

Scientific Electronic Archives

Issue ID: Sci. Elec. Arch. Vol. 12 (4)

August 2019

Article link

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Ethnobotanical survey of tree species in the botanical garden of UFRRJ

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Abstract. The main aims of ethnobotany are to rescue the popular knowledge associated with the scientific knowledge about the use of plant materials by social groups from different customs and cultures, as well as to contribute to the identification, registration and conservation of natural resources. Accordingly, the aim of the present study is to survey the ethnobotanical characteristics of eudicotyledonous tree species grown in the Botanic Garden of Federal Rural University of Rio de Janeiro (UFRRJ - Universidade Federal Rural do Rio de Janeiro). The analysis of ethnobotanical characteristics was based on the literature, as well as on records of plant use made by the local community. The survey was carried out based on our own methodology. Tree species were evaluated based on 18 categories, namely: food, handicrafts, apiculture, cellulose, energy, fodder, timber, medicine, oleaginous, ornamental, reforestation, repellent, tannin, technology, textile, dyestuff, ritualistic and venom. *Genipa americana* L., which is inserted in 15 categories, stands out among the species presenting the most useful properties. However, based on the current survey, it is possible concluding that the Botanic Garden of UFRRJ has an important collection of useful species.

Keywords: useful plants, botanical garden, UFRRJ.

Introduction

Mankind has always depended on plants to develop and survive. The study of useful plants has been growing along with the trend of sustainable use of natural resources. Studies in this field aim to help improving the knowledge about botanical environments; thus, Botanical Gardens are important spaces for biodiversity conservation, since they enable scientific studies focused on investigating several knowledge fields. The Botanical Garden of Federal Rural University of Rio de Janeiro (UFRRJ) is located at Seropédica Campus, Seropédica County, Rio de Janeiro State. It was launched in 1980 and its initial aims were to provide materials for practical classes in different disciplines and to improve the environmental knowledge of the local community (Guimarães, 1982). Based on botanical species grown in the botanical garden, it was possible gathering data about the biodiversity of plants preserved in it and about their importance for humans. This information was disclosed to society in different ways. According to the survey conducted by Cysneiros et al. (2011), the aim of the aforementioned study was to ethnobotanically frame the species cataloged in the

Botanic Garden of UFRRJ, based on their main characteristics of use.

Methods

The current study has investigated plant species that fit into at least one ethnobotanical category, based on the survey of UFRRJ Botanical Garden arboretum conducted by Cysneiros et al. (2011), and on the literature.

Since ethnobotanical classifications can be understood in a subjective way, it is essential delimiting the approach adopted in the current study. Food category is herein understood as human food, avifauna and other animals; the handicraft category encompasses any plant part used for handcraft production. The apiculture category refers to flowers with the ability to attract many pollinators and the cellulose category refers to plants used to produce paper. The energy category takes into consideration the heat potential of wood and oils used for lighting purposes. The fodder category comprises plants used as fodder for producing animals and the timber category comprises hardwood used to build homes, as well as to make boat linings, luxury furniture, canoes, boxes, wooden ceilings, small toys, among

others. The medicine category encompasses any plant part used to treat or combat diseases, the oleaginous category comprises plants used to produce oils for fuel, food and other purposes and the ornamental category is characterized by trees used in afforestation of cities, parks, gardens and open fields. The reforestation category comprises species recommended and used for reforestation purposes, the repellent category refers to substances found in plants, which present insect-repellent. The ritualistic category comprises plants used in different indigenous and candomblé rituals, among others. The tannin stuff category refers to plants used in tannery processes and in animal food production. The technology category addresses the home use and usefulness of plants. The textile category classifies all kinds of materials used to produce fabrics. The dyestuff category refers to any plant part presenting ink production potential to dye fabrics and clothing and the poison category addresses the minimum concentration of any substance capable of causing significant or lethal damage to both humans and animals.

Results and discussion

The eudicotyledonous tree species grown in the Botanical Garden of UFRRJ were distributed by Cysneiros et al. (2011) into 30 botanical families; family Fabaceae was the one presenting the largest number of species (43). The species surveyed in the Botanic Garden of UFRRJ were distributed into 18 classification categories: apiculture (32), cellulose (21), dyestuff (17), energy (46), fodder (32), food (60), handicrafts (22), medicine (61), oleaginous (12), ornamental (106), reforestation (63), repellent (6), ritualistic (4), tannin (26), technology (38), textile (3), timber (104) and venom (3). Data about these categories are show in Figure 1. Species *Genipa americana* L. (15 categories), *Joannesia princeps* Vell. (12 categories), as well as *Cariniana estrellensis* (Raddi) Kuntze and *Schinus terebinthifolius* (11 categories), stood out among the ones presenting the largest number of useful properties (Table 1).

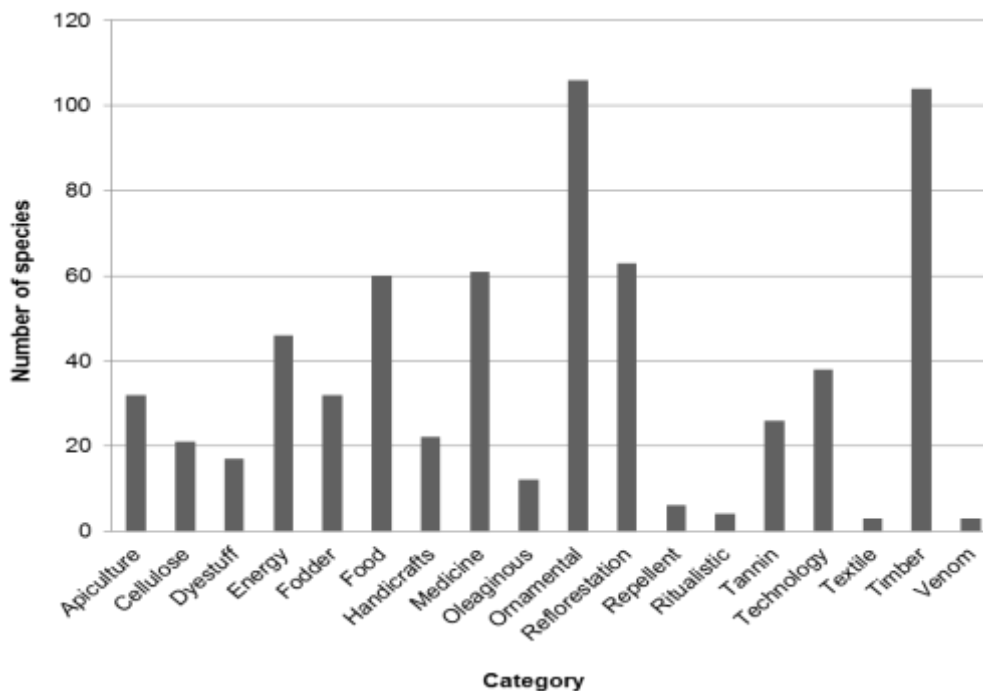


Figure 1. Total number of botanical species found in the Botanic Garden of Federal Rural University of Rio de Janeiro and distributed into different ethnobotanical categories (n = 18).

Table 1. Botanical families, and their respective species, found in the Botanic Garden of Federal Rural University of Rio de Janeiro, and their distribution into ethnobotanical categories. Apiculture: Api; Cellulose: Cel; Energy: Ene; Fodder: Fod; Food: Foo; Handicrafts: Han; Medicine: Med; Oleaginous: Ole; Ornamental: Orn; Reforestation: Ref; Repellent: Rep; Tannin: Tan; Technology: Tec; Textile: Tex; Dyestuff: Dye; Ritualistic: Rit; Timber: Tim; Venom: Ven. Additional references (REFERENCE) : 1= Carvalho, 2003; 2= Carvalho, 2006; 3= Carvalho, 2008; 4= Silva Junior, 2010; 5= Cruz, 1995; 6= Silva, 2006; 7= Braga, 1960; 8= Rizzini, 1978; 9= Bandeira, 2008; 10= Ferreira, 1998; 11= Shanley, 2005; 12= Lorenzi, 2008; 13= Lorenzi, 2009; 14= Lorenzi, 2009; 15= Lorenzi, 2003; 16= Silva Junior, 2009; 17= Pio Côrrea, 1969; 18= Braz et al. 2012; 19= Lorenzi & Matos, 2008.

FAMILY AND SPECIES	COMMON NAME	CATEGORIES	REFERENCE
Anacardiaceae			
<i>Anacardium occidentale</i> L.	cashew tree	Dye, Fod, Foo, Mad, Med, Rit, Tec	5,7,10,17
<i>Astronium graveolens</i> Jacq.	glassywood	Med, Orn, Tim	7,12
<i>Mangifera indica</i> L.	mango	Ene, Foo, Med	4,5,7
<i>Myracrodruon urundeuva</i> Allemao	<i>aroeira-do-sertão</i>	Api, Ene, Fod, Foo, Med, Orn, Ref, Tan, Tec, Tim	1,4,7,8,12
<i>Schinopsis brasiliensis</i> Engl.	<i>braúna-parda</i>	Api, Ene, Fod, Med, Orn, Tan, Tim	3,7,12
<i>Schinus terebinthifolius</i> Raddi	brazilian peppertree	Api, Dye, Ene, Fod, Foo, Med, Orn, Rep, Tan, Tec, Tim	1,7,12,17
<i>Spondias venulosa</i> Mart. ex Engl.	<i>cajá-grande</i>	Foo, Ref, Tim	12
Annonaceae			
<i>Annona montana</i> Macfad.	mountain soursop	Foo, Med	18,19
Apocynaceae			
<i>Aspidosperma parvifolium</i> A.DC.	<i>peroba</i>	Orn, Ref, Tim	12
<i>Tabernaemontana hystrix</i> (Steud) A.DC.	<i>leiteira</i>	Foo, Tec, Tim	12
<i>Thevetia peruviana</i> (Pers.) K.Schum.	yellow oleander	Orn, Ven	7,18
Bignoniaceae			
<i>Cybistax antisyphilitica</i> (Mart.) Mart.	green trumpet tree	Cel, Orn, Ref, Tim	12
<i>Kigelia pinnata</i> (Jacq.) DC.	sausage tree	Orn	15
<i>Jacaranda brasiliana</i> (Lam.) Pers.	<i>árvore-talismã</i>	Han, Med, Orn, Tim	7,9,13
<i>Sparattosperma leucanthum</i> (Vell.) K. Schum.	<i>cinco-chagas</i>	Orn, Ref, Tim	12
<i>Spathodea nilotica</i> Seem	<i>espatódea</i>	Med, Orn	4,15
<i>Handroanthus chrysotrichus</i> (Mart. ex A. DC.) Mattos	golden trumpet tree	Med, Orn, Tec, Tim	2,4,12
<i>Handroanthus heptaphyllus</i> (Mart.) Mattos	pink trumpet tree	Med, Orn, Ref, Tec, Tim	4,8,12
<i>Handroanthus impetiginosus</i> (Mart. ex DC.) Mattos	purple trumpet tree	Ene, Med, Orn, Tec, Tim	1,4,8,11,12

<i>Handrianthus ochraceus</i> (Cham.) Mattos	trumpet tree	Dye, Med, Orn, Tec, Tim	4.12
<i>Tabebuia avellenadae</i> Lorentz ex Kunth	purple trumpet tree	Orn, Tec, Tim	7.12
<i>Tabebuia roseo-alba</i> (Ridl.) Sandwith	white trumpet tree	Orn, Tim	4.12
<i>Tecoma stans</i> (L.) Juss. ex Kunth.	yellow trumpet bush	Orn	15
Boraginaceae			
<i>Cordia superba</i> Cham.	<i>babosa-branca</i>	Tim	12.17
Casuarinaceae			
<i>Casuarina equisetifolia</i> J.R. & G. Forst	beach casuarina	Med, Orn, Tim	5,7,15
Chrysobalanaceae			
<i>Licania rigida</i> Bentham	oitica	Dye, Orn, Tec, Tim	5,7,14
<i>Licania tomentosa</i> (Benth.) Fritsch	oiti	Foo, Orn, Tim	4,7,12
Clusiaceae			
<i>Calophyllum inophyllum</i> L.	tamanu	Ene, Med, Orn, Tim	15
Erythroxylaceae			
<i>Erythroxylum pulchrum</i> A.St.-Hil.	<i>arco-de-pipa</i>	Api, Foo, Orn, Tec, Tim	14
Euphorbiaceae			
<i>Aleurites moluccana</i> (L.) Willd.	candlenut	Dye, Ene, Foo, Han, Med, Ole, Orn	4,7,15
<i>Hevea brasiliensis</i> (Willd. ex A. Juss.) Mull. Arg.	rubber tree	Api, Ene, For, Foo, Han, Ole, Orn, Tex, Tim	4,6,7,11,12
<i>Hura crepitans</i> L.	sandbox tree	Cel, Foo, Han, Med, Ref, Rep, Tim, Ven	8,12,17
<i>Joannesia princeps</i> Vell.	arara nut-tree	Api, Cel, Dye, Ene, Foo, Han, Med, Ole, Ref, Rep, Tim, Ven	1,4,7,12,17
Lecythidaceae			
<i>Cariniana estrellensis</i> (Raddi) Kuntze	smoker	Api, Cel, Fod, Foo, Han, Med, Orn, Ref, Tan, Tec, Tim	1,4,8,12
<i>Couroupita guianensis</i> Aubl.	cannonball tree	Foo, Orn, Tim	4,12,18
<i>Gustavia augusta</i> L.	<i>jeniparana</i>	Foo, Orn, Tim	12
<i>Lecythis pisonis</i> Cambess.	cream nut	Ene, Fod, Foo, Han, Med, Orn, Tec, Tim	2,4,7,8,12
Fabaceae			
<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	earleaf acacia	Ene, Orn, Ref, Tim	15
<i>Acacia mangium</i> Willd.	black wattle	Ene, Orn, Ref	15
<i>Albizia lebbbeck</i> (L.) Benth.	lebbeck tree	Api, Med, Orn, Tan, Tim	4.15

<i>Amburana cearensis</i> (Allemão) A.C. Sm.	amburana	Ene, Foo, Han, Med, Ole, Orn, Rep, Ref, Tim	1.12
<i>Anadenanthera colubrina</i> (Vell.) Brenan	white angico	Api, Ene, Med, Orn, Ref, Tan, Tim	1,4,8,12
<i>Anadenanthera macrocarpa</i> (Benth.) Brenan	red angico	Api, Ene, Fod, Med, Orn, Ref, Tan, Tec, Tim	1,7,8,12
<i>Bauhinia variegata</i> L.	mountain ebony	Dye, Med, Orn Tim	15.17
<i>Caesalpinia echinata</i> Lam.	brazilwood	Dye, Ene, Han, Med, Orn, Ref, Tan, Tim	1,4,5,7,8,10,12
<i>Caesalpinia ferrea</i> Mart. ex Tul.	brazilian ironwood	Api, Ene, Fod, Med, Orn, Tim	1.7
<i>Caesalpinia pluviosa</i> D.c.	<i>sibipiruna</i>	Api, Ene, Fod, Orn, Tim	2.12
<i>Cassia fistula</i> L.	golden shower	Fod, Med, Orn, Rit, Tim	4,5,7,15,17
<i>Cassia grandis</i> L. f.	pink shower tree	Api, Fod, Foo, Han, Med, Orn, Ref, Tec, Tim	1,7,12,17
<i>Cassia leptophylla</i> Vog.	gold medallion tree	Api, Ene, Orn, Ref, Tim	2.12
<i>Cassia reginera</i> Wall. ex Benth	<i>cassia-rosa</i>	Orn	15
<i>Centrolobium tomentosum</i> Guillemin ex Benth.	<i>araribá-rosa</i>	Dye, Ene, Foo, Med, Ref, Tan, Tec, Tim	1,12,17
<i>Clitoria fairchildiana</i> R.A. Howard	<i>sombreiro</i>	Orn, Ref, Tim	4.12
<i>Choroleucom tortum</i> (Mart.) Pittier	<i>tararé</i>	Orn, Ref, Tec, Tim	12
<i>Copaifera langsdorffii</i> Desf.	diesel tree	Api, Dye, Ene, Med, Ole, Orn, Ref, Tec, Tim	1,7,12,16
<i>Dalbergia nigra</i> (Vell.) Allemão ex Benth	bahia rosewood	Ene, Han, Ole, Orn, Ref, Tec, Tim	1,4,5,8,12
<i>Delonix regia</i> (Bojer ex Hook.) Raf	flamboyant	Med, Orn, Tin, Tim	4,7,15
<i>Enterolobium contortisiliquum</i> (Vell.) Morong	pacar earpod tree	Api, Cel, Fod, Foo, Han, Orn, Ref, Tan, Tec, Tim	1,8,9,12
<i>Erythrina speciosa</i> Andrews	<i>mulungu</i>	Orn, Ref, Tim	12
<i>Gliricidia sepium</i> (Jacq.) Steud.	quickstick	Orn	15
<i>Hymenaea courbaril</i> L.	stinking toe tree	Api, Foo, Han, Med, Orn, Ref, Rep, Tan, Tec, Tim	1,5,6,7,8,11
<i>Inga cylindrica</i> (Vell.) Mart.	<i>ingá-feijão</i>	Foo, Ene, Orn, Tim	4.18
<i>Inga Laurina</i> (Sw.) Willd	<i>ingá</i>	Foo, Ene, Orn, Tim	4.13
<i>Inga sessilis</i> (Vell.) Mart.	<i>ingá-macaco</i>	Api, Cel, Ene, Fod, Foo, Med, Orn, Ref, Tan, Tim	1.13
<i>Leucaena leucocephala</i> (Lam.) R. de Wit	white leadtree	Ene, Fod, Foo, Han, Orn	4.15
<i>Machaerium hirtum</i> (Vell.) Stelfeld	<i>jacarandá-bico-de-pato</i>	Ene, Med, Orn, Ref, Tim	12.16
<i>Machaerium paraguariense</i> Hassl.	<i>catereté</i>	Orn, Ref, Tec	12
<i>Mimosa caesalpinifolia</i> Benth.	<i>sabiá</i>	Api, Ene, Fod, Med, Orn, Ref, Tec, Tim	2,4,7,8,12
<i>Peltophorum dubium</i> (Spreng.) Taub.	<i>ciáfístula</i>	Api, Cel, Ene, Fod, Med, Orn, Ref, Tan, Tim	1,4,7,12

<i>Piptadenia paniculata</i> Benth.	<i>marmeleiro</i>	Api, Ene, Ref, Tec, Tim	1,14,17
<i>Pithecellobium dulce</i> (Roxb.) Benth.	monkeypod	Orn, Tim	15
<i>Platypodium elegans</i> Vogel	graceful platypodium	Orn, Ref, Tec, Tim	12.16
<i>Pterocarpus violaceus</i> Vogel.	<i>aldrago</i>	Orn, Ref, Tim	12
<i>Pterogyne nitens</i> Tul.	ibiraro	Dye, Ene, Orn, Ref, Tec, Tim	1,4,12
<i>Samanea tubulosa</i> (Benth.) Barneby & J.W. Grimes	<i>sete-cascas</i>	Api, Cel, Ene, Fod, Foo, Orn, Tan, Tim	2.13
<i>Schizolobium parahyba</i> (Vell.) S.F.Blake	brazilian firetree	Api, Cel, Fod, Han, Med, Orn, Ref, Tan, Tec, Tim	1,4,8,9,12,17
<i>Senna siamea</i> (Lam.) H.S. Irwin & R.C. Barneby	siamese cassia	Orn	15
<i>Senna spectabilis</i> (W. Schrad.) H.S. Irwin & Barneby	spectacular cassia	Ene, Orn, Ref, Tim	12
<i>Swartzia langsdorffii</i> Raddi.	<i>pacová-de-macaco</i>	Foo, Orn, Ref, Tim	12
<i>Swartzia oblata</i> Cowan	<i>sangue-de-burro</i>	Ene, Foo, Orn, Tec, Tim	13
Lythraceae			
<i>Lafoensia glyptocarpa</i> Koehne	<i>mirindiba-rosa</i>	Orn, Ref, Tim	4
<i>Lagerstroemia speciosa</i> Pers.	queen's crape myrtle	Orn	15
Malpighiaceae			
<i>Byrsonima sericea</i> DC.	<i>murici</i>	Api, Dye, Ene, Foo, Med, Orn, Ref, Tan, Tim	3.13
<i>Malpighia glabra</i> L.	<i>acerola</i>	Foo	18
Malvaceae			
<i>Bombacopsis glabra</i> (Pasq.) A. Robyns	<i>castanha-do-maranhão</i>	Foo, Orn, Tim	12
<i>Ceiba speciosa</i> (A. St.-Hil.) Ravenna	silk floss tree	Foo, Med, Ole, Orn, Ref, Tex, Tim	4,5,12
<i>Guazuma ulmifolia</i> Lam.	west Indian elm	Api, Cel, Ene, Fod, Foo, Han, Orn, Ref, Tan, Tim	2,4,7,12
<i>Hibiscus tiliaceus</i> L.	coastal cottonwood	Api, Cel, Dye, Foo, Han, Med, Orn, Tim	4,7,15,17
<i>Luehea divaricata</i> Mart.	<i>açoita-cavalo</i>	Cel, Fod, Han, Med, Ole, Orn, Ref, Tan, Tim	1,8,12,17
<i>Pachira aquatica</i> Aubl.	malabar chestnut brazilian shaving-brush tree	Cel, Foo, Orn, Tim	4,7,12
<i>Pseudobombax grandiflorum</i> (Cav.) A. Robyns	tree	Cel, Ref, Tim	2
<i>Pterygota brasiliensis</i> Allemao	<i>pau-rei</i>	Cel, Orn, Ref, Tim	7.12
<i>Sterculia chicha</i> A. St.-Hil ex Turpin	<i>chichá</i>	Cel, Foo, Ole, Orn, Ref, Tim	7.12
<i>Theobroma cacao</i> L.	cocoa tree	Cel, Ene, Fod, Foo, Med, Ole	5,7,12,17
Melastomataceae			

<i>Tibouchina granulosa</i> (Desr.) Cogn.	<i>quaresmeira</i>	Orn, Ref, Tim	4.12
Meliaceae			
<i>Cedrela odorata</i> L.	spanish cedar	Ref, Tim	7,8,13
<i>Guarea guidonia</i> (L.) Sleumer	<i>carrapeta</i>	Foo, Med, Orn, Ref, Tan, Tim	12.16
<i>Khaya grandifoliola</i> C.D.C.	african mahogany	Tim	18
<i>Melia azedarach</i> L.	chinaberry tree	Api, Ene, Fod, Foo, Med, Orn, Rep, Tim	4,5,7,15
<i>Swietenia macrophylla</i> R.A.King	mahogany	Dye, Han, Orn, Ref, Tan, Tim	2,4,6,8,11,12
Moraceae			
<i>Artocarpus heterophyllus</i> Lam.	jack tree	Dye, Fod, Foo, Med, Tan, Tim	4
<i>Ficus benjamina</i> L.	benjamin fig	Fod, Med, Orn, Tim	4,5,7,15
<i>Morus alba</i> L.	white mulberry	Fod, Foo, Med, Orn, Tan, Tex, Tim	7,15,17
Myrtaceae			
<i>Callistemon viminalis</i> (Sol. ex Gaertn) G. Don ex.Loud	bottlebrush	Orn	4.15
<i>Campomanesia xanthocarpa</i> O. Berg	<i>gabiropa</i>	Api, Ene, Fod, Foo, Han, Med, Orn, Tec, Ref, Tim	2.12
<i>Eugenia brasiliensis</i> Lam.	grumichama	Orn, Ref, Tim	7.12
<i>Eugenia uniflora</i> L.	Brazilian cherry	Api, Ene, Fod, Foo, Med, Ole, Orn, Ref, Tec	2,4,7,12
<i>Psidium guajava</i> L.	common guava	Ene, Foo, Med, Orn, Ref, Tec, Tim	4,5,7,12
<i>Psidium cattleianum</i> Sabine.	cattley guava	Ene, Foo, Med, Ref, Tan, Tec, Tim	12.17
<i>Syzygium cumini</i> (L.) Skeels	java plum	Foo, Med, Orn, Tan, Tim	4.15
<i>Syzygium malaccense</i> (L.) Merr. & L. M. Perry	malay apple	Foo, Med, Orn, Rit	4.15
Oxalidaceae			
<i>Averrhoa carambola</i> L.	star fruit	Foo, Med	5.7
Phytolaccaceae			
<i>Gallesia integrifolia</i> (Spreng.) Harms.	<i>pau-d'algo</i>	Cel, Ene, Fod, Med, Orn, Ref, Tec, Tim	1,5,12
Polygonaceae			
<i>Triplaris americana</i> L.	ant tree	Orn, Ref, Tim	4.12
Rhamnaceae			
<i>Columbrina glandulosa</i> Perkins	<i>sobrasil</i>	Api, Ene, Foo, Orn, Ref, Tec, Tim	1,4,8,12
Rosaceae			

<i>Eriobotrya japonica</i> (Thunb.) Lindl.	loquat	Foo, Orn, Med	4
Rubiaceae			
<i>Genipa americana</i> L.	genip tree	Api, Cel, Dye, Fod, Foo, Han, Med, Ole, Orn, Ref, Rep, Rit, Tan, Tec, Tim	1,4,5,7,8,12
Rutaceae			
<i>Metrodorea nigra</i> A.St.-Hill		Foo, Orn, Ref, Tim	12
Sapindaceae			
<i>Cupania oblongifolia</i> Mart.	camboatã	Api, Ene, Foo, Med, Tec, Tim	13
<i>Sapindus saponaria</i> L.	wingleaf soapberry	Foo, Han, Med, Orn, Ref, Tim	4,7,9,12
<i>Talisia esculenta</i> Radlk.	pitomba tree	Foo, Orn, Ref, Tan, Tim	7.12
Sapotaceae			
<i>Manilkara subsericea</i> (Mart.) Dubard	maçaranduba	Foo, Ref, Tim	14
<i>Syderoxylum obtusifolium</i> (Roem. & Schult.) T.D.Penn	quixaba	Han, Tim	18
Urticaceae			
<i>Cecropia lyratiloba</i> Miq.	cecropia	Cel, Foo, Med, Orn, Ref, Tim	12.16
Verbenaceae			
<i>Gmelina arborea</i> Roxb. ex Sm.	gmelina	Cel, Foo, Ene, For, Orn, Tim	4.15

Conclusion

The diversified use of tree species found in the Botanic Garden of UFRRJ is well known. These species represent an important collection of plants used by humans. Besides, the study site contributes to the conservation of these species and provides material for future studies.

References

- BRAGA, R. Plantas do Nordeste, especialmente do Ceará. 2ª ed. Fortaleza: Imprensa Oficial do Ceará, v. 8, 540p. 1960.
- BRAZ, DM., SANTOS, PRO., CYSNEIROS, VC., MENDONÇA JUNIOR, JO. Árvores do Jardim Botânico da UFRRJ. Chave para identificação das famílias, dicas para reconhecimento das espécies em campo e caracterização e usos da madeira. Seropédica, Edur: UFRRJ, 301p. 2012.
- CARVALHO, Paulo Ernani Ramalho. Espécies arbóreas brasileiras. Brasília: Embrapa Informação Tecnológica, v.1, 1039p. 2003. (Espécies arbóreas brasileiras, 1).
- CARVALHO, Paulo Ernani Ramalho. Espécies arbóreas brasileiras. Brasília: Embrapa Informação Tecnológica, v. 2, 627p. 2006. (Espécies arbóreas brasileiras, 2).
- CARVALHO, Paulo Ernani Ramalho. Espécies arbóreas brasileiras. Brasília: Embrapa Informação Tecnológica, v. 3, 593p. 2008. (Espécies arbóreas brasileiras, 3).
- CRUZ, GL. Dicionário de Plantas Úteis do Brasil. 5ª ed. Rio de Janeiro : Bertrand Brasil, 600p. 1995.
- CYSNEIROS, VC., MEREIRA-MOURA, MVL., PAULA, EP., BRAZ, DM. Arboreal Eudicotyledons, Universidade Federal Rural do Rio de Janeiro Botanical Garden, state of Rio de Janeiro, Brazil. Check List Journal of species lists and distribution. 2011. Disponível em: <<http://www.checklist.org.br/getpdf?SL072-10>>. Acesso em: 10 setembro 2017.
- FERREIRA, EL. Corantes Naturais da Flora Brasileira – Guia Prático de Tingimento com Plantas. Curitiba: Optagraf Editora e Gráfica Ltda., 98p. 1998.
- GUIMARÃES, JL. O Jardim Botânico da Universidade Federal Rural do Rio de Janeiro, suas origens, sua implantação e seu desenvolvimento. In: XXXIII Congresso Nacional de Botânica, Maceió, Anais do XXXIII Congresso Nacional de Botânica. Brasília: Editora EMBRAPA – DDT. p. 37-48, 1982.
- LORENZI, H. Árvores exóticas no Brasil: madeiras, ornamentais e aromáticas. Nova Odessa: Instituto Plantarum, 384p. 2003.
- LORENZI, H. Árvores brasileiras: manual de identificação e cultivo de plantas arbóreas nativas do Brasil. 5ª ed. Nova Odessa: Instituto Plantarum, v. 1, 384p. 2008.
- LORENZI, H. Árvores brasileiras: manual de identificação e cultivo de plantas arbóreas nativas do Brasil. 3ª ed. Nova Odessa: Instituto Plantarum, v. 2, 384p. 2009.
- LORENZI, H. Árvores brasileiras: manual de identificação e cultivo de plantas arbóreas nativas do Brasil. Nova Odessa: Instituto Plantarum, v. 3, 384p. 2009.
- LORENZI, H., MATOS, FJA. Plantas Medicinais no Brasil: nativas e exóticas. 2ª ed. Nova Odessa, Instituto Plantarum, 576p. 2008.
- PIO CÔRREA, M. Dicionário das plantas úteis do Brasil e das exóticas cultivadas. Rio de Janeiro: Ministério da Agricultura, v. 1-6. 1969.
- RIZZINI, CT. Árvores e madeiras úteis do Brasil: Manual de Dendrologia Brasileira. 2ª ed. São Paulo: Edgard Blücher, 312p. 1978.
- BANDEIRA, J. Sementes ornamentais do Brasil. Rio de Janeiro: Reler, 144p. 2008.
- SILVA, S. Árvores da Amazônia: Brasil. São Paulo: Empresa das Artes, 243p. 2006.
- SILVA JUNIOR, MC. +100 árvores do cerrado – Matas de Galerias: guia de campo. Brasília, DF: Ed. Rede de Sementes do Cerrado, 288p. 2009.
- SILVA JUNIOR, MC. 100 árvores urbanas – Brasília: guia de campo. Brasília, DF: Ed. Rede de Sementes do Cerrado, 280p. 2010.
- SHANLEY, P. Frutíferas e Plantas Úteis na Vida Amazônica. 2ª Ed. Belém: CIFOR, Imazon, 300p. 2005.