

RESULTS AND DISCUSSION

A total of 42 health problems were identified and the most frequent were influenza (ICD 10 - J11), fever (ICD 10 - 50.9), diarrhea (ICD 10 - A09), diabetes (ICD 10 - E11), inflamed throat 10 - R07.0), cough (CID 10 - 05), migraine (CID 10 - G43.9), virus (CID 10 - B34.8), inflammation in uterus (CID 10 - N71.9), hypertension 10-10). These diseases are cited in other works in the northeast region [10, 11, 12, 13].

Ten plant species mentioned among exotic and native plants used by the population were: *Plectranthus amboinicos*, *Plectranthus neochilus*, *Lippia sidoides*, *Lippia alba*, *Bryophyllum calycinum, Cymbopogon citratus*, *Citrus sinensis*, *Eucalyptus globulus*, *Ocimum gratissimo* and *Myracrodruon urundeuva*.

Plectranthus amboinicus (Lour.) Spreng. (Lammiaceae) is known as Malvariço, Malvarisco, Oregano-French, Mint-greasy and Mint. It occurs naturally throughout the tropics and warm regions of Africa, Asia and Australia. This herb has therapeutic and nutritional properties attributed to its natural phytochemical compounds which are highly valued in the pharmaceutical industry. The plant is used as antispasmodic, analgesic, emmenagogue, cathartic, stimulant and estomáquico. Indicated for cases of cough, hoarseness, bronchitis, inflammation of the mouth and sore throats, in addition to topical use in skin conditions. Juice leaves as oral medication is used for ovarian and uterine problems, including cervicitis [14].

Plectranthus neochilus Schltr. (Lammiaceae) is known as boldo gambá, spur flower, boldo paraguayo, and is native of Africa. The plant is herbaceous, perennial, branched, with a very intense aroma. The maceration of the leaves is a tonic to the gallbladder stimulating the secretion of bile, favoring the digestion of fats. The anticholinesterase activity of the extracts of leaves, stems and flowers inhibit the enzyme acetylcholinesterase [15].

Lippia sidoides Cham. (Verbenaceae) is a tree found in the vegetation of the northeastern semi-arid region, mainly between Mossoró-RN and Tabuleiro do Norte-CE, commonly known as "estrepa caballo", "rosemary" and "rosemary". It contains in its composition an essential oil rich in Thymol and Carvacrol, which presents bactericidal, fungicidal, molluscicidal and larvicidal properties. When this oil is incorporated, in the form of dye, into formulations such as Dental Cream or Mouthwash, it reduces the growth of bacterial plaque in humans [5, 6, 16, 17].

Lippia alba (Mill.) N. E. Brown (Verbenaceae) is an aromatic sub-shrub, occurs practically in all regions of Brazil, it is of great importance in Brazilian popular medicine, it is known as lemon balm, leaf litter. In folk medicine it is used as analgesic, anti-inflammatory, sedative and antispasmodic. The lemon grass contains chemical compounds responsible for anti-protozoal, bactericidal and antifungal activities, and can be exploited in agriculture to control phytopathogenic diseases [18].

Bryophyllum calycinum (Crassulaceae) is an erect, succulent, glabrous, 0.3-1.2 m height, perennial herbs. The leaves and leaf juice of the plant were used like-antiviral, antipyretic, antimicrobial, anti-inflammatory, antitumor, hypocholesterolemic, antioxidant, diuretic, antiulcer, styptic, ant diabetic, astringent, antiseptic, antilithic and cough suppressant. The plant contained alkaloids, phenols, flavonoids, tannins, anthocyanins, glycosides, bufadienolides, saponins, coumarins, sitosterols, quinines, carotenoids, tocopherol and lectins. The previous pharmacological studies showed that it exerted many pharmacological effects including anticancer, antioxidant immunomodulating, antibacterial, anthelmentic, antiprotozoal, antiinflammatory, analgesic, diuresis, antiurolithitic, hepatoprotective, anti-peptic ulcer, antidiabetic, wound healing activity and other pharmacological effects [19].

Cymbopogon citratus Stapf (Poaceae) is a widely used herb in tropical countries, especially in Southeast Asia. The essential oil of the plant is used in aromatherapy. The compounds identified in *Cymbopogon citratus* are mainly terpenes, alcohols, ketones, aldehyde and esters. The plant also contains reported phytoconstituents such as flavonoids and phenolic compounds, which consist of luteolin, isoorientin 2'-O-rhamnoside, quercetin, kaempferol and apiginin. Studies indicate that *Cymbopogon citratus* possesses various pharmacological activities such as anti-amoebic, antibacterial, antidiarrheal, antifilarial, antifungal and anti-inflammatory properties [20].

Citrus sinensis (L.) Osbeck. (Rutaceae) The origin of sweet orange is somewhat unclear, but it is probably native to southern China and Vietnam as the plant has been cultivated in those countries for thousands of years. The essential oil is antiseptic and anti-inflammatory and it has been used traditionally to treat ailments like constipation, gastritis, motion sickness, cramps, colic, obesity, fluid retention, bronchitis, mouth ulcers, nervous tension, depression and stress. They are rich in antioxidants and can be helpful in strengthening the immune system and to treat colds and flu [5, 6].

Eucalyptus globulus Labill. (Myrtaceae). Eucalyptus is used to treat influenza, cold, rhinitis, sinusitis, adenitis, tonsillitis, asthma, bronchitis, runny nose, pneumonia, tuberculosis, fever, intestinal worms, acne, bad breath and muscle pain. The properties of eucalyptus include antiseptic, disinfectant, expectorant, tonic, anti-inflammatory, antimicrobial, aromatic, decongestant, expectorant and vermifuge. The natural sedative of eucalyptus can be employed for many reasons, but its tea is specifically recommended for those suffering from chronic stress [17].

Myracrodruon urundeuva Allemão (Anacardiaceae). It is known as "aroeira do sertão" and occurs in northeast of Brazil. The only parts employed were the inner bark and the fruit. The most common uses of *Myracrodruon urundeuva* are for cooking, for sitz baths, in medicinal soap, as antibacterial and hypoallergenic, and as infusion or decoction to treat ulcers and gastritis. It is used with external application in the form of antiseptic, in the case of fractures and exposed wounds. The essential oil is mainly responsible for several benefits of this plant, especially the antimicrobial action against various types of bacteria and fungi and against viruses found in plants, as well as repellent activity

against the domestic fly. It is also effective against mycoses, candidiasis and some types of cancer, because it has a regenerative action of the tissues [21].

Ocimum gratissimum L. (Lamiaceae). The plant is found throughout the tropics and subtropics and its greatest variability occurs in tropical Africa and India. In traditional medicine, the leaves have been used as a general tonic and anti-diarrhea agent and for the treatment of conjunctivitis by instilling directly into the eyes; the leaf oil when mixed with alcohol is applied as a lotion for skin infections, and taken internally for bronchitis. The dried leaves are snuffed to alleviate headaches and fever among other uses [22].

Propagative seeds and branches were collected of these species for the Workshop with the purpose of exchanging empirical and scientific knowledge with the community of Piroás and Barra Nova. The main activity of these workshops was the production and reproduction of seedlings native to the region.

In the production of the primer on the use of medicinal plants, bibliographical reviews on the species cited in the field by the project participants were preceded. The cooperation of the community was essential in the preparation of the workshop and its interest in feedback regarding the methodology of drug preparation. It was suggested a booklet that contained the medicinal recipes, directed to the main aggravations of diseases in the communities.

CONCLUSIONS

The communities have knowledge about the species and their main diseases are treated with therapeutic efficiency. The species used are easy to grow in domestic homegardens.

ACKNOWLEDGEMENT

We thank the people of the community of Piroás and Lagoa Nova for having participated in the interviews and for the warm welcome.

REFERENCES

[1] IBGE. Anuário Estatístico do Brasil. Instituto Brasileiro de Geografia e Estatística, Rio de Janeiro. 2004.

[2] HARGREAVES, G.H. 1974. Precipitation dependability and potentials for an agricultural production for Northeast Brazil. Utah State University, Logan.

[3] AMORIM, I.L.; SAMPAIO, E.V.S.B.; ARAÚJO, E.L. 2005. Flora e estrutura da vegetação arbustivo-arbórea de uma área de caatinga do Seridó, RN, Brasil. Acta Botanica Brasílica, v. 19, pp.615-623.

[4] BRAGA, R. 1985. Plantas do Nordeste: especialmente do Ceará. 4. ed. Natal: ESAM, 540 p.

[5] MATOS, F.J.A. 1989a. Plantas Medicinais: guia de seleção e emprego de plantas medicinais do nordeste do Brasil. v. 1. Fortaleza, Ed. IOCE, 164p.

[6] MATOS, F.J.A. 1989b. Plantas Medicinais: guia de seleção e emprego de plantas medicinais do nordeste do Brasil. v. 2. Fortaleza, Ed. IOCE, 144p.

[7] SILVA, A.C.O.; ALBUQUERQUE, U.P. 2005. Woody medicinal plants of the caatinga in the state of Pernambuco (Northeast Brazil). Acta Botanica Brasílica, v.19, n.1, pp.17-26.

[8] AGRA, M.F.; FREITAS, P.F; BARBOSA-FILHO, J.M. 2007. Synopsis of the plants known as medicinal and poisonous in Northeast of Brazil. Revista Brasileira de Farmacognosia, v.17, n.1, pp.114-140.

[9] **ALBUQUERQUE**, U. P.; **CUNHA**, L. V. F. C.; **LUCENA**, R. F. P.; **ALVES,** R. R. N. (Eds.) Methods and Techniques in Ethnobiology and Ethnoecology, Springer Protocols Handbooks, 2014, 480 p.

[10] ROQUE, A.A.; ROCHA, R.M.; LOIOLA, M.I.B. 2010. Uso e diversidade de plantas medicinais da Caatinga na comunidade rural de Laginhas, município de Caicó, Rio Grande do Norte (Nordeste do Brasil). Revista Brasileira de Plantas Medicinais, v.12, n.1, pp.31-42.

[11] SILVA, T.S.; FREIRE, E.M.X. Abordagem etnobotânica sobre plantas medicinais citadas por populações do entorno de uma unidade de conservação da caatinga do Rio Grande do Norte, Brasil. 2010. Revista Brasileira de Plantas Medicinais, v.12, n.4, pp. 427-435.

[12] FREITAS, A.V.L.; COELHO, M.F.B.; MAIA, S.S.S.; AZEVEDO, R.A.B. 2012. Plantas medicinais: um estudo etnobotânico nos quintais do Sítio Cruz, São Miguel, Rio Grande do Norte, Brasil. Revista Brasileira de Biociências, v.10, n.1, pp.48-59.

[13] PAULINO, R.C.; HENRIQUES, G.P.S.A.; MOURA, O.N.S.; COELHO, M.F.B.; AZEVEDO, R.A.B. 2012. Medicinal plants at the Sítio do Gois, Apodi, Rio Grande do Norte State, Brazil. Revista Brasileira de Farmacognosia, v.22, n.1, pp.29-39.

[14] ARUMUGAM, G.; SWAMY, M.K.; SINNIAH, U.R. 2016. *Plectranthus amboinicus* (Lour.) Spreng: Botanical, Phytochemical, Pharmacological and Nutritional Significance Molecules v.21, n.369, pp.2-26.

[15] VIANA, A.J.S. 2011. Estudo químico e de atividade biológica de *Plectranthus neochilus* Schltr. (Lamiaceae). 104 p. Dissertação (Mestrado) – Programa de Pós-Graduação em Química, Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, 2011.

[17] LORENZI, H.; MATOS, F.J.A. 2008. Plantas Medicinais no Brasil - nativas e exóticas. Nova Odessa: Instituto Plantarum. 544p

[18] SANTOS, A.C.B.; NUNES, T.S.; COUTINHO, T.S.; SILVA, M.A.P. 2015. Uso popular de espécies medicinais da família Verbenaceae no Brasil. Revista Brasileira de Plantas Medicinais, v.17, n.4, supl. II, pp.980-991.

[19] PANDURANGAN, A.; KAUR, A.; SHARMA, D. 2015. *Bryophyllum calycinum* (Crassulaceae) - an overview. International Bulletin of Drug Research., v.5, n.8, pp.51-53.

[20]SHAH, G.; SHRI, R.; PANCHAL, V.; SHARMA, N; SINGH, B.; MANN, A.S. 2011. Scientific basis for the therapeutic use of *Cymbopogon citratus*, stapf (Lemon grass) Journal of Advanced Pharmaceutical Technology & Research, v.2, n.1, pp.3–8.

[21] SILVINO PEREIRA, P.; MARIVANDO BARROS, L.; MATOS BRITO, A.; DUARTE, A.E.; MAIA, A.J. 2014. Uso da *Myracroduon urundeuva* Allemão (aroeira do sertão) pelos agricultores no tratamento de doenças. Revista Cubana de Plantas Medicinales, v.19, n.1, pp.51-60.

[22] NWEZE, E.I.; EZE, E.E. 2009. Justification for the use of *Ocimum gratissimum* L. in herbal medicine and its interaction with disc antibiotics. BMC Complementary and Alternative Medicine, v.9 n.37, pp.1-6.