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Original Article

Conservation of Nature

Knowledge and Use of the Flora in a Quilombola Community of Northeastern Brazil

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ABSTRACT

An ethnobotanical survey was carried out in the Quilombola Community of Serra do Evaristo in the municipality of Baturité, Ceará state, Brazil. We interviewed 41 residents who provided information on the plants used, the types of use, the preparation methods, the purchase location of the plants and their knowledge source. One hundred and fourteen species belonging to 53 botanical families were recorded. Six types of use were reported, with most species being used for medicinal purposes (43% of the species), followed by food (25%), decoration (23%), construction (5%), domestic fuel (3%) and ritualistic purposes (3%). The most cited species were *Musa paradisiaca* L. (banana), *Zea mays* L. (corn), *Phaseolus vulgaris* L. (bean), *Citrus sinensis* (L.) Osbeck (orange), *Melissa officinalis* L. (common balm), *Aloe vera* (L.) Burm.f. (aloe vera), *Cymbopogon citratus* Stapf. (lemon grass), *Mentha* sp.(mint) and *Psidium guajava* L. (guava). The knowledge and use of the plants is part of a cultural heritage passed down through families, and has been helping the survival and maintenance of the Quilombola identity in the studied community.

Keywords: ethnobotany, traditional populations, afro-descendants.

1. INTRODUCTION

Ethnobotany includes the study of human societies, their ecological, symbolic and cultural interactions with plants, as well as how these societies interpret and manage their knowledge (Boscolo et al., 2015). Ethnobotanical studies are important, especially in Brazil, since its territory houses one of the richest floras in the world (Lewinsohn & Prado, 2002) and includes many traditional communities of different ethnicities (Diegues & Viana, 2004).

Traditional communities are groups that have conquered, or are struggling to conquer a public identity that consists in the use of low impact environmental techniques and cultural traits different from other forms of social organization (Medeiros & Albuquerque, 2012). Brazilian legislation has recognized traditional peoples since the Constitution of 1988; however, it was not until the Federal Decree No. 6,040 of 2007 (Brasil, 2007) that the legislation gave them more attention by establishing the National Policy for the Sustainable Development of Traditional Peoples and Communities (*Política Nacional de Desenvolvimento Sustentável dos Povos e Comunidades Tradicionais*).

Brazil has a wide range of traditional communities, but those best known include: the Indigenous, Quilombola, Ribeirinho, Seringueiro, Castanheiro and Gypsy communities; among those of lesser expression are the Quebradeiras de Coco, the Fundo de Pasto and the Faxinalenses populations (Grzebieluka, 2012). These diverse traditional communities have cultures rich in customs and beliefs, which have been historically constituted and maintained through struggles and resistance. For example, the Quilombos arose from the need of fugitive slaves to organize themselves into autonomous communities (Treccani, 2006). However, the concept has been broadened and Quilombos are defined as "every black rural community that groups slave descendants living from a subsistence culture where cultural manifestations have a strong link with the past" (Diegues & Viana, 2004, p. 266).

This strong bond with the past enables these peoples with a wealth of knowledge about local biodiversity. However, this knowledge is susceptible to external pressures, and modifications may occur either through the loss of empirical knowledge and genetic heritage or by the expansion of the local repertoire (Alencar et al., 2014; Almeida-Neto et al., 2015); once lost, it becomes difficult to recover (Albuquerque & Andrade, 2002). For this reason, it is important that traditional knowledge is documented, as these data can be used to ensure environmental services combining the maintenance of biodiversity with improvement in the quality of life of their inhabitants, in addition to contributing to the permanence of the cultural identity of these peoples (Diegues, 2000).

Considering the importance of the Quilombola people based on the ethnical and cultural point of view, the objective of this study was to document the knowledge and use of the flora by a Quilombola community of Northeast Brazil. Thus, from the ethnobotanical point of view, we analyzed: i) which plants are used by the Quilombola community of Serra do Evaristo in Baturité-Ceará, the types of use, the parts used, preparation methods, the purchase location of the plants, the knowledge origin and the transfer form of the traditional knowledge; and ii) what is the importance of these plants for the community.

2. MATERIAL AND METHODS

2.1. Description of the study area

The study area is located in the Baturité massif, Ceará state, northeastern Brazil, a mountainous complex, 70 km from the coast (4°19' S, 38°53' W). The geographic position of this mountain massif promotes orographic rains on the windward slope due to the action of the coastal winds that bring high humidity (900 mm/year to 1400 mm/year). On the other hand, a rain shadow forms on the leeward slope, resulting in pluviometric indexes below 700 mm/year (Mantovani, 2006). Due to the mountainous relief and the altitude, the windward and leeward slopes have different climates and vegetation. The windward side is under the influence of colder and more humid climate (Aw – warm subhumid climate with average annual temperatures between 20 and 26 °C), where vegetation of the Evergreen Seasonal humid forest and Semi-deciduous dry forest predominate (IBGE, 2012), with biota composed of elements from both the Atlantic forest and the Amazonian forest. The leeward slope has a drier climate (BSh – semi-arid hot, with average temperatures of 27 °C), resembling vegetation of the Deciduous dry forest and Steppe Savannas called

Caatinga (IBGE, 2012), a deciduous prickly vegetation that is predominant in northeastern Brazilian plains (Araújo et al., 2006).

2.2. Characterization of the community

The Quilombola community of Serra do Evaristo, in the municipality of Baturité, is located on the windward slope of the massif at an altitude of 533 m (Oliveira et al., 2016). It is composed of approximately 560 inhabitants distributed across 135 families that mainly live on family agriculture (Maciel et al., 2016). The vegetation is a Submontane Semi-deciduous Seasonal Forest with an average annual precipitation of 1079 mm (Araújo et al., 2006).

We initially conducted an interview with the community leader to obtain information about the history and description of the community, which is useful information for understanding the knowledge and relationship that the community maintains with the local flora, as well as information about the knowledge and use of the local flora.

Regarding his self-knowledge, the community leader stated that:

> *The concept of Quilombo understood by the community is characteristically contemporary, where the historical records do not report rebel groups that came to live in the mountains, but rather groups that develop resistance mechanisms and struggle to maintain and reproduce their practices and ways of life on a daily basis* (Community Leader).

This description is in agreement with the modern concept that seeks to break the binomial fugitive-resistance in the definition of quilombo (Schmitt et al., 2002). However, the community leader clarified that not all members of the community recognize themselves as Quilombola, by stating that

> *If the community is the entire population of the territory, not everyone accepts themselves as blacks, quilombolas or remnants of quilombos. What we are experiencing is a process of affirming our identity. If the community to which we refer goes to the Association, it recognizes itself as such, so much so that there has been a reformulation in its social status to include a specific article on self-recognition* (Community Leader).

Despite the self-recognition not being unanimous, this community is in agreement with Maciel et al. (2016), having traces of African culture clearly respected and reflected in its form of organization, way of life and living cultural traits such as the *São Gonçalo* dance and its typical cuisine with *mungunzá salgado*, papaya marmalade and *cocada*. But is it also true for the knowledge and use of plants? To answer this question, we will describe the procedures for collecting and analyzing data regarding ethnobotanical research in the community.

2.3. Data collection and analysis

The non-probabilistic "snowball" technique with linear sampling was used. This technique consisted of the indication made by the community leader of a first local expert, a Quilombola individual recognized as holding knowledge about the flora. This individual then suggested another participant, so that the sample grew in a linear rhythm until no further indications were made. We interviewed eight local experts. In order for the sample to include a larger number of community members, we applied the snowball technique with other quilombola members who were not recognized as local experts, but who made use of the plants for various purposes. The criteria to participate in this group were: being over the age of eighteen, recognizing themselves as quilombola, having a fixed residence in the community for more than ten years and indicating only one member per family.

The snowball technique is suitable for ethnobotanical research, since it enables creating a chain of references when accessing a subgroup of individuals who hold knowledge about the flora that one intends to study (Albuquerque & Lucena, 2004). A sample of about 20 to 30 participants is adequate, since after that number the information starts to repeat and the lists become stable (Almeida & Bandeira, 2010). Therefore, we consider the snowball sampling conducted with 40 quilombola subjects as satisfactory (eight local experts and 32 members of the Quilombo), who together with the community leader corresponded to 41 participants and make up 35% of the Quilombola families of Serra do Evaristo.

Data were collected through a semi-structured questionnaire divided into two topics: 1) socioeconomic data; and 2) ethnobotanical data, in which was solicited the name of plant, type of use, part used, form of use, purchase location of plant, and knowledge source. The species mentioned were recorded in a field diary and photographed to aid in botanical identification

carried out according to the Angiosperm Phylogeny Group (APG IV, 2016). Identification was carried out by consulting the specialized bibliography and by comparison with the collections in the Prisco Bezerra Herbarium (*EAC*) of the Federal University of Ceará and the Rodolfo Teófilo Herbarium (*HERT*) of the State University of Ceará. The control botanical material (collector Santos, J.A. – numbers 1 to 150) was deposited in the Herbarium of the College of Education, Sciences and Arts of the Central Sertão of the State University of Ceará (FECLESC-UECE). The names of families, genera, species and authors were confirmed through consultation with the Tropicos Botanical Garden (Tropicos.org, 2017) and the Brazilian Flora Species 2020 List (JBRJ, 2017).

3. RESULTS AND DISCUSSION

3.1. Socioeconomic profile

Most families survive on family agriculture, with an emphasis on banana cultivation, although some young people work in civil construction in Fortaleza and other larger cities. The information was obtained from 41 quilombola subjects, with significant female participation, being 32 women and 9 men. These data confirm the predominance of women as holders of ethnobotanical knowledge (Carneiro et al., 2016) and are directly related to the way of living of the communities, in which women have greater knowledge about plants used for food and medicines, while men are more familiar with forest plants (Silva & Bündchen, 2011).

The study participants were between 18 and 76 years old, and the most frequent age group was between 40 and 60 years old (39% of the study subjects). Regarding the educational level, 95% consider themselves literate and 5% said they are illiterate. This age group and schooling are frequent in ethnobotanical studies with traditional communities. According to Silva & Bündchen (2011), there seems to be a greater accumulation of knowledge and a willingness to share information among more advanced age groups.

3.2. Ethnobotanical information

A total of 114 species were identified, distributed among 53 families with the most reported being: Fabaceae (9 species), Lamiaceae (7 species), Asteraceae (7 species), Rutaceae (5 species), Anacardiaceae (4 species), Asparagaceae (4 species), and Euphorbiaceae (4 species). The number of species was similar to those registered in another ethnobotanical study in northeastern Brazil, which found 86 species in a quilombo in Bahia (Almeida & Bandeira, 2010), and 108 species in a rural community of Pernambuco (Albuquerque & Andrade, 2002).

The plants were distributed into six categories of use, among which medicinal use stood out as the most numerous, with 48% of the mentioned species, followed by food (25%), decoration (23%), construction (5%), domestic fuel (3%) and ritualistic categories/purpose (3%) (Table 1). The greater expressiveness of medicinal plants is a frequent result in ethnobotanical studies carried out in rural communities of different ethnicities (Albuquerque, 2005) and also in Quilombola communities (Almeida & Bandeira, 2010).

The most reported species in this study were: banana – *Musa paradisiaca* L. (6.30%), corn – *Zea mays* L. (5.55%), bean – *Phaseolus vulgaris* L. (3.52%), orange – *Citrus sinensis* (L.) Osbeck (3.52%), common balm – *Melissa officinalis* L. (2.99%), aloe vera – *Aloe vera* L. (2.88%), lemon grass – *Cymbopogon citratus* Stapf. (2.77%), mint – *Mentha* sp. (2.67%) and guava – *Psidium guajava* L. (2.67%), reinforcing the importance attributed to food and medicinal uses by the Quilombola subjects in this study. The high percentage of citations for cultivated species is of concern for the conservation of local biodiversity. Banana cultivation, for example, is highly detrimental in rugged reliefs and is not recommended for the Serra de Baturité. According to Freire & Nogueira (2006), in addition to banana crops not adequately protecting the soil against the natural climate actions, there is a tendency for ablation of the superficial horizons and to impoverish the soil nutrients.

However, the species richness and variety of uses (Table 1) also shows that the Quilombola peoples of Serra do Evaristo maintain vast knowledge of exotic and native plants and use them for different purposes. This relationship of knowledge and use can be a link for conserving local biodiversity, provided that these native resources are used sustainably and the crops are used sparingly, taking into account sustainable practices. Maciel et al. (2016) found that the Quilombola community of Baturité conserves the local knowledge

Table 1. Species cited as M = medicinal, F = food, O = ornamental, C = construction, DF = domestic fuel and R = ritualistic, by the Quilombolas of Evaristo mountain, Baturité, Ceará state.

Family/Species	Popular name	Growth form	Indication (part used and preparation form)
Acanthaceae *Justicia pectoralis* Jacq.	Anador	Herb	M – fever and pain (leaf/tea)
Alismataceae *Echinodorus macrophyllus* (Kunth) Micheli	Chapéu-de-couro	Herb	M – fracture (leaf/tea)
Amaranthaceae *Alternanthera brasiliana* (L.) Kuntze	Doril	Herb	M – fever and pain (leaf/tea)
Amaranthaceae *Dysphania ambrosioides* (L.) Mosyakin & Clemants	Mastruz	Herb	M – fracture and flu (leaf/juice)
Amaranthaceae *Beta vulgaris* L.	Beterraba	Herb	M – anemia (root/syrup)
Amaryllidaceae *Allium ascalonicum* L.	Cebolinha branca	Herb	M – colic, poor digestion (stem/tea)
Amaryllidaceae *Allium schoenoprasum* L.	Cebola palha	Herb	F (stem e leaf)
Amaryllidaceae *Allium sativum* L.	Alho	Herb	M – hypertension (leaf/juice) F (leaf)
Anacardiaceae *Myracrodruon urundeuva* Allemão	Aroeira	Tree	M – inflammation (stem/maceration and tea) C (stem)
Anacardiaceae *Anacardium occidentale* L.	Cajueiro	Tree	M – inflammation (stem/maceration) F (fruit and pseudofruit)
Anacardiaceae *Mangifera indica* L.	Mangueira	Tree	M – inflammation (stem / maceration) F (fruit)
Anacardiaceae *Spondias purpurea* L.	Seriguela	Tree	F (fruit)
Annonaceae *Annona muricata* L.	Graviola	Shrub	F (fruit)
Annonaceae *Annona squamosa* L.	Ateira	Shrub	F (fruit)
Apiaceae *Coriandrum sativum* L.	Coentro	Herb	F (leaf)
Apiaceae *Daucus carota* L.	Cenoura	Herb	M – anemia (root/juice)
Apiaceae *Foeniculum vulgare* Mill.	Erva-doce	Herb	M – soothing (seed/tea)
Apocynaceae *Catharanthus roseus* (L.) G. Don	Boa-noite	Herb	O
Apocynaceae *Nerium oleander* L.	Flor de São José	Herb	O
Apocynaceae *Plumeria rubra* L.	Jasmim-de-São-José	Shrub	O
Araceae *Dieffenbachia seguine* (Jacq.) Schott	Comigo-ninguém-pode	Herb	O
Araceae *Caladium bicolor* (Aiton) Vent.	Coração-de- Jesus	Herb	O
Araceae *Zantedeschia aethiopica* L.	Copo-de-leite	Herb	O
Arecaceae *Cocos nucifera* L.	Coqueiro	Tree	M - moisturizer (fruit/juice) F (fruit)
Arecaceae *Dypsis lutescens* (H.Wendl.) Beentje & J.Dransf.	Palmeirinha	Shrub	O

Table 1. Continued...

Family/Species	Popular name	Growth form	Indication (part used and preparation form)
Arecaceae *Phoenix roebelenii* O'Brien	Palmeirinha	Shrub	O
Asparagaceae *Sansevieria cylindrica* Bojer ex Hook.	Lança-de-São-jorge	Herb	O, R
Asparagaceae *Dracaena fragrans* (L.) Ker Gawl.	-	Herb	O
Asparagaceae *Dracaena marginata* hort	-	Shrub	O
Asparagaceae *Dracaena reflexa* Lam.	-	Herb	O
Asteraceae *Achillea millefolium* L.	Dipirona	Herb	M– pain and fever (leaf/tea)
Asteraceae *Lactuca sativa* L.	Alface	Herb	M – hypertension (root/tea) F (leaf)
Asteraceae *Lychnophora ericoides* Mart.	Arnica	Shrub	M – muscle pain and fracture (seed/juice)
Asteraceae *Artemisia vulgaris* L.	Artemísia	Herb	M – pain, fever, anemia (leaf / tea and syrup)
Asteraceae *Acanthospermum hispidum* DC.	Delegado	Herb	M – cough, flu, expectorant (root/syrup)
Asteraceae *Baccharis crispa* Spreng.	Carqueja	Herb	M – lose weight (leaf/tea)
Asteraceae *Calendula officinalis* L.	Calêndula	Herb	M – inflammation (flower/tea)
Bignoniaceae *Handroanthus impetiginosus* (Mart. ex DC.) Mattos	Ipê-roxo	Tree	M – inflammation (stem/tincture) O, C (stem)
Bixaceae *Bixa orellana* L.	Urucum	Shrub	F (seed)
Brassicaceae *Nasturtium officinale* L.	Agrião	Herb	M - infection and inflammation (leaf / tea and syrup)
Brassicaceae *Brassica juncea* L.	Mostarda	Herb	M - hypertension, heart disease (seed / tea)
Bromeliaceae *Ananas comosus* (L.) Merr.	Abacaxi	Herb	F (fruit)
Caricaceae *Carica papaya* L.	Mamoeiro	Tree	M - constipation (fruit/juice) F (fruit)
Combretaceae *Terminalia catappa L.*	Castanhola	Tree	F (fruit)
Commelinaceae *Tradescantia zebrina* Heynh.	Zebrina	Herb	O
Crassulaceae *Bryophyllum pinnatum* (Lam.) Oken	Corama	Herb	M - flu, inflammation (juice/ointment)
Crassulaceae *Kalanchoe blossfeldiana* Poelln	-	Herb	O
Cucurbitaceae *Cucurbita* sp.	Abobora	Herb	F (fruit)
Cucurbitaceae *Sechium edule* (Jacq.) Sw	Chuchu	Climber	F (fruit)
Cucurbitaceae *Cucumis anguria* L.	Maxixe	Herb	F (fruit)
Cupressaceae *Thuja occidentalis* L.	Tuia	Shrub	M – anticancer (leaf/tea)

Table 1. Continued...

Family/Species	Popular name	Growth form	Indication (part used and preparation form)
Euphorbiaceae *Manihot esculenta* Crantz	Macaxeira	Shrub	F (root)
Euphorbiaceae *Codiaeum variegatum* (L.) Rumph. ex A.Juss.	Pingo-de- ouro	Shrub	O
Euphorbiaceae *Croton* sp.	Marmeleiro	Tree	C (stem), DF (stem)
Euphorbiaceae *Jatropha gossypiifolia* L.	Pião-roxo	Shrub	R (branches)
Fabaceae *Amburana cearensis* (Allemão) A.C.Sm.	Cumaru	Tree	M – flu and sinusitis (stem/tea)
Fabaceae *Anadenanthera colubrina* (Vell.) Brenan	Angico	Tree	C (stem), DF (stem)
Fabaceae *Erythrina velutina* Willd.	Mulungú	Tree	O
Fabaceae *Hymenaea eriogyne* Benth.	Jatobá	Tree	M – flu and inflammation (stem/tea)
Fabaceae *Mimosa adenophylla* Taub.	Jurema	Tree	DF (stem)
Fabaceae *Mimosa caesalpiniifolia* Benth.	Sabiá	Tree	C (stem), DF (stem)
Fabaceae *Senna occidentalis* L. Link	Manjerioba	Shrub	M - constipation (flower/oil)
Fabaceae *Vicia faba* L.	Fava	Herb	F (seed)
Fabaceae *Phaseolus vulgaris* L.	Feijão	Herb	F (seed)
Lamiaceae *Plectranthus amboinicus* Lour.	Alfavaca	Herb	M – sinusitis (leaf/tea)
Lamiaceae *Plectranthus neochilus* Schltr.	Boldo	Shrub	M – colic, poor digestion (leaf/tea)
Lamiaceae *Melissa officinalis* L.	Cidreira	Herb	M – soothing (leaf/tea)
Lamiaceae *Mentha* sp.	Hortelã	Herb	M – worms and flu (leaf/tea and juice)
Lamiaceae *Ocimum basilicum L.*	Manjericão	Herb	M – ear pain (leaf/juice)
Lamiaceae *Solenostemon scutellarioides* (L.) R.Br.	Coração-magoado	Herb	O
Lamiaceae *Plectranthus* sp.	Malvarisco	Herb	M – cough, flu (leaf/tea)
Lauraceae *Cinnamomum* sp.	Canela	Shrub	M – soothing (stem/tea)
Lauraceae *Persea americana* Mill.	Abacateiro	Tree	F (fruit)
Laxmanniaceae *Cordyline* sp.	-	Herb	O
Lythraceae *Punica granatum* L.	Romã	Tree	M – inflammation (fruit/maceration)
Malpighiaceae *Malpighia emarginata* D.C.	Acerola	Shrub	F (fruit)
Malvaceae *Abelmoschus esculentus* L. (Moench)	Quiabeiro	Herb	F (fruit)
Malvaceae *Hibiscus schizopetalus* (Dyer) Hook.f.	Hibisco crespo	Shrub	O

Table 1. Continued...

Family/Species	Popular name	Growth form	Indication (part used and preparation form)
Malvaceae *Hibiscus rosa-sinensis* L.	Hibisco	Shrub	O
Marantaceae *Calathea* sp.	-	Herb	O
Meliaceae *Azadirachta indica* A. Juss	Nim	Tree	O
Moraceae *Artocarpus heterophyllus* Lam.	Jaqueira	Tree	F (fruit)
Moraceae *Brosimum gaudichaudii* Trécul	Inharé	Shrub	C (stem), DF (stem)
Moraceae *Ficus benjamina* L.	Benjamin	Tree	O
Musaceae *Musa paradisiaca* L.	Bananeira	Herb	F (fruit)
Myrtaceae *Eucalyptus sp.*	Eucalipto	Tree	M – headache, flu and sinusitis (leaf/tea)
Myrtaceae *Psidium guajava* L.	Goiabeira	Shrub	M – diarrhea and cramps (leaf/tea) F (fruit) C (caule)
Nephrolepidaceae *Nephrolepis exaltata* (L.) Schott	Samambaia	Herb	O
Olacaceae *Ximenia americana* L.	Ameixa	Tree	M – inflammation (stem/maceration and tea)
Passifloraceae *Passiflora edulis* Sims	Maracujazeiro	Climber	M – soothing (fruit/juice) F (fruit)
Pedaliaceae *Sesamum indicum* L.	Gergelim	Herb	M – hypertension, heart disease (seed/tea and juice)
Plantaginaceae *Plantago major* L.	Tanchagem	Herb	M – inflammation (leaf/tea and syrup)
Plantaginaceae *Scoparia dulcis* L.	Vassourinha	Herb	M – inflammation and urinary tract infection (root/maceration) R (branches)
Poaceae *Cymbopogon citratus* Stapf.	Capim-santo	Herb	M – soothing (leaf/tea)
Poaceae *Zea mays* L.	Milho	Herb	F (seed)
Polygonaceae *Antigonon leptopus* Hook. & Arn.	Amor-agarradinho	Climber	O
Rosaceae *Malus pumila* Mill.	Maçã	Tree	M – lack of appetite and slow intestine (fruit juice and tincture)
Rubiaceae *Genipa americana* L.	Genipapo	Tree	M – anemia (fruit/juice and tincture)
Rubiaceae *Morinda citrifolia* L.	Noni	Shrub	M – gastritis, cancer, osteoporosis (fruit/juice and tincture)
Rubiaceae *Ixora coccinea* L.	-	Shrub	O
Rutaceae *Citrus sinensis* (L.) Osbeck	Laranjeira	Shrub	M – colic, poor digestion and cholesterol (fruit/tea and juice) A (fruit)
Rutaceae *Citrus aurantifolia* (Christim.) Swingle.	Limoeiro	Shrub	M – colic, poor digestion (fruit/tea and juice) F (fruit)
Rutaceae *Citrus reticulata* Blanco	Tangerina	Shrub	F (fruit)

Table 1. Continued...

Family/Species	Popular name	Growth form	Indication (part used and preparation form)
Rutaceae *Murraya paniculata* (L.) Jack	Jasmim laranja	Shrub	O
Rutaceae *Ruta graveolens* L.	Arruda	Herb	M – ear pain (leaf/juice) R (branches)
Solanaceae *Capsicum frutescens* L.	Pimenta	Herb	M – tumors (leaf/maceration) F (fruit), O
Solanaceae *Capsicum annuum* L.	Pimentão	Herb	F (fruit)
Solanaceae *Solanum lycopersicum* L.	Tomateiro	Herb	F (fruit)
Verbenaceae *Duranta erecta* Linn	-	Shrub	O
Violaceae *Pombalia calceolaria* (L.) Paula-Souza	Ipepaconha	Herb	M – flu, sinusitis and worms (root/syrup)
Xanthorrhoeaceae *Aloe vera* (L.) Burm.f.	Babosa	Shrub	M – gastritis, flu, injury, cancer (leaf/syrup and tincture)
Zingiberaceae *Curcuma longa* L.	Açafroa	Herb	M – fever and measles (stem/tea)
Zingiberaceae *Alpinia zerumbet* (Pers.) B.L.Burtt & R.M.Sm.	Colonia	Herb	M – hypertension, heart disease (leaf/tea)
Zingiberaceae *Zingiber officinale* Roscoe	Gengibre	Herb	M – influenza, sinusitis and respiratory inflammations (root/tea)

and flavors through the maintenance of dances and traditional foods. These data, along with the high plant richness recorded in this study, reinforce the role of Quilombola communities in the conservation of local knowledge, as highlighted by Silva & Andrade (2005).

The most cited medicinal species were: common balm – *Melissa officinalis* L. (7%), aloe vera – *Aloe vera* (L.) Burm.f. (7%), lemon grass – *Cymbopogon citratus* Stapf. (7%), mint – *Mentha* sp. (6%), aroeira – *Myracrodruon urundeuva* Allemão (6%), lobster bush – *Plectranthus neochilus* Schltr. (5%), spurflowers – *Plectranthus* sp. (4%), common rue – *Ruta graveolens* L. (4%) and mastruz – *Dysphania ambrosioides* (L.) Mosyakin & Clemants (3%). The use of exotic plants in the popular pharmacopoeia generally takes place through cultivation in the surroundings of the residences, a practice that can contribute to diminishing the pressure of using native species. At the same time, it solves the issue of the seasonal unavailability of phyto resources (Albuquerque & Andrade, 2002; Alencar et al., 2014), a striking characteristic of seasonal climate vegetation, as is the case of the Semi-deciduous Seasonal Forest under study. Exotic species are used to treat specific health problems for which native species are not available or (when) there are no associated native species, which led to the hypothesis of diversification (Albuquerque, 2006) and opposes the hypothesis of acculturation, which predicted a loss of native knowledge with the presence of exotic medicinal plants (Amorozo, 2002). We agree with the hypothesis of diversification, and we understand that the exotic species listed by the Quilombola peoples of Baturité are important for the local culture, for diversifying and for expanding the repertoire of medicinal plants.

The therapeutic indications mentioned by the participants were: flu and sinusitis (30%), soothing/calming agent (17%), inflammation and injury (16%), colic, poor digestion and constipation (12%), pain and fever (7%), earache (5%), cancer (5%), hypertension and heart disease (4%), fracture (2%), cholesterol, anemia and verminoses (2%). Similar results were recorded by Gomes & Bandeira (2012), in which the most representative categories were those related to digestive and respiratory system diseases. Giraldi & Hanazaki (2010) argue that the lack of treated drinking water may partially explain the high amount of therapeutic indications for digestive system diseases.

Among the vegetable parts most used for medicinal purposes, the most cited were leaves (32 citations), followed by fruits (9), the stem (9), roots (7), seeds (4)

and flowers (2). Results recorded by Silva & Bündchen (2011) and Gomes & Bandeira (2012) in their studies also showed that leaves are the most used plant organ in folk medicine. These authors argue that the likely explanation for leaf usage is due to this part of the plant being easy to collect and available almost all year round in certain environments.

Seven types of preparation for medicinal plants were reported, in which tea was the most common (58% of the citations), followed by juice (20%), syrup (13%), dye (7%), oil (1%) and ointment (1%). The predominant preparation was infusion, 40% (put boiling water on the utilized plant part), followed by maceration, 8% (crushing part of the vegetable and placing it in cold water), tisanes, 6% (making herbal teas by placing the utilized part in boiling water), and decoction 3% (boiling the utilized part); thus corroborating Carneiro et al. (2016) and Silva et al. (2016), who state that tea predominated among the home medicines in small communities of Ceará.

As a family farming community, the percentage of species that serve as food corresponded to 25% of the species reported, including some species that have been cited as food and for medicinal purposes, such as: mango (*Mangifera indica* L.), coconut (*Cocos nucifera* L.), lettuce (*Lactuca sativa* L.), papaya (*Carica papaya* L.), garlic (*Allium sativum* L.), guava (*Psidium guajava* L.), orange (*Citrus sinensis* (L.) Osbeck), key lime (*Citrus aurantifolia* (Christim.) Swingle.) and chili pepper (*Capsicum frutescens* L.) (Table 1). Participants listed leaves, roots, fruits, and grains, and reported that they are mostly grown by direct cultivation in local backyards. According to Pasa et al. (2005), backyards are spaces that play an important role in people's lives, as they are located close to the residences and are constituted by perennial and temporal species, through which the population has a low dependence on external products.

The decoration category received the third highest percentage of species cited (24%), distributed in herbaceous, shrub and arboreal growth forms (Table 1). The decoration category is usually one of the most cited in studies in rural and urban backyards (Silva et al., 2017), and although this study did not specifically focus on to the ethnobotany of backyards, the fact that this category corresponded to an expressive number of species evidences the concern of the residents of the Quilombola community of Serra do Evaristo with embellishing their environment.

For the construction and domestic fuel categories, only woody species were reported, corresponding to a total of seven species for construction and four species for domestic fuel (Table 1). The species reported for construction were: common rue (*Myracrodruon urundeuva* Allemão), pink trumpet tree (*Tabebuia impetiginosa* Mart.), marmeleiro (*Croton* sp.), sabiá (*Mimosa caesalpiniifolia* Benth.), angico/wilco (*Anadenanthera colubrina* Vell. Brenan), inharé (*Brosimum gaudichaudii* Trec.) and guava (*Psidium guajava* L.). These species are used for building houses, animal pens/stalls, producing artifacts for agriculture and fences for demarcating territory. For domestic fuel, the species reported were: angico/wilco (*Anadenanthera colubrina* Vell. Brenan), sabiá (*Mimosa caesalpiniifolia* Benth.), marmeleiro (*Croton* sp.), and jurema (*Mimosa adenophylla* Taub.), in which wood with a longer combustion time are preferably chosen. According to Moura (2007), the choice of the appropriate wood allows individuals to carry out several activities at once, without having to exclusively focus on cooking.

The ritual category/purpose had four species cited: bellyache bush (*Jatropha gossypiifolia* L.), castor bean (*Ricinus communis* L.), common rue (*Ruta graveolens* L.) and licorice weed (*Scoparia dulcis* L.), used for of healing, blessing and dancing rituals to invoke rain, generally using the branches of the plants (Table 1). Using plants for prayers, dances and blessings is common in traditional communities (Albuquerque et al., 2007).

Regarding knowledge acquisition, 62% of the participants reported that it was acquired orally from relatives, 25% orally from family members and other members of the community, 12% from oral and written reports from relatives and in training courses. The predominance of vertical oral transmission has been pointed out as a pattern in small communities (Carneiro et al., 2016), reaffirming that the family represents the main source of knowledge transmission. We can attribute the high percentage of knowledge transmission involving other members of the community (25% in this study) to the fact that the group recognizes themselves as a Quilombola community.

4. CONCLUSION

We conclude that the Quilombola community of Serra do Evaristo in Baturité, Ceará state, has a rich immaterial heritage related to the knowledge and

use of 114 plant species used for medicinal, food, decoration, construction, domestic fuel and ritualistic purposes. We have also found that this knowledge is preserved/passed down in the community as a way to keep its culture alive and its recognition as a Quilombola community.

Ethical approval: All Quilombola individuals participating in this research signed the clear and informed consent form (ICF) and were reserved the right to withdraw from the study at any time, and their anonymity was assured, as recommended by Resolution 510/96 of the National Health Council (Brasil, 2016).

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