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Original article

Species with medicinal and mystical-religious uses in São Francisco do Conde, Bahia, Brazil: a contribution to the selection of species for introduction into the local Unified Health System

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ABSTRACT

We investigated the knowledge and practices of local residents in São Francisco do Conde, Bahia, regarding the use of medicinal and mystical plants with the aim of proposing strategies for the incorporation of phytotherapies into the local Unified Health System through local Basic Health Clinics. This municipality was founded during the early colonization of Brazil, introducing the monoculture of sugarcane and slave labor to the region, resulting in a currently largely Afro-Brazilian population. Key informants and local specialists were interviewed and workshops were undertaken at the Basic Health Clinics to collect data and information. The interviewees made 254 references to 126 plant species distributed among 107 genera and 50 families. Among the species cited with medicinal or mystical uses, 51.6% were considered autochtonous, and 42.8% were cited in at least one document of the Brazilian Health Ministry; of these, 11.1% were mentioned in four to eight documents, indicating potential for introduction to the local Unified Health System. The valorization of local knowledge and practices concerning the use of medicinal plants represents an important approach to public health efforts.

Introduction

Brazil is one of the most mega-diverse countries in the world and holds a significant fraction of the total global plant diversity. It has the highest number of vascular plants (32,364) with very high rates of endemism (18,082 species) (Forzza et al., 2010). Diverse anthropogenic pressures threaten the species richness and the biological complexities of the species of the Brazilian biomes, and many of them are considered endangered. The Atlantic Forest and Cerrado biomes have been named global biodiversity hotspots, a concept applied to areas with high numbers

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of endemic species that have suffered exceptional habitat losses (Myers et al., 2000). These threats will require new paradigms of conservation, species uses, and conservation strategies based on detailed research that can guarantee the sustainable management of their richness, involve local communities in conservation practices in natural areas, and development practices that can reconcile human needs and global sustainability (Akerele et al., 1991; Crepaldi and Peixoto, 2010).

According to Sutherland and Pullin (2004), the lack of public policies based on systematic appraisal evidence is one of the most serious problems faced by conservationists, generating a real necessity to reformulate how conservation projects are undertaken. Within this perspective, policies must be developed that not only focus on species and ecosystem sustainability, but also on social and cultural continuity for the preservation of accumulated human knowledge of local biodiversity within traditional communities (Diegues and Arruda, 2001), and on helping the development of products that improve public health.

Among the sixteen goals of the Global Strategy for Plant Conservation (GSPC), one of the documents emitted by the Convention on Biological Diversity (CBD) in 2002, the 13th goal points out that plant diversity is one of the pillars of subsistence, food security, and health services (RBJB, 2006). To enrich and perfect the mechanisms needed to implement the GSPC, it will be necessary to understand the nature of the obstacles that limit the use of Brazilian plant species. Socially constructed programs based on the interpretations and choices shared between science and society are important to understand the difficulties associated with the sustainable use of biodiversity (Crepaldi and Peixoto, 2010; Alho, 2012).

The World Health Organization (WHO) has recommended guides designed to gather traditional medicinal practices and their therapeutic resources (especially medicinal plants) with public health policies, as a way of amplifying and reorganizing access to primary health care and pharmaceutical assistance (Saad et al., 2009). It also stressed the need for attention to basic health questions and the importance of traditional communities as strategic elements, essential to the emergence of a new paradigm for health policies (Luz, 2007). As such, in 2002, the WHO (WHO, 2006) established strategies to encourage traditional medicine that, among other objectives, would aid in the development of national policies to evaluate and regulate ethno-medicinal practices to define strategies that could insert them into the official health systems of member countries.

The creation of the Unified Health System (SUS) in Brazil, as defined by the 1988 Federal Constitution, aimed to encourage the participation of the society for the construction of public health policies that would strengthen the attention given to familial health. An important step in this direction was the establishment in 1993 of the Family Health Strategy as a model for reorienting and reorganizing the primary health care that would be put into practice by interdisciplinary teams in Basic Health Clinics distributed throughout the country. These teams would promote public health through prevention, recuperation and rehabilitation of the most frequent illnesses and disabilities, as well as promote the maintenance of the general health of the populations in those areas (MS, 2011). The advances implemented by the creation of the SUS and the involvement of diverse sectors of society allowed the elaboration of specific policies designed to incorporate phytotherapy into the SUS' National Policy on Integrative and Complementary Practices of the SUS: Medicinal Plants and Phytotherapy (MS, 2006a; b). The creation of these public policies allowed the revision and elaboration of various documents and health regulations that allowed the use of phytotherapeutics, with the main purpose of extending therapeutic options in basic public health. These procedures have demonstrated the importance of putting traditional knowledge on a more equitable platform by using phytochemical and pharmacological studies for the identification of medicinal plants, stimulating the dialogue between folk practitioners and scientists, and recognizing the importance of different perspectives on illness and health (Araújo, 2002). These directives have resulted in changes in the standardization of Brazilian regulations of phytotherapeutics, through the development of specific rules and regulations for production, registration, and commercialization, focusing on the regulatory role of National Health Surveillance Agency (Anvisa) (Virgílio and Marques, 2004; Carvalho et al., 2008). These changes reflected on the 5th edition of the Brazilian Pharmacopeia (F. Bras., 2010) as well as on the elaboration of the phytotherapeutics regulations, RDC 10/2010, (Anvisa, 2010a), which recognizes 66 herbal drugs, and defined rules concerning their posology, prescription and quality control (Carvalho et al., 2011).

The Herbal Medicines Compendium of the Brazilian Pharmacopeia (Anvisa, 2011) defines norms for herbal drug manipulation, and its lists were established based on the plant species most frequently used in herbal medicine in diverse regions of Brazil. The National List of Plants of Interest to the SUS comprises 71 plants that could potentially derive products of interest from the most frequently used species for medicinal purposes in Brazil with potential use in primary health care (MS, 2010).

It will be necessary to develop appropriate methodologies to carry ethnopharmacological and ethnobiological research to survey the many health practices and plant species used by traditional communities, considering the diversity of species and the high rates of endemism in the Brazilian flora (Albuquerque and Hanazaki, 2006).

Guided by these goals, we sought to investigate local health practices involving plants in São Francisco do Conde, Bahia State (SFC-BA). The choice of this municipality was influenced by its history, as its economy was based on the monoculture of sugarcane and consequential intensive African slave labor force which resulted in the permeation of many elements of African culture to the indigenous and established European traditions, broadening the diversity of plant uses. These characteristics gave rise to the hypothesis that this population continues to use home remedies based on plants from the surrounding environment.

Materials and methods

The Municipality of SFC-BA (12° 37' 39'' S and 38° 40' 48'' W) has a population of 36,677 and is situated in the Recôncavo region of Bahia State, located within the Metropolitan Salvador Mesoregion, approximately 75 km from the state capital, in the Atlantic Rainforest Domain (Fig. 1) (IBGE, 2013).

The current occupation of the city began with the colonization of Brazil. The municipality was one of the largest producers of sugarcane in Brazil up until the 19th century, and was the place where in 1832 the Agricultural, Commercial, and Industrial Society of Bahia originated (Santana, 2011). Supported by historical sources, Parés (2005) and Azevedo (2011) noted that the Recôncavo region has been identified as the place of origin of diverse cultural features that can be considered "Afro-Bahian", with a cultural heritage inherited from Africans that includes food ingredients, clothing, percussion instruments, "*samba de roda*" music, boats and canoes construction methods, as well as witchcraft ("*bruxaria*") using powerful herbs.

Figure 1 - Map of the location of the municipality of São Francisco do Conde, Bahia State, Brazil. Source: Prefeitura de São Francisco do Conde, Bahia.

After a long period of economic decadence, a new economic cycle initiated in 1947 with the installation of the first public petrochemical industry in Brazil, the Landulfo Alves Refinery. Its operation resulted in significant economic, social, political, environmental, and cultural impact to the municipality. This lead to an accelerated demographic growth, significant increases in municipal income, urbanization and general growth of economic activities. The municipality of SFC-BA currently shows large social inequalities, with low indices of human development contrasted against high internal economic production (Lemos, 2007; Carvalho and Argôlo, 2011).

We used the "snowball" technique to identify key informants and local specialists (Bailey, 1994; Alexiades, 1996; Albuquerque and Lucena, 2008) and chose a main informant from each study locality. We used the term "key informant" to designate those individuals that were mentioned by other local residents for their knowledge ability, and who participated in more than one research during our study. The local specialists, identified for possessing notable knowledge about the uses of medicinal plants, participated only in the interview. They were interviewed from one to three times to supply information. Six localities with functioning Basic Health Clinics at SFC-BA were selected to collect data: Baixa Fria, Campinas, Pitangueiras, and São Bento in the municipal center, and the rural localities of Muribeca and Monte Recôncavo. The research involved six key informants and 72 local specialists, a total of 78, all agreed to participate in this research. Their family incomes ranges from one to three minimum salaries and their formal education is less than or equal to elementary education (Table 1).

After the interviews, we revised 49% of the gardens and yards with the local specialists and key informants in order to examine the plants that they utilized in the field. All interviewees agreed to participate in the study. The interviews were recorded or filmed, with the permission of informants, and subsequently transcribed; some sections were selected to prepare short films that were shared with the informants and local institutions at the end of the study.

We accompanied the work of the Community Health Agents at the Basic Health Clinics and held workshops with the health workers (from two to five workshops per team, depending on their needs) and they were asked to share information about the use of medicinal plants (Albuquerque and Lucena, 2008). We aimed to know if the patients were questioned about their use of medicinal plants when their medical histories were being taken; if the Community Health Agents recognized or valued any medicinal plants cultivated in their gardens and if they were able to observe a simultaneous use of commercially produced medicines as well as herbal folk remedies. The illnesses/symptoms for which the informants prescribed medicinal plants were classified according to the "International Classification of Diseases and Health Related Problems" (WHO, 2007).

The plant specimens collected were identified, prepared, and deposited in the Alexandre Leal Costa Herbarium at Federal University of Bahia (UFBA); data concerning these collections can be accessed online through the Species Link site (www.cria.org.br). The species were classified into botanical families

Table 1
Numbers of informants who participated in the research program in each neighborhood or locality in the municipality of São Francisco do Conde, Bahia State, Brazil.

Localities	Key informants	Local specialists
Baixa Fria	1	12
Campinas	1	10
Monte Recôncavo	1	13
Muribeca	1	13
Pitangueiras	1	13
São Bento	1	11
Total	6	72

following Angiosperm Phylogeny Group III (APG III, 2009). More information regarding the origins and geographical distributions of the species mentioned by the informants can be found in the Species List of the Brazilian Flora (Forzza et al., 2010), available at http://floradobrasil.jbrj.gov.br; information about taxonomic revisions of the families and genera is available at http://www.tropicos.org.

We use the concept of autochthonous and allochthonous species, in accordance with Richardson 2000 and Moro et al., 2012, for whom autochthonous species occur naturally in the study area, and their presence is due to their own dispersive capacity; and allochthonous species were defined as those not naturally occurring in the study area, being introduced artificially by human action (intentionally or accidentally).

For identification, the following documents were consulted: the five editions of the Brazilian Pharmacopeia (Silva, 1929; Farm. Bras., 1959; 1977; 1996 and F. Bras., 2010); National List of Plants of Interest to the SUS (MS, 2010); regulation about of herbal drugs (Anvisa, 2010); the simplified registration species list (Anvisa, 2008); Medicinal Plant Research Program, 1982 (MS, 2006c); Herbal Medicine Compendium of the Brazilian Pharmacopeia (Anvisa, 2011); and the list of registered herbal medicines valid in Brazil until July 31, 2011, available in www.in.gov.br (Perfeito, 2012). These references allowed us to evaluate the degree to which the plants used by the studied communities were officially acknowledged as medicinal, and which species had to be introduced into the repertoire of the health services. This evaluation was made with the main purpose of being able to choose, together with health service professionals and users, the local species and folk practices most viable within the regulations of the Brazilian Health Ministry. In the present work those are considered official documents published by this ministry.

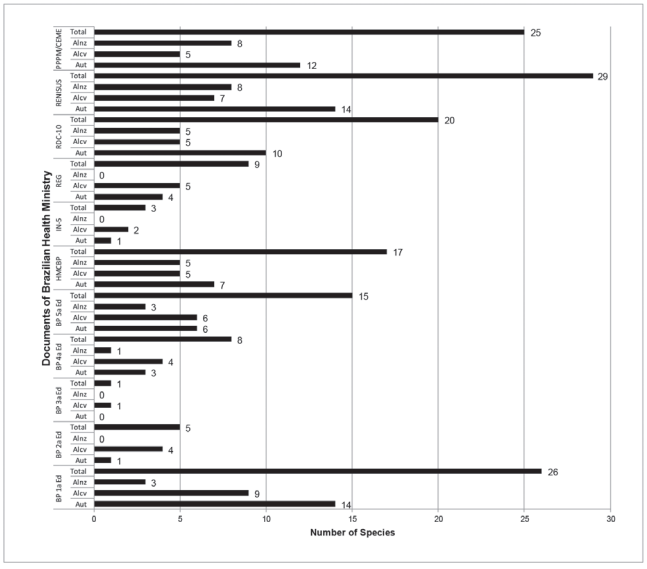

Figure 2 - Numbers of plant species used in São Francisco do Conde, Bahia, according to their probable origins (Aut = autochthonous; Alnz = naturalized allochthonous; Alcv = cultivated allochthonous) as cited in the five editions of the Brazilian Pharmacopeia (BP 1st Ed.; BP 2nd Ed.; BP 3rd Ed.; BP 4th Ed.; and BP 5th Ed.) and in six other documents of the Brazilian Health Ministry (Simplified Registration Species List – IN 05/08; Anvisa Registry; Herbal Medicine Compendium of the Brazilian Pharmacopeia; RDC 10/2010; National List of Plants of Interest to the SUS; Research Program of Medicinal Plants).

Results and discussion

We studied the local concepts of illness and health, local traditional knowledge, and the ways in which medicinal and mystical-religious plants were used in SFC-BA. The interviews yielded 254 citations of 126 different species, distributed among 107 genera and 50 families. Of the cited species, only 44 (34.9%) were mentioned in one of the five editions of the Brazilian Pharmacopeia, while 53 (42%) were referred in Brazilian Health Ministry documents, thus, being more frequent in the National List of Plants of Interest to the SUS, followed by the Brazilian Pharmacopoeia, and the Medicinal Plant Research Program. In relation to their origins, 65 (51.6%) of the cited species were autochthonous (Aut), 24 (19%) were naturalized allochthonous species (Alnz), and 37 (29.4%) were cultivated allochthonous species (Alcv) (Fig. 2). Considering only the autochthonous species (65), we found that 40 (61.5%) were not cited in any of the documents examined, indicating that more than half of the species used by these communities were not formally recognized by the Brazilian Health Ministry yet nor indicated for medicinal use (Table 2).

The families with the most species were Lamiaceae (14), Asteraceae (10), and Fabaceae (7). These species were also documented in Brazilian Health Ministry documents, where Lamiaceae reported four relevant species, while Asteraceae had five, and Fabaceae two (Fig. 3). These families also had the most species cited in other studies carried out in Bahia State (Moreira et al., 2002; Mota and Dias, 2012).

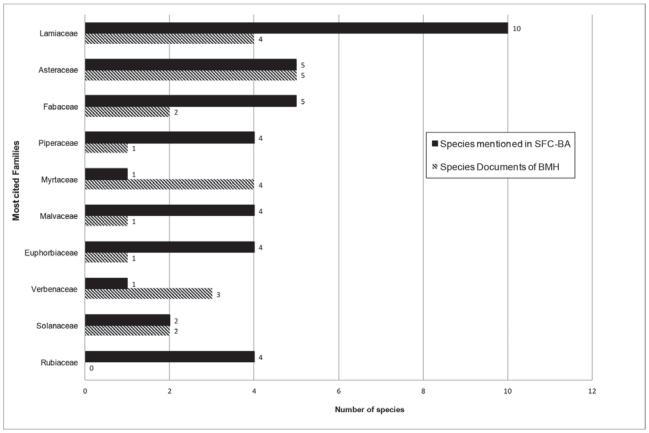

Figure 3 - Botanical families with the most cited species used for medicinal or mystical-religious purposes by informants in São Francisco do Conde, Bahia, and the numbers of species listed in the 5 editions of the Brazilian Pharmacopeia and in the six documents of the Brazilian Health Ministry revised.

Table 2
Species cited by informants from São Francisco do Conde, Bahia, listed in alphabetical order within their botanical families, followed by their popular name, origin, and the documents of Brazilian Health Ministry in which they are cited: 1 = Brazilian Pharmacopeia (BP) 1st Edition, 1929; 2 = BP 2nd Edition, 1959; 3 = BP 3rd Edition, 1977; 4 = BP 4th Edition, 1988-1996; 5 = BP 5th Edition, 2010; 6 = Herbal Medicine Compendium of the Brazilian Pharmacopeia, 2011; 7 = Simplified List of Registered Herbal Medicine (IN 05/2008); 8 = Herbal medicines registered in ANVISA (Perfeito, 2012); 9 = Notified herbal drugs (RDC 10/2010); 10 = National List of plants of interest to the SUS, 2008; 11 = Research Program of Medicinal Plants, 1982. (Alnz, naturalized allochthonous species; Alcv, cultivated allochthonous species; Aut, autochthonous). *Species with the possibility of introduction in the municipal SUS.

Family	Scientific name	Popular name	Origin	1	2	3	4	5	6	7	8	9	10	11
Acanthaceae														
	Justicia gendarussa Burm.f.	vence-tudo	Alnz											
Adoxaceae														
	Sambucus australis Cham. and Schltdl.	sabugueiro	Aut	X				X						
Amaranthaceae														
	Alternanthera brasiliana (L.) O. Kuntze	benzetacil	Aut											
	Alternanthera tenella Colla	avanço	Aut											
	Chenopodium ambrosioides L.	mastruz	Aut	X									X	X
Anacardiaceae														
	Anacardium occidentale L.	caju	Aut	X								X	X	
	Mangifera indica L.	manga	Alcv											
	Schinus terebinthifolia Raddi	aroeira*	Aut	X					X		X	X	X	X
Annonaceae														
	Annona muricata L.	graviola	Alnz											X
	Annona salzmannii A. DC.	jaca-de-pobre	Aut											
	Annona squamosa L	pinha	Alcv											X
Apiaceae														
	Eryngium foetidum L.	coentro-de-boi	Alnz											
	Foeniculum vulgare Mill.	erva-doce*	Alcv	X			X		X				X	X
Asphodelaceae														
	Aloe vera (L.) Burm. f.	babosa*	Alcv	X	X	X		X	X	X			X	
Asteraceae														
	Acmella uliginosa (Sw.) Cass.	agrião-do-pará	Aut	X										
	Artemisia vulgaris L.	artemige	Alnz	X										X
	Bidens pilosa L.	picão	Alnz									X	X	
	Gymnanthemum amygdalinum (Delile) Sch. Bip. ex Walp.	alumã	Alnz						X			X	X	
	Helianthus annuus L.	girassol	Alcv											
	Pluchea sagittalis (Lam.) Cabrera	quitoco	Aut											
	Solidago chilensis Meyen	arnica	Aut	X										
	Sphagneticola trilobata (L.) Pruski	bem-me-quer	Aut											
	Verbesina macrophylla (Cass.) S.F. Blake	assa-peixe-branco	Aut											
	Vernonanthura brasiliana (L) H. Rob.	assa-peixe	Aut											
Begoniaceae														
	Begonia semperflorens Link and Otto	azedinha	Aut											

(Cont.)

Table 2 *cont.*

Family	Scientific name	Popular name	Origin	1	2	3	4	5	6	7	8	9	10	11
Bignoniaceae														
	Newbouldia laevis (P. Beauv.) Seem.	akokô	Alcv											
	Sparattosperma leucanthum (Vel.) K. Schum.	caroba	Aut											
Boraginaceae														
	Cordia nodosa Lam.	pau-de-formiga	Alnz											
	Heliotropium indicum L.	crista-de-galo	Alcv											
	Varronia curassavica Jacq.	maria-preta	Aut						X		X	X	X	
Bromeliaceae														
	Ananas bracteatus (Lindl.) Schult. and Schult. f.	ananás	Alcv											
Caricacae														
	Carica papaya L.	mamão	Alcv											
Celastraceae														
	Maytenus ilicifolia Mart. ex Reissek	espinhadeira-santa*	Aut				X	X	X	X	X	X	X	X
Combretaceae														
	Terminalia catappa L.	amêndoa	Alnz											
Convovulaceae														
	Merremia dissecta (Jacq.) Hallier f.	chanana	Aut											
	Operculina macrocarpa (L.) Urb.	batata-de-purga	Aut	X	X									
Costaceae														
	Costus spicatus (Jacq.) Sw.	cana-de-macaco	Aut										X	X
Crassulaceae														
	Kalanchoe brasiliensis Cambess	folha-da-costa	Alnz											
	Bryophyllum pinnatum (Lam.) Oken.	folha-da-costa-de-são-caetano	Alcv										X	X
Cucurbitaceae														
	Cucurbita pepo L.	abóbora	Alcv	X	X									
	Momordica charantia L.	melão-de-são-caetano*	Alnz						X			X	X	X
	Sechium edule (Jacq.) Sw.	chuchu	Alcv											
Cyperaceae														
	Rhynchospora nervosa (Vahl.) Boeckeler	capim-estrela	Aut											
	Rhynchospora setigera Griseb.	estrela-do-céu	Aut											
Euphorbiaceae														
	Croton moritibensis Bail.	artemijo	Alnz											
	Euphorbia tirucalli L.	graveto-do-campo	Alnz											
	Euphorbia trigona Mill.	mandacaru-de três-quinas	Aut											
	Jatropha gossypiifolia L.	pião-roxo	Aut										X	
	Tragia volubilis L.	urtiga	Aut											
Fabaceae														
	Bauhinia monandra Kurtz.	pata-de-vaca	Aut											
	Caesalpinia pulcherrima (L.) Sw.	maravilha	Alcv											

(Cont.)

Table 2 *cont.*

Family	Scientific name	Popular name	Origin	1	2	3	4	5	6	7	8	9	10	11
	Cajanus cajan (L.) Huth	andu	Alcv											
	Senna occidentalis (L.) Link	fedegoso	Aut	X										
	Senna uniflora (Mill.) H.S. Irwin and Barneby	mata-pasto	Aut											
	Tamarindus indica L.	tamarindo	Alcv								X			
	Zornia latifolia Sm.	arrozinho	Aut											
Hernandiaecae														
	Sparattanthelium tupiniquinorum Mart.	arco-de-barri	Aut											
Lamiaceae														
	Aeolanthus suaveolens Mart.	macaçá	Alcv											
	Hyptis suaveolens (L.) Poit.	neve-branca	Aut											
	Leonotis nepetifolia (L.) R. Br.	cordão-de-são-francisco	Alnz											X
	Mentha x piperita L.	hortelã–miúdo	Alcv					X	X		X	X	X	X
	Ocimum americanum L.	alfavaca	Alnz											
	Ocimum basilicum L.	manjericão	Alcv	X										
	Ocimum campechianum Mill.	alfavaca-cheirosa	Aut											
	Ocimum gratissimum L.	quioiô	Alnz										X	
	Plectranthus amboinicus (Lour.) Spreng.	hortelã-grosso	Alcv											
	Plectranthus barbatus Andrews	tapete-de-oxalá	Alnz						X			X	X	X
	Plectranthus neochilus Schltr.	boldo	Alcv											
	Pogostemon cablin (Blanco) Benth.	patchouli	Alcv											
	Tetradenia riparia (Hochst.) Codd	mirra	Alcv											
	Vitex agnus-castus L.	alfazema	Alcv								X			
Lauraceae														
	Cinnamomum zeylanicum Blume	canela-cheirosa*	Alcv	X	X	X	X	X	X					
Lythraceae														
	Cuphea racemosa (L. f.) Spreng.	barba-de-são- pedro	Aut											
	Punica granatum L.	romã*	Alcv	X					X			X	X	
Malpighiaceae														
	Byrsonima verbascifolia (L.) DC.	murici	Alnz											
	Malpighia emarginata DC.	acerola	Alcv											
Malvaceae														
	Abelmoschus esculentus (L.) Moench	quiabo	Alcv											
	Gossypium hirsutum L.	algodão	Alnz	X										
	Pavonia cancellata (L.) Cav.	baba-de-boi	Aut											
	Sida rhombifolia L.	vassourinha-de-relógio	Aut											
	Triumfetta rhomboidea Jacq.	pegadinho-branco	Aut											
Melastomataceae														
	Clidemia hirta (L.) D. Don	folha-de-fogo	Aut											
	Miconia albicans (Sw.) Steud.	canela-de-velho	Aut											

(Cont.)

Table 2 *cont.*

Family	Scientific name	Popular name	Origin	1	2	3	4	5	6	7	8	9	10	11
	Miconia minutiflora (Bompl.) DC.	quaresmeira	Aut											
Moraceae														
	Morus alba L.	amora	Alcv										X	
Myrtaceae														
	Eucalyptus globulus Labill.	eucalipto*	Alcv	X	X		X			X	X	X	X	
	Eugenia uniflora L.	pitanga*	Aut				X	X				X	X	
	Psidium guajava L.	goiaba*	Alnz	X			X					X	X	X
	Psidium guineense Sw.	araçá-mirim	Aut											
	Syzygium cumini (L.) Skeels	jamelão	Alcv										X	X
Oxalidaceae														
	Averrhoa bilimbi L.	biri-biri	Alcv											
	Averrhoa carambola L.	carambola	Alcv											
Papaveraceae														
	Argemone mexicana L.	cardo-santo	Alnz											
Passifloraceae														
	Passiflora edulis Sims	maracujá*	Aut					X	X			X	X	X
Phyllanthaceae														
	Phyllanthus niruri L.	quebra-pedra*	Aut				X	X	X			X	X	X
Phytolacaceae														
	Petiveria alliacea L.	guiné	Alnz											X
Piperaceae														
	Peperomia pellucida (L.) Kunth	favaquinha-de-cobra	Aut											
	Piper aduncum L.	tapa-buraco	Aut											
	Piper arboreum Aubl.	bete-cheiroso	Aut											
	Piper ilheusense Yunc.	bebete-branca	Aut											
	Piper umbellatum L.	capeba	Aut											
Plantaginaceae														
	Plantago major L.	trançagem*	Alnz						X			X	X	X
	Scoparia dulcis L.	vassourinha	Aut											X
Poaceae														
	Cymbopogon citratus (DC.) Stapf.	capim-santo*	Alcv				X	X	X			X		X
Polypodiaceae														
	Phlebodium aureum (L.) J. Sm.	abre-caminho	Aut											
Portulacaceae														
	Talinum paniculatum (Jacq.) Gaertn.	língua-de-vaca	Aut											
Rubiaceae														
	Borreria verticillata (L.) G. Mey.	vassourinha-de-botão	Aut											
	Coffea arabica L.	café	Alcv											
	Sabicea grisea Cham. and Schltdl.	maçã-do-mato	Aut											
	Spermacoce verticillata L.	carqueja	Aut											
Rutaceae														
	Citrus aurantiifolia (Christm.) Swingle	limão-galego	Alcv											

(Cont.)

Table 2 *cont.*

Family	Scientific name	Popular name	Origin	1	2	3	4	5	6	7	8	9	10	11
	Citrus aurantium L.	laranja-da-terra	Alcv	X	X			X	X			X		
	Ruta graveolens L.	arruda	Alcv	X									X	
Salicaceae														
	Casearia sylvestris Sw.	são-gonçalinho	Aut						X			X	X	
Solanaceae														
	Cestrum axillare Vell.	quarana	Aut	X										
	Solanum paniculatum L.	jurubeba	Aut	X								X	X	X
	Solanum pimpinellifolium L.	tomate-miúdo	Aut											
	Solanum stipulaceum Roem. and Schult.	caiçara	Aut											
Urticaceae														
	Pilea microphylla (L.) Liebm.	brilhantina-de-pedra	Alnz											
Verbenaceae														
	Lantana camara L.	camará	Aut	X										X
	Lippia alba (Mill.) N.E. Br. ex Britton and P. Wilson	erva-cidreira	Aut						X			X		X
	Priva lappulacea (L.) Pers.	pega-pega	Aut											
	Stachytarpheta cayennensis (Rich.) Vahl	jerebão	Aut	X										X
Violaceae														
	Hybanthus calceolaria (L.) Oken	purga-do-campo	Aut											
Vitaceae														
	Cissus verticillata (L.) Nicolson and C. E. Jarvis	insulina	Aut											
Zingiberaceae														
	Alpinia zerumbet (Pers.) B.L. Burtt. and R.M. Sm.x	água-de-alevante	Alnz						X				X	

Five species cited by informants were well documented: *Aloe vera* (L.) Burm. f. (eight citations), *Maytenus ilicifolia* Mart. ex Reissek (eight citations), *Schinus terebinthifolia* Raddi (seven citations), *Psidium guajava* L. (six citations), and *Phyllanthus niruri* L. (six citations). Three of these species were considered autochthonous, and their traditional use was previously documented (Anvisa, 2013), thus, it posed the possibility for use in local health practices in the municipal health services of SFC-BA.

Data gathered from the tours and interviews indicated that 90% of plants utilized by our informants were cultivated in home gardens or collected near their residences. However, some leaves, bark and seeds (principally those from dryland environments as the Caatinga) were purchased in the public market at the nearby municipality of Candeias. It is interesting to note that urban migration did not eliminate the habit of cultivating plants, and the gardens of many informants had species derived from the local vegetation (Aut) as well as allochthonous plants (Alcv and Alnz). These same observations were made in other ethno botanical studies (Amorozo, 2002; Carniello et al., 2010), and the importance of home gardens was expressed in the words of one of the interviewees:

"I get the plants at João's house. He's got all kinds of plants. If he was home right now I'd take you there" (Mr. ASJ).

The signs and symptoms treated with medicinal plants most frequently cited by the informants were grouped according to the International Statistical Classification of Diseases and Health Problems - CID 10 (WHO, 2007) in: I, Infectious diseases and parasite infections (22%); XI, Illnesses of the digestive tract (16%); XXI, Factors that influence one's state of health (9%), taking into consideration ritual/mystical uses; IV, Endocrine, nutritional, and metabolic problems (7%); and IX, Illnesses of the circulatory system (7%) within a total of 254 citations of different ailments (Table 3).

The most cited form of preparation is tea/infusions (71), followed by syrups (27), immersion baths (32), inhaling smoke (11), or other forms (19). Some plants are suitable for more than one use. One informant explained the use of the *sabugueiro* plant:

"I use the leaves and flowers of the sabugueiro to prepare baths and syrup for fevers. That's what I learned with her, my mother, who was born here in 1905" (Ms. F).

Table 3
Citations of the signs, symptoms, and illnesses mentioned by the informants in São Francisco do Conde, Bahia, grouped according to the International Statistical Classification of Diseases and Ailments of the WHO – CID 10.

International classification of illnesses, injuries, and causes of death	Citations of the signs, symptoms and illnesses in São Francisco do Conde	Nº Citations
I - Some infectious diseases and parasite infections	Colds, whooping cough, tuberculosis, sore throats, infections, measles, throat inflammations, mumps, parasitic diseases	56
II - Neoplasms (tumors)	Cancer	2
III - Illnesses of the blood, hematopoietic organs, and some immune problems	Blood depurative	1
IV - Endocrine, nutritional, and metabolic problems	Diabetes, tiredness, high cholesterol, hepatitis, to lose weight, decrease fat, menopause	19
V - Mental and behavioral problems	Calmative	0
VI - Illnesses of the nervous system	Depression, calmatives	9
VII - Illnesses of the eyes and related structures	Inflammations of the eyes, sinus problems	4
VIII - Illnesses of ears and the mastoid apophysis		0
IX - Illnesses of the circulatory system	Heart problems, strokes, high blood pressure	18
X - Illnesses of the respiratory system	Catarrh, tiredness, chest congestion, lung pain, shortness of breath, coughing, coughing in children, constipation	14
XI - Illnesses of the digestive system	Stomach, liver, congestion, dysentery, diarrhea, indigestion, intestinal pain, gases, gastritis, gallstones, stomach aches, constipation, hepatitis	40
XII Illnesses of the skin and sub-cuticle tissues	Wounds, wound healing, skin ulcers, tinea pedis, damaged fingernails, scrapes and bruises	8
XIII - Illnesses of the osteomuscular system and connective tissues	Inflamed joints, back pain, joint pain, joint inflammation, inflammation of the bones, impacts, rheumatism, swelling from bruising	9
XIV - Illnesses of the genital-urinary system	Uric acid, kidneys, kidney pain, kidney stones, urinary infections, diuretics, menstrual pains, menopause, hot flashes, impotence, prostrate, nflammation of the urethra, genital cleaning, birth	21
XV - Pregnancy, birth, and puerperium.	Aids childbirth	4
XVI - Some afflictions originating during the perinatal period	Postpartum recovery, eliminates the remains of the birth process	1
XVII - Congenital malformations, deformities, and chromosome anomalies		0
XVIII - Symptoms, signs, and abnormal discoveries during clinical and laboratory examinations not classified under other headings	Fever, swelling, pain, headache, toothache, body aches, leg pains, post operative hernias, hair loss, teething in infants, damaged fingers, throat problems	26
XIX - Lesions, poisoning, and some other consequences of external factors		0
XX - External causes of morbidity and death		0
XXI - Factors that influence one's state of health and contacts with health services	Evil eye, attraction of riches, reuniting husbands and wives, opening doors in life, removing negative spirits	22
Total		254

Baths and inhaling smoke are associated with ritualistic uses. The most common manner of using fresh plants is to prepare drinks or baths, while dry plants are burned to inhale their smoke (Almeida, 2012). Baths are widely used in the Afro-Brazilian religions to regain the equilibrium of the vital functions; "baths" and "smoke inhalation", along with chanting, helps cleanse the body. These procedures begin with collecting the plant; which receives from the forest the primordial elements critical for this cleaning, followed by their preparation and use (Camargo, 1999; Botelho, 2010). Baths were the second most cited form of plant use in other localities in Bahia State (Moreira et al., 2002; Mota and Dias, 2012; Barboza da Silva et al., 2012).

The data gathered from the workers at the Basic Health Clinics proved that users of plant remedies did not normally share their knowledge with health professionals. This probably may be due to the fact that these people do not view allopathic medicine as being similar to their use of folk remedies, but rather as a separate and distinct medical reality with which they are uncomfortable. Even though it was established that many individuals in the community use traditional/popular remedies in the form of teas, baths, prayers, smoke treatments, and dietary restrictions along with allopathic medicine. This situation indicates the need for better integration of folk medicine practitioners with local health system professionals.

During the workshops taken along with SFC-BA health professionals, we discussed whether the health workers in the Basic Health Clinics were aware of the health practices in the communities that still preserve traditional knowledge. It could be seen that even the Community Health Agents who cultivate medicinal plants in their home gardens and used them regularly (34%) did not consider their own knowledge regarding these cures while working in the Basic Health Clinics even if they behaved as "professionals" and ignored the traditional practices around them and not sharing their knowledge of popular practices.

An interesting dichotomous situation was observed because, despite the use of medicinal plants was a common practice in the region, the traditional knowledge was not considered, shared, or even valued within the reality of the Basic Health Clinics. This points the necessity to acknowledge the relevance of the personal knowledge in relation to their cultural, religious and collective practices within the larger concept of equity (Brasil, 2011).

The introduction of additional therapeutic options into official health services will allow the creation of new health approaches that integrate knowledge, inclusion, and co-responsibility (Vasconcelos, 2008). These changes could stimulate greater adhesion to treatments and greater satisfaction with the services offered, and promote the principles of the National Policy of Basic Attention (Brasil, 2011), which values individuals and their socio-cultural insertion, seeking to obtain integral medical attention based on the pillars of: humanize, incorporate, create links, and share responsibility.

The information given by the SFC-BA respondents summarized the use of 126 different plant species, of which 61 were autochthonous and 65 allochthonous (34 naturalized and 31 cultivated). Cross-referencing the information provided with available information in the different editions of the Brazilian Pharmacopeia, and other official documents of the Brazilian Health Ministry, allowed a more detailed reflection on the traditional use of these plants (and their potential large-scale use) in terms of their conservation. The traditional use of a plant species is one of the currently used criteria in public health legislation to register industrialized herbal medicine within the Anvisa under resolution that regulates the registration of herbal medicines in Brazil - RDC 14/2010 (Brasil, 2010).

Taking into consideration that about half of the species used in SFC-BA are autochthonous to the region, and that these same species are present in official documents as the National List of Plants of Interest to the SUS (14 species), the Brazilian Pharmacopoeia 1st Ed. (14 species), Medicinal Plant Research Program (12 species) and regulation about of herbal drugs, RDC 10/2010 (10 species) (Fig. 2). This collection took into account (among other criteria) their traditional use (Almeida et al., 2012), and as a result it can be inferred that official recognition opens the door to larger numbers of herbal drugs and herbal medicines derived from the Brazilian flora to be used in primary health care. This perspective would minimize the exclusion of species and products derived from the national flora that have been progressively eliminated for medicinal use since the 1st edition of the Pharmacopoeia due to a lack of proven efficacy and safety (Brandão et al., 2009).

The analyses of our data concerning medicinal plant use in SFC-BA indicated that fourteen plant species that fulfilled the criteria of traditional use by local populations, cited in official documents produced by the Brazilian Health Ministry, have the possibility to be introduced in the municipal SUS; these species are highlighted in Table 2 with an asterisk. However, any stimulation of the use of the native flora must be associated with projects focusing on their conservation, cultivation, and management to minimize damage on local ecosystem caused by increased harvesting pressure beyond the cultural impact on the distribution of products originated from traditional knowledge (Diegues and Arruda, 2001; Moreira et al., 2002; Mota and Dias, 2012; Barboza da Silva, 2012). These preventive actions will be extremely important because noticeable degradation of populations of important plant resources have been recorded in other regions of the country due to increased harvesting of species of the families Asteraceae, Fabaceae, and Bignoniaceae (Melo et al., 2009). It will be necessary to create initiatives guided by ethno-research methodologies, to inventory plant species and folk practices in the areas of health and agriculture, to guarantee the sustainable use of those resources and the conservation of local biodiversity, as well as equitable sharing of the benefits to the community (Santilli, 2005; Garay and Becker, 2006; Alves and Rosa, 2007).

Conclusions

We suggest the promotion of studies that aim to ensure the effectiveness and safety of the rational use of the plant species cited with the greatest frequency by the informants, and by official documents into public health practices in SFC-BA; and their incorporation into the regular services of the USF, as well as permanent education programs, in conformity with

the National Policies of Permanent Health Education (MS, 2009) and Popular Health Education (CNSS, 2013). The most frequent species in official documents were: *Aloe vera* (L.) Burm. f.; *Cinnamomum zeylanicum* Blume; *Cymbopogon citratus* (DC.) Stapf.; *Eucalyptus globulus* Labill.; *Eugenia uniflora* L.; *Foeniculum vulgare* Mill.; *Maytenus ilicifolia* Mart. ex Reissek; *Momordica charantia* L. *Passiflora edulis* Sims; *Phyllanthus niruri* L.; *Plantago major* L.; *Psidium guajava* L.; *Punica granatum* L.; *Schinus terebinthifolia* Raddi.

Although SFC-BA relies on the participation of local citizens in the municipal health council – a viable space for exchanging information, for planning, and for discussing procedures – this body has not yet been used as an efficient forum for information exchange between health workers and the community. The introduction of phytotherapies into the different municipalities in Bahia State represents an essential strategy for the maintenance of public health, and it will be necessary to take into consideration the diversity of regional plant genetic resources, the epidemiological profiles of each municipality or region, and the socio-cultural characteristics influencing their health care practices. These analyses will enrich health practices while supporting regional cultural values, which must be aligned with planning processes for the conservation of species and ecosystems. This planning will be necessary to guarantee that the increased consumption of medicinal plants and phytotherapeutics agrees with management strategies that can reduce damage to local ecosystems.

Contributions of the authors

LMLG and ML, curator at the ALCB herbarium and undergraduate student, respectively, contributed in collecting and identifying plant specimens, and their preparation for herbarium inclusion; AP aided in the analysing and recording of the interview data; MQORS, a pharmacist at Farterra/UBFA, accompanied the field studies; MZA and PHOL developed the project and wrote the present article; ALP supervised the postdoctoral work of MZA that produced data for this article and also contributed to critical revision of its contents. All of the authors read the final version and approved its submission.

Conflicts of interest

The authors declare no conflicts of interest.

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REFERENCES

Akerele, O., Heywood, V., Synge, H., 1991. Conservation of medicinal plants. Cambridge: Cambridge University Press.

Albuquerque, U.P., Lucena, R.F.P., 2008. Métodos e técnicas na pesquisa etnobotânica. 2nd Ed. Recife: NUPEEA.

Albuquerque, U.P.D., Hanazaki, N., 2006. As pesquisas etnodirigidas na descoberta de novos fármacos de interesse médico e farmacêutico: fragilidades e pespectivas. Rev. Bras. Farmacogn. 16, 678-689.

Alexiades, M.N., 1996. *Selected guidelines for ethnobotanical research: a field manual*. New York: The New York Botanical Garden.

Alho, C.J.R., 2012. Importância da biodiversidade para a saúde humana: uma perspectiva ecológica. Estudos Avançados 26, 151-165.

Almeida, M.Z., 2012. Plantas medicinais. 3rd Ed. Salvador: Edufba.

Almeida, M.Z., Silva, M.Q.O.R., Guedes, M.L., Lisboa, M., Léda, P.H.O., Peixoto, A.L. 2012. Etnopesquisa como estratégia na seleção de plantas medicinas nativas para compor os mementos estadual e municipais: contribuição para a implantação da fitoterapia no SUS no Estado da Bahia. III Congreso Iberoamericano de Fitoterapia. Foz do Iguaçu, Brasil.

Alves, R.R.N., Rosa, I.M.L., 2007. Biodiversity, traditional medicine and public health: where do they meet? J. Ethnobiol. Ethnomed. 3, 1-9.

Amorozo, M.C.M., 2002. Use and diversity of medicinal plants in Santo Antonio do Leverger, MT, Brazil. Acta Bot. Bras. 16, 175-188.

Anvisa, 2008. Instrução normativa nº 5 de 11 de dezembro de 2008. Lista de Medicamentos Fitoteápicos de Registro Simplificado. Ministério da Saúde. Agência Nacional de Vigilância Sanitária, http//:e-legis.anvisa.gov.br/leisref/public/showact.php, accessed April 2012.

Anvisa, 2010. RDC nº 10 de 9 de março de 2010. Dispõe sobre Notificação de drogas vegetais junto à Anvisa. Ministério da Saúde. Diário Oficial, Brasília, March 10, 2010.

Anvisa, 2011. Formulário de Fitoterápicos da Farmacopeia Brasileira, 1ª Edição , Ministério da Saúde. Agência Nacional de Vigilância Sanitária. RDC nº 60, de 10 de novembro de 2011. Diário Oficial, Brasília, November 11, 2011.

Anvisa, 2013. Consulta Pública n° 14, de 14 de maio de 2013. Ministério da Saúde. Agência Nacional de Vigilância Sanitária. Diário Oficial, Brasília, May 15, 2013.

APG III, 2009. An update of the Angiosperm Phylogeny Group Classification for the orders and families of flowering plants: APG III. Bot. J. Linn. Soc. 161, 105-1121.

Araújo, M., 2002. Das ervas medicinais à fitoterapia. São Paulo: Atelie Editorial/Fapesp.

Azevedo, P.O., 2011. Recôncavo: território, urbanização e arquitetura. In: Caroso, C., Tavares, F., Pereira, C. (org.) *Baía de Todos os Santos: aspectos humanos*. Salvador: Edufba, p. 205-252.

Bailey, K., 1994. *Methods of social research*. 4th Ed. New York: The Free Press.

Barboza da Silva, N., Regis, A.C.D., Esquibel, M.A., Santos, J.E.P., Almeida, M.Z., 2012. Uso de plantas medicinais na comunidade quilombola da Barra II – Bahia, Brasil. Bol. Latinoam. Caribe 11, 435-453.

Botelho, P.F., 2010. O segredo das folhas e os rituais de cura na tradição afro-brasileira. VI Enecult 2010. Salvador, Brasil. http://www.cult.ufba.br/wordpress/24807.pdf, accessed March 2012.

Brandão, M.G.L., Cosenza, G.P., Grael, C.F.F., Netto Junior, N.L., Monte-Mór, R.L.M., 2009. Traditional uses of American plant species from the 1st edition of Brazilian Official Pharmacopoeia. Rev. Bras. Farmacogn. 19, 478-487.

Brasil, 2010. Ministério da Saúde, Agência Nacional de Vigilância Sanitária (ANVISA). RDC nº 14 de 31 de março de 2010. Dispõe sobre o registro de medicamentos fitoterápicos. Diário Oficial, Brasília, April 5, 2010.

Brasil, 2011. Conselho Nacional de Secretários de Saúde. Sistema Único de Saúde. Coleção Para Entender a Gestão do SUS 2011. 1st Ed. Brasília: CONASS.

Camargo, M.T.L.A., 1999. Plantas medicinais de religiões de influência africana no Brasil e sua ação farmacológica. Dominguezia 15, 21-26.

Carniello, M.A., Silva, R.S., Cruz, M.A.B., Neto, G.G., 2010. Quintais urbanos de Mirassol D'Oeste-MT, Brasil: uma abordagem etnobotânica. Acta Amazon. 40, 451-470.

Carvalho, A.C., Balbino, E.E., Maciel, A., Perfeito, J.P.S., 2008. Situação do registro de medicamentos fitoterápicos no Brasil. Rev. Bras. Farmacogn. 18, 314-319.

Carvalho, A.C.B., Perfeito, J.P.S., Costa e Silva, L.V., Ramalho, L.S., Marques, R.F.O., Silveira, D., 2011. Regulation of herbal medicines in Brazil: advances and perspectives. Braz. J. Pharmac. Sci. 47, 467-473.

Carvalho, K.S.A., Argôlo, T.X., 2011. São Francisco do Conde: planejamento urbano, tendências e vocações. II Simpósio Cidades Médias e Pequenas da Bahia. Vitória da Conquista, Brasil. http://www.uesb.br/eventos/simposio_cidades, accessed July 2012.

CNSS, 2013. Nota Técnica 16/2013. Política Nacional de Educação Popular em Saúde – PNEP-SUS. Conselho Nacional de Secretários de Saúde. http://www.conass.org.br, accessed May 2013.

Crepaldi, M.O.S., Peixoto, A.L., 2010. Use and knowledge of plants by Quilombolas as subsidies for conservation efforts in an area of Atlantic Forest in Espírito Santo State, Brazil. Biodivers. Conserv. 19, 37-60.

Diegues, A.C., Arruda, S.V., 2001. Saberes tradicionais e biodiversidade no Brasil. Ministério do Meio Ambiente. São Paulo: USP.

F. Bras., 2010. Farmacopeia Brasileira, 5th Agência Nacional de Vigilância Sanitária. Brasília: Ministério da Saúde. RDC 49 de 23 de novembro de 2010.

Farm. Bras., 1959. Farmacopeia Brasileira, 1959. 2nd São Paulo: Indústria Gráfica Siqueira S.A., Presidência da Republica dos Estados Unidos do Brasil. Decreto 37.843 de 1º. setembro de 1955.

Farm. Bras., 1977. Farmacopeia Brasileira. 3rd São Paulo: Organização Andrei, Ministério da Saúde. Decreto 78.840 de 25 novembro de 1976

Farm. Bras., 1996. Farmacopeia Brasileira - Monografias,, 1988-1996. 4th São Paulo: Atheneu Editora Ltda, Ministério da Saúde. Decreto 96.607 de 30 de agosto de 1988.

Forzza, R.C., Baumgratz, J.F.A., Bicudo, C.E.M., Carvalho Jr., A.A., Costa, A., Costa, D.P., Hopkins, M., Leitman, P.M., Lohmann, L.G., Maia, L.C., Martinelli, G., Menezes, M., Morim, M.P., Coelho, M.A.N., Peixoto, A.L., Pirani, J.R., Prado, J., Queiroz, L.P., Souza, V.C., Stehmann, J.R., Sylvestre, L.S., Walter, B.M.T., Zappi, D. (Orgs), 2010. Catálogo de plantas e fungos do Brasil. Instituto de Pesquisas Jardim Botânico do Rio de Janeiro. 2 vols. Rio de Janeiro. On line and printed, http://floradobrasil.jbrj.gov.br.

Garay, I., Becker, B.K., 2006. Dimensões humanas da biodiversidade: o desafio de novas relações sociedade-natureza no séc. XXI. Petrópolis: Vozes.

IBGE, 2013. www.ibge.gov.br, accessed in September 2013.

Lemos, J.J.S., 2007. *Mapa da exclusão no Brasil: radiografia de um país assimetricamente pobre*. 2nd Ed. Fortaleza: Banco do Nordeste do Brasil.

Luz, M.T., 2007. Ordem social, instituições e políticas de saúde no Brasil: textos reunidos. 1st Ed. Rio de Janeiro: Cepesc-IMS/UERJ-Abrasco.

Melo, J.G., Amorim, E.L.C., Albuquerque, U.P., 2009. Native medicinal plants commercialized in Brazil – priorities for conservation. Environ. Monit. Assess. 156, 567-580.

Moreira, R.D.C.T., Costa, L.D.B., Costa, R.C.S., Rocha, E.A., 2002. Abordagem etnobotânica acerca do uso de plantas medicinais na Vila Cachoeira, Ilhéus, Bahia, Brasil. Acta Farm. Bonaer. 21, 205-211.

Moro, M.F., Souza, V.C., Oliveira-Filho, A.T., Queiroz, L.P., Fraga, C.N., Rodal, M.J.N., Martins, F.R., 2012. Alienígenas na sala: o que fazer com espécies exóticas em trabalhos de taxonomia, florística e fitossociologia? Acta Bot. Bras. 26, 991-999.

Mota, R.S., Dias, H.M., 2012. Quilombolas e recursos florestais medicinais no sul da Bahia, Brasil. Rev. Intern. Desenv. Loc. 13, 151.

MS, 2006a. Portaria 971 de 3 de maio de 2006, Ministério da Saúde. Aprova a Política Nacional de Práticas Integrativas e Complementares (PNPIC) no Sistema a Único de Saúde. Diário Oficial, Brasília, May 4, 2006.

MS, 2006b. Decreto nº 5.813, de 22 de junho de 2006, Ministério da Saúde. Aprova a Política Nacional de Plantas Medicinais e Fitoterápicos e dá outras providências. Diário Oficial, Brasília, June 23, 2006.

MS, 2006c. O Papel da CEME na Implantação da Fitoterapia do SUS. Textos Básicos em Saúde. Brasília: Secretaria de Ciência, Tecnologia e Insumos Estratégicos, Ministério da Saúde.

MS, 2009. Política Nacional de Educação Permanente em Saúde. Textos Básicos em Saúde. Brasília: Secretaria de Gestão do Trabalho e da Educação na Saúde, Ministério da Saúde.

MS, 2010. Relação Nacional de Plantas Medicinais de Interesse ao SUS. Ministério da Saúde. http://portal.saude.gov.br/portal/arquivos/pdf/RENISUS_2010.pdf, accessed December 2012.

MS, 2011. Aprova a Política Nacional de Atenção Básica, estabelecendo a revisão de diretrizes e normas para a organização da atenção básica, para a Estratégia Saúde da Família (ESF) e o Programa de Agentes Comunitários de Saúde (PACS). Ministério da Saúde. Portaria nº 2.488 de 21 de outubro 2011. Diário Oficial, Brasília, October 24, 2011.

Myers, N., Mittermeier, R.A., Mittermeier, C.G., Fonseca, G.A.B., Kent, J., 2000. Biodiversity hotspots for conservation priorities. Nature 403, 853-858.

Parés, L.N., 2005. Crioulização no recôncavo baiano, 1750-1800. Afro-Ásia 33, 87-132.

Perfeito, J.P.S., 2012. O registro Sanitário de Medicamentos Fitoterápicos no Brasil: uma avaliação da situação atual e das razões de indeferimento. Brasília 162 p. Master's Dissertation, Universidade de Brasília.

RBJB, 2006. Estratégia Global para Conservação de Plantas. Rede Brasileira de Jardins Botânicos, Rio de Janeiro: Instituto de Pesquisas Jardim Botânico do Rio de Janeiro.

Richardson, D.M., Pysek, P., Rejmanek, M., Barbour, M.G., Panetta, F.D., West, C.J., 2000. Naturalization and invasion of alien plants: concepts and definitions. Divers. Distrib. 6, 93-107.

Saad, G.A., Léda, P.H.O., Sá. I.M., Seixlack, A.C., 2009. Plantas medicinais e fitoterapia na Política Nacional de Saúde. In: Saad, G.A., Léda, P.H.O., Sá. I.M., Seixlack, A.C. (orgs) *Fitoterapia contemporânea: tradição e ciência na prática clínica*. Rio de Janeiro: Elsevier, p. 362-374.

Santana, J., 2011. São Francisco do Conde e o enigma da riqueza e da pobreza no Reconcavo Baiano. Salvador, 159 p. Master's Dissertation, Universidade Católica de Salvador.

Santilli, J., 2005. Socioambientalismo e novos direitos: proteção jurídica à diversidade biológica e cultural. São Paulo: Peirópolis, ISA, IEB.

Silva, R.A.D., 1929. Código farmacêutico brasileiro, Farmacopeia dos Estados Unidos do Brasil, 1929. 1st São Paulo: Companhia Editora Nacional, 1929, Presidência da Republica dos Estados Unidos do Brasil, Decreto 17.509 de 4 novembro de 1926,

Sutherland, W.J., Pullin, A.S., 2004. The need for evidence-based conservation. Trends Ecol. Evol. 19, 305-308.

Vasconcelos, E.M., 2008. Educação popular e a atenção à saúde da família. 4th Ed. São Paulo: Hucitec.

Virgílio, L.J., Marques, L.C., 2004. Avaliação dos efeitos da Resolução RDC 17 sobre fitoterápicos de registros antigos. Rev. Bras. Farmacogn. 14, 3-6.

WHO, 2006. Traditional Medicine Strategy 2002-2005. World Health Organization, WHO Policy Perspectives on Medicine. http://whqlibdoc.who.int/hq/2002/who_edm_trm_2002.1.pdf, accessed April 2012.

WHO, 2007. Classificação estatística internacional de doenças e problemas relacionados à saúde - CID10. World Health Organization, Secretaria Executiva do Ministério da Saúde, Brasil. Available in: http://www.datasus.gov.br/cid10/V2008/WebHelp/cid10.htm, accessed March 2012.