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SciELO

Ethnobotany in urban home gardens in Mossoró-RN

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Abstract: Plant species grown in urban home gardens improve environmental quality, bring aesthetic benefits, can be used for the production of food and medicinal plants, among other purposes. This work aims to carry out an ethnobotanical survey in urban home gardens in the Vingt Rosado neighborhood in Mossoró-RN. The methodological procedures consist of an application of a semi-structured questionnaire and identification of plant species present in the gardens of residential units. Plants were found in all the sampled residences, and 18 species with different purposes were cataloged. The studied urban home gardens have great potential for botanical cultivation, and the expansion of this possibility could bring many benefits regarding food and environmental security and even expand the possibilities for generation of family income.

***Keywords*:** Ethno-knowledge; Productive home gardens; Food safety; semiarid; Botanical cultivation.

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Introduction

Urban home gardens have great sociocultural relevance, since the plant species cultivated in this environment bring great benefits, such as positive interference in environmental quality, aesthetic improvement, production of food and medicinal plants.

Research dealing with ethnobotany has been standing out, especially in the last 20 years, in master's dissertations, doctoral theses and articles in scientific journals (CALÁBRIA et al., 2008; SILVA et al., 2011; TROTTA et al. , 2012; BARBOSA, 2013; LOBATO et al., 2017), however, they still require greater dedication from researchers and government intervention, specifically in the semi-arid region, in relation to impacts on the environment, people's health and even on income generation (ALBUQUERQUE and ANDRADE, 2002; ALVES et al., 2007; BEZERRA, 2014; COSTA and MARINHO, 2016; FREITAS, 2016).

For Barbosa (2013), ethnobotanical knowledge is not acquired through formal education in schools, but through learning processes arising from informal and non-formal education. That is, this knowledge is often passed on by older family members, neighbors and friends.

The concept of ethnobotany states that plants are living beings and are not decontextualized from anthropic cultural aspects. From the simple perception of people that a plant species exists and has its role in ecosystems, to the uses made of these plants as food, natural medicine, among other purposes. Thus, ethnobotany is a science that studies humanity's relationships with plants and the various ways in which plants are used as resources (ALCORN, 1995). In turn, Siviero et al. (2014) conceptualize it as the study of relationships between humans and plants, such as cultivation procedures, their exploitation and use.

In urban areas, ethnobotanical studies of home gardens usually focus on operation, ecological composition or economic contribution, such as the production of fruit trees for consumption and commercialization. They are important for the conservation of species and cultural heritage in threatened spaces (SIVIERO et al., 2014). Along the same lines, Medeiros et al. (2015) point out that, in urban areas, people are becoming aware of issues related to sustainability and expanding every day the cultivation and development of plants.

Urban home garden crops can be considered an important strategy for environmental education and the search for healthy food and natural medication, produced at home and without the use of pesticides, especially in gardens (TROTTA et al., 2012). The aesthetic aspect is also considered, associating plant species to the architectural projects of facades, gardens and shading of sidewalks, buildings and the gardens themselves.

As for Mossoró-RN, there are few studies that associate cultivation in urban home gardens with ethnobotanical aspects, in addition, local public policies are incipient in the aspect of environmental education aimed at domestic plant cultivation. Thus, this work aims to carry out an ethnobotanical survey in the urban home gardens of the Vingt Rosado neighborhood, in Mossoró/RN.

Ethnobotany and urban home gardens

Ethnobotany is a science that studies the knowledge of populations on the cultivation plants, their management, uses and respective purposes (VÁSQUEZ, 2014). Thus, ethnobotanical research encompasses several areas of knowledge, not being limited to flora, but involves the interaction with the environment, including positive and negative socio-environmental impacts (ALVES, 2007).

Paulino et al. (2012) state that it is essential to rescue and value people's knowledge on the cultivation of plants, whether for medicinal or food purposes. In this perception, Freitas (2016) points out that the rescue of ancestral knowledge, with regard to the medicinal effect of plants, is one of the most important aspects of ethnobotanical studies, since such knowledge has been currently decreasing or left in the background by the apparent easiness provided by the pharmaceutical industry. In addition, the environmental degradation caused by the conventional model of plant exploitation, which ignores the ethnobotanical knowledge on native vegetation, has been configured in danger for many biomes and even in risk of extinction (ALBUQUERQUE and ANDRADE, 2002).

Each biome has its own biological diversity of flora that ensures specific potentials (CALÁBRIA, 2008). Regarding ethnobotany in the Caatinga biome in the Brazilian semiarid region, Costa and Marinho (2016) highlight the high resistance of this complex ecosystem's native species, especially in relation to long periods of drought. In this reality, ethnobotanical knowledge has great relevance, notably due to the existence of several species of medicinal uses and for food purposes for humans and animals.

In Brazil, urbanization in medium and large centers is a reality. Thus, urban home gardens, depending on their size, water and soil availability, emerge as a viable option for the transmission of ethnobotanical knowledge and the diverse uses of plant species, both native and exotic. This possibility may be a way of rescuing the knowledge of ancestors who lived in rural areas at a time when medicinal resources were much less accessible and industrialized foods were not part of the family diet. In addition, people were not so strongly subjected to the food and pharmaceutical industries' media appeal.

Freitas (2016) mentions that urban home gardens form systems that have, as a key point, the optimization of land use and a significant socioeconomic impact, with regard to income generation, food security and involvement of popular culture. From the environmental point of view, the cultivation process contributes to the rescue of the experience of the ancestors who lived in that biome. The author considers income generation to be an indirect benefit, that is, when the food produced at home is consumed, reducing the financial expenditure on meals. On the other hand, the benefit can be direct, depending on the dimensions of the yard or what is produced, it is possible to sell the surplus with added value, as it is an environmentally beneficial product when produced without pesticides.

Santana et al. (2017) reinforce that urban and peri-urban agriculture contributes decisively to local development, both in the economic, social and environmental aspects of the food issue.

From an environmental point of view, in urban home gardens, it is not necessary to use pesticides, which increases reliability in the production of healthy foods, positively

impacting food security with the diversity of nutrients and reduction of toxic inputs (CONSEA, 2004). Thus, the use of urban gardens, or other spaces where it is possible to grow plants at home, brings medicinal, aesthetic and food security benefits, in addition to the possibility of extra income. It also rescues and reinforces cultural aspects, by passing on ethnobotanical knowledge to new generations and as an environmental education action.

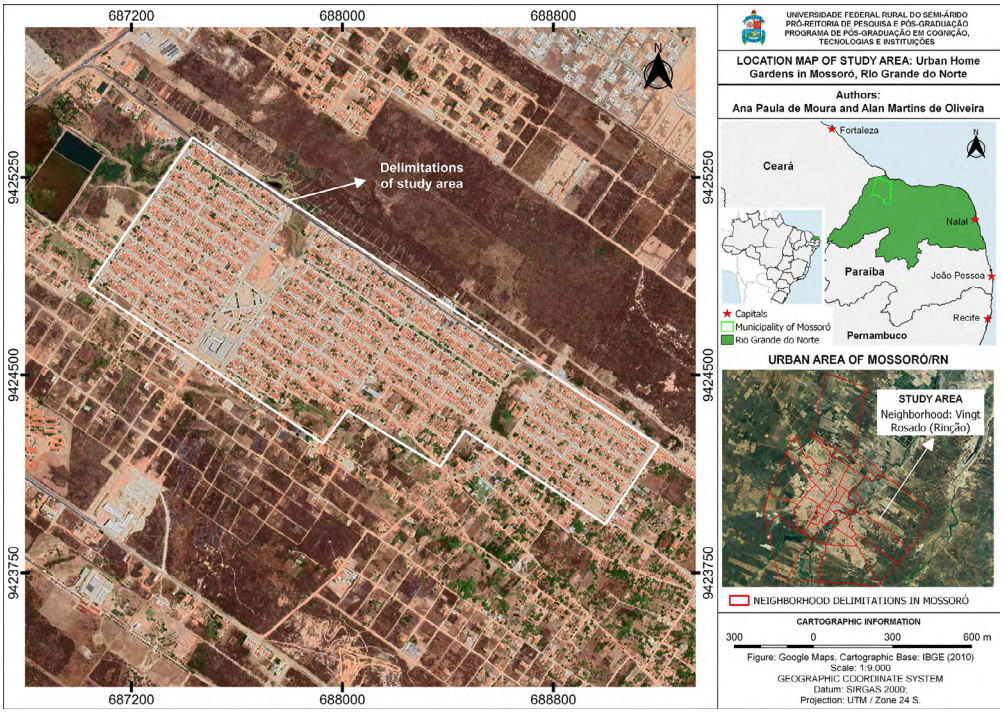
Socioeconomic contextualization of study area

According to IBGE (The Brazilian Institute of Geography and Statistics) data, the city of Mossoró, located in the Western Microregion of the State of Rio Grande do Norte, with an estimated population of 297,378 inhabitants in 2019, is the largest city in the State in territorial extension, with an area of 2,099,333 km^2, surpassing the capital (BRAZIL, 2019). Geographically, the city is located between two important capitals in the Northeast, Natal-RN and Fortaleza-CE, within a distance of 278 and 245 km, respectively (MOSSORÓ MUNICIPAL PREFEITURA, 2020).

According to the most recent official data, the Gross Domestic Product - GDP per capita in 2016 was R$ 19,714.79 (BRASIL, 2019) and the Human Development Index - HDI in 2010 was 0.720, the third highest in the State, considered high by the United Nations Development Program – UNDP (2010). In Mossoró's economy, the following stand out: irrigated fruit production, service sector, commerce, civil construction, production and processing of sea salt and onshore oil production.

The Vingt Rosado neighborhood, located in the East Zone of Mossoró, is one of the largest urban contingents in the city, with a population of 9,631 inhabitants (BRASIL, 2019). The locality is a residential area that has as a peculiar characteristic having been created just over 30 years ago. In 1989, 2,416 popular housing units were delivered, with the purpose of assisting a portion of the population that did not have their own home.

Figure 1 – Location map of the Vingt Rosado neighborhood, Mossoró-RN, Brazil



Source: prepared by the authors, 2022.

The local infrastructure has a municipal day care center, a municipal elementary school, a state high school, an Emergency Care Unit - UPA and a community council without physical headquarters; in addition to the collection of urban waste by the city hall, three times a week, and regular public transport.

A relevant aspect is that all residences have basic sanitation, running water and, originally, all have backyards, favoring the planting of species, both for the consumption of fruits, vegetables and herbs, as well as for gardening and ornamentation.

Case study: Ethnobotany in Vingt Rosado Neighborhood, Mossoró-RN

The study population corresponds to the families of residents in the Vingt Rosado neighborhood, Mossoró-RN. Two aspects are adopted as criteria for choosing this social grouping, one of a socio-environmental nature and the other related to infrastructure conditions. On the socio-environmental issue, it is worth noting that it is a relatively new urban community, made up of people from several other neighborhoods and neighboring cities, with a very variable family income and, therefore, it tends to have greater cultural diversity. In the structural aspect, the availability of backyards and access to good quality piped water contribute to the cultivation of plants, unlike in neighborhoods with little

access to water, since the lack of water is frequent in some areas of the city.

Considering the number of 2,416 residences in the Vingt Rosado neighborhood, the sampling is calculated according to the guidelines described by Richardson et al. (2014), with 90% confidence and 5% maximum error of estimation. The sampling defined in these parameters is 96 residences, which, by rounding, are considered 100 units.

The strategy adopted for the application of the questionnaire is random choice. The spacing between sampled houses was visually performed, as there are units transformed into commercial establishments, services, churches, among others, or even uninhabited, thus covering most of the streets. When the house had no inhabitant or people chose not to receive the researcher, she would redirect to the next house.

The presentation and approval of the project by the local community took place with the representative of the neighborhood community council. A consent document was used in order to formalize and obtain a favorable from the *Comitê de Ética em Pesquisa* [Research Ethics Committee] - CEP of the *Universidade do Estado do Rio Grande do Norte* - UERN of carrying out the research.

The research consists of 3 stages:

a) Quantitative analysis through the application of a semi-structured questionnaire, with objective and open questions. Data is statistically analyzed in order to verify normality and homogeneity and descriptive analysis.

b) Qualitative analysis, in which the subjective questions are evaluated using the discourse analysis method.

c) Identification of plant species present in urban home gardens. This step, carried out simultaneously with the application of the questionnaires, consists of recording the plant species found in urban gardens in a specific spreadsheet, considering local toponymy and subsequent identification of the scientific name.

The formulated questions are divided into 3 sections. The first is made up by objective questions related to the characterization of the informant. In the second section, questions are asked on the use of the garden as a space for plant production, as well as aspects related to the management of these species. In the third and last section, the species are identified, including the number of plants and their purpose: ornamental, food, medicinal, commercial, other uses or unused.

Data collection and systematization took place through the following procedures: botanical identification of species; identification of the species' management and use, with an ethnobotanical approach and use identified in the literature, also specifying their frequency in the studied gardens. There was also the intention of identifying the commercialization of fruits, vegetables, tubers and roots, however, there are no occurrences in the sample.

The species' identification is based on visual observation in loco and subsequent confirmation through the analysis of photographic records. At first, there was a forecast of using botanical identification keys, especially for exotic species. However, as all the plants were visually identified, there was no need for support from the herbarium of the

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The use of the species was investigated and categorized as food, medicinal, ornamental, shading or for multiple purposes. These uses have an ethnobotanical approach, that is, the residents identify the origin of the knowledge, such as in the case of the species used for medicinal purposes.

Results and discussion

Socioeconomic aspects

Most of the residences (80%) in Bairro Vingt Rosado are inhabited by their owners, while the rest (20%) is rented. The result is similar to those of the survey carried out by Nascimento (2013), which identified 17% of rented houses in the neighborhood.

All households have at least one resident from other cities. This characteristic is related to the fact that the city is an economic hub of the micro-region, attracting people from other cities and states. As for the families' period of residence in the Vingt Rosado neighborhood, it is confirmed that it is a recent community with a high turnover of residents, since in average and median terms the period of residence is of five years.

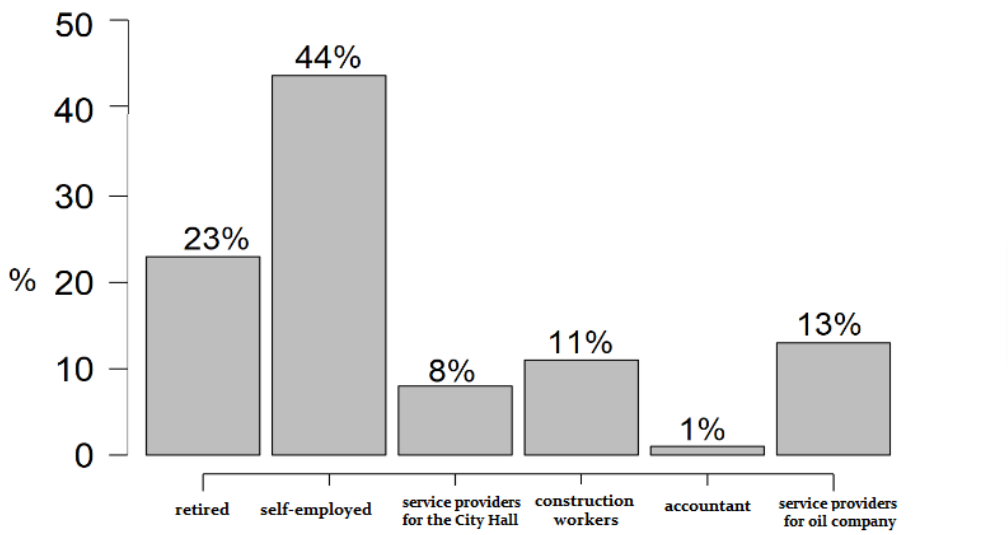
In relation to the number of people per household, it is 3.27, on average. At the highest sample point, six residents are found, and in the lowest, one. In this study, we do not seek to identify the occurrence of intra-household agglomeration, however, these occurrences are not configured as a rule, due to the reduced number of people per household in average and median terms.

It is noticed that most houses have approximately two people who contribute financially, regardless of the type of income. In this research, monetary values are not investigated, however, Nascimento (2013) points out that 36.5% of the residences in the same neighborhood have a monthly income equal to or less than two minimum wages.

Silva (2017), in a study on urban socio-environmental vulnerability in Mossoró, divided the city into sectors, and the area where the Vingt Rosado neighborhood is located has average vulnerability in terms of family income.

Regarding the source of income of economically active people (Graph 1), 44% are self-employed, including activities carried out in their own homes, for example, seamstresses and hairdressers, followed by retirees and employees in the oil and civil construction sectors.

Graph 1 – Professional activities of economically active people by household in the Vingt Rosado neighborhood, Mossoró, RN, Brazil



Source: prepared by the authors, 2022.

Urban home gardening in the Vingt Rosado neighborhood

In all the houses in the sample, plants are cultivated. The logistical aspects that facilitate this scenario are the existence of areas for gardening and the availability of regular and good quality piped water. In relation to the motivation for gardening and cultivation, it ranges from merely aesthetic and cultural aspects, such as shading, to the production of fruit-bearing and medicinal species.

The residences have basically two standards regarding area: 120 m2 or 180 m2, with approximate variations. As for the size of the backyards or front yards, it varies a lot, since they depend on the originally built or renovated area, but in almost all houses, free areas are left where plants are cultivated.

The responsibility for planting and especially for managing the plants is attributed to adults, aging between 20 and 59 years old, of which, in the sample, 76% are women and 24% are men. Caring for plants is an important element in environmental education, so a path that can be followed in an orientation with an environmental approach is for children and adolescents to be co-responsible for planting and maintaining domestic plants.

In 91% of family residential units, the most used place for gardening is the backyard. 6% of the houses have front yards, and vegetable gardens are also found in 3% of the sample, both on the ground and in pots.

The variety of cultivation is related to the available space. If there's little land for

planting, it is usually optimized with species that fit in that condition; if it is a portion at the front of the house, it's frequently used as shading or decoration; if it is in the backyard, there is a tendency to choose fruit trees or plants for medicinal purposes (MOURA and ANDRADE, 2007; LOBATO et al., 2017).

In a research on urban home gardens in the city of Abaetetuba-PA, Lobato et al. (2017) identify that people who garden seek to reproduce experiences lived in childhood or passed on by their ancestors. Thus, the cultivation of plants in urban areas is configured as a process of cultural rescue, reinforcing the idea that the responsibility for plants should be shared with younger generations.

In the cultivation of plant species, the coexistence with insects and other plant pathogens is a fundamental aspect. In this sense, Table 1 shows the pests identified in urban gardens and the type of treatment performed in these occurrences. Ants (several species of the Order Hymenoptera) and caterpillars of unidentified species stand out, which together represent 91% of the pests.

Older residents highlight that, in the location where the Vingt Rosado neighborhood was built, there was a native forest with large anthills, which is an ethnobiological justification for the wide presence of these insects. One of them stated that "the ants got here first, we have to respect them!".

In none of the cases natural products, such as tobacco syrup, or even prophylactic actions such as spraying detergent or vinegar are used. On the contrary, a very high proportion of chemical insecticide use in the domestic environment is observed. This result contradicts the conclusions of Bezerra (2014) who emphasizes the potential for producing healthy foods in home gardens through organic production, therefore, without the use of pesticides.

Table 1 – Occurrence and management of pests in home gardens in the Vingt Rosado neighborhood, Mossoró, RN, Brazil

Pest / Management (%)	Ant	Caterpillar	Mealybug/ Fungus	Cockroach	Total
Never treated	04	11	02	–	17
Use of chemical insecticide	47	29	06	01	83
TOTAL	**51**	**40**	**08**	**01**	**100**

Source: prepared by the authors, 2022.

In this research, the use of pesticides occurs due to the lack of knowledge of organic and natural techniques of coexistence with insects. This points to an evident demand for environmental and management guidance, since, in most cases, the use of chemical insecticides can be technically avoided in small areas.

Freitas (2016) reinforces this understanding, stating that plant management over time has been dissipating due to the emergence of industrialized products that are supposedly more accessible than those grown at home. This is also reflected in insect control,

where people tend to use something "stronger", relegating less environmentally impacting cultural strategies in the care of yards and gardens to the background. Food security provided by the cultivation of fruits, roots, tubers and herbs in a domestic environment loses this condition in non-organic management and without proper technical guidance.

Botanical species identified in the Vingt Rosado neighborhood

Fruit trees have the largest number of individuals and species. They are used for fresh consumption or for processing, mainly in the form of juices and sweets, such as mango, *cajarana*, *ciriguela* and cashew (Figure 2A). In these cases, the plants were acquired in commercial orchards or received as a donation, through the environment department of Mossoró. The city of Mossoró is located in the semi-arid region of Rio Grande do Norte state and, as it has high temperatures during the whole year, the planting of large fruit trees contributes to the microclimate, generating additional benefits in addition to fruit production. As a rule, they are native species or exotic ones adapted to the region.

Several medicinal plants are found. According to reports, in most cases, the seedlings were acquired from older relatives, some of whom are deceased, usually from rural areas of the state. In some cases the plants are shared by the neighbors themselves. When residents refer to medicinal purposes, they almost always mention what they learned from older people. A recurring example is the case of the pomegranate, which is a species to which several uses are attributed, but it's mainly referenced for the treatment of sore throats. The fruit can be consumed fresh or used in the form of tea or *lambedor* [syrup].

One of the residents mentioned that the pomegranate peel has the same properties as the pulp: "we put the pomegranate peels in a glass of water for a while to have a better concentration of the peel and, thus, gargle the water for sore throat".

Another very popular fruit is the *acerola* (Figure 2B), which has multiple uses, both for food and for medicinal purposes. One resident highlights: "we grow acerola for several reasons, firstly because of the constant juice, because my mother said it was good for fighting the flu, at least it alleviates the flu when it [the flu] hits the person".

The lemongrass is an important reference for stomach problems. According to some residents, aloe vera, also passed on by older family members, can be used to treat skin problems and hair loss, among other purposes. A resident pointed out one of the uses of this species: "when I lived in another city, I used it for hair hydration, we mixed it with other products bought in the market and, thus, it had a more intense hydration, this I learned from my mother and brought it here".

As for mint, a resident emphasizes the use learned from ancestors: "I use mint as a *lambedor* [syrup] for the flu, I let it settle in the fire with water and then add a little sugar and, thus, we have a *lambedor*. I also use it as tea to calm my nerves, I learned these teachings from my grandparents, on the farm". One aspect that requires attention is that several species highlighted as medicinal are not native. Costa and Marinho (2016) state that this type of occurrence evidences the influence of external factors on a region's ethnobiological knowledge. Regarding vegetables, green ones, such as chives (Figure

2C) and cilantro, stand out.

The presence of *pinhão-roxo* [purple pine nut] (Figure 2D), according to one resident, "we planted this *pinhão-roxo* because of the evil eye, my parents always said that *pinhão-roxo* warded off evil eye, and that, when its leaves wither, it is because it freed the family from someone who was around with evil eyes". It was also stated by another person that "it is seven years of bad luck to pull out a pine nut tree". Almeida (2014) points out that *pinhão-roxo* has recognized medicinal action, for example, in the treatment of wounds and stomach problems. The author also highlights another potential of the species, with regard to the toxicological effect on insects. One resident mentioned that "it wards off *Aedes aegypti*, the mosquito that transmits dengue fever".

The most common ornamental species are native to the semi-arid region, such as cacti, which are simple to manage. There are also exotic species that have great local adaptability, such as the Indian neem (Figure 2F), which has rapid growth and is often found in houses and sidewalks for shading/decoration purposes. There are also fruit trees on sidewalks, often from the Anacardiaceae family, such as cashews and mangoes (Figure 2E).

The visually perceived predominance of ornamental plants or plants for shading is confirmed through this survey. In a study carried out in urban areas, Trotta et al. (2012) found similar results in several cities in the interior of the State of São Paulo, with an evident emphasis on ornamental plants. In another cataloging survey of species in urban home gardens, Siviero et at. (2014) identified that 57.5% of the ornamental plants in Rio Branco-AC are exotic. The high amount of exotic plants for ornamentation and shading requires studies from the perspective of these species' ecological influence, with regard to the preservation of native plants' biological diversity.

Santana et al. (2017) draw attention to urban agriculture, which, in spite of being a reality, lacks legal frameworks or even public policies that provide the necessary bases for promoting production in urban and peri-urban areas, including for commercial purposes.

Figure 2 – Images of plant species recorded in the residences of the Conjunto Vingt Rosado, Rincão neighborhood, Mossoró, RN, Brazil

Source: prepared by the authors, 2022.

Table 2 shows the botanical species, their origins (native or exotic) and respective occurrence frequencies, as well as the purpose and location of the plants in the residences of the Vingt Rosado neighborhood obtained through sampling.

Table 2 – Popular name, uses and location of plant species in residences in the Vingt Rosado neighborhood, Mossoró, RN, Brazil

Family/ scientific name*	Common name (origin N/E)**	Frequency (units)	Purpose	Location
POACEAE *Zoysia tenuifolia* Thiele	*Grama* [Grass] (E)	11	O	F
MELIACEAE *Azadirachta indica* A. Juss.	*Nim*, Neem (E)	33	S	F
CACTACEAE *Cereus Jamacaru* DC	*Cardeiro* (N)	22	O	F
NYMPHAEACEAE *Opuntia cochenillifera* (L.) Mill.	*Palma* [Palm] (E)	22	O	F
ANACARDIACEAE *Mangifera indica* L.	*Manga* [Mango] (E)	18	F, S	B
ARECACEAE *Cocos nucifera* L.	*Côco* [Coconut] (E)	34	F, M	B
MALPIGHIACEAE *Malpighia emarginata* DC.	*Acerola* (E)	23	F, M	B
ANACARDIACEAE *Spondias cytherea* Sonn.	*Cajarana* (E)	11	F, S	B
ANACARDIACEAE *Spondias purpurea* Sonn.	*Ciriguela* (N)	02	F	B
SOLANACEAE *Capsium* (many species)	*Pimenta- Vermelha* [Red pepper] (E)	03	F	B
ANACARDIACEAE *Anacardium occidentale* L.	*Caju* [Cashew] (N)	06	F, S	B
APIACEAE *Coriandrum sativum* L.	*Coentro* [Cilantro] (E)	05	F	V
LYTHRACEAE *Punica granatum* L.	*Romã* [Pomegranate] (E)	02	M	B
POACEAE *Cymbopogon Citratus* (DC) Stapf.	*Capim-santo* [Lemongrass] (E)	11	M	V
LAMIACEAE *Mentha Spicata* L.	*Hortelã* [Mint] (E)	02	M	V

LILIACEAE *Aloe vera* L.	*Babosa* [Aloe Vera] (E)	01	M	V
CACTACEAE *Melocactus Zehntneri* (Britton e Rose)	*Cabeça-de- frade* [Melon Cactus] (N)	02	M	F
AMARYLLIDACEAE *Allium schoenoprasum* L.	*Cebolinha* [Chive] (E)	03	F	V
EUPHORBIACEAE *Jatropha gossypiifolia* L.	*Pinhão-roxo* (N)	06	Mi	B

* For most species, the botanical classification is based on BRAGA (2001)

** Origin: native – N; exotic – E.

Purpose: food – F; medicinal – M; shading – S; ornamental – O; mystic – Mi.

Location in the residence: backyard - B; front yard - F; vegetable garden – V.

There are no species at risk of extinction, on the contrary, all found species are common in urban and rural areas of the semi-arid region of Rio Grande do Norte. An important aspect is that most plants are exotic, however, with great adaptability.

Therefore, all found species are typical of tropical countries, but with great local dispersion or native to Brazil. Among the species originating in the *Caatinga* biome, the highlight is *cardeiro*, also known as *mandacaru*, an emblematic cactus for its use as animal food, which is also part of Northeast Brazilian cuisine. However, in this urban area, its use is restricted to ornamental purposes.

One aspect that may be the object of future investigation is the monetary evaluation of the production of fruit, vegetables and medicinal plants, which can have their surpluses donated to relatives and neighbors and even commercialized, if this is the intention. Most of the scientific works that deal with the valuation of home garden production are focused on rural areas of family farming, such as the research carried out by Vieira (2009), who used the Contingent Valuation Method (CVM) to calculate the monetary value of gardens of family farmers, members of a cooperative in Itapuranga-GO.

Indeed, it is possible that, in urban conditions, the valuation of home garden production is relevant as a component of variable income. In this sense, Silva (2011) researched the contribution of urban home gardens to family income in Santarém-PA. The author considers the economic value of home garden productions aimed at family consumption and the aggregate impact of this economy on the purchase of food, that is, making it unnecessary to buy those products for family meals.

Studies on ethnobotany in urban home gardens, which combine empirical knowledge with scientific data from the perspective of cultural preservation, should be made possible by public policies aimed at food production in order to improve food security and increase direct or indirect family income. It is also important to develop environmental education projects and notions of agroecology, which encourage the use of productive home gardens.

Final Considerations

In the ethnobotanical survey carried out in the urban home gardens of the Vingt Rosado neighborhood, in Mossoró/RN, 18 plant species are identified, for different purposes, according to the residents themselves. Species for consumption of fruits, seeds, leaves or processed products are worth highlighting, in addition to those for medical purposes, ornamental use and shading. Only one of the species is associated with a mystical purpose, *pinhão-roxo*, to "ward off evil eye".

The Vingt Rosado neighborhood is a relatively recent community that absorbed people who migrated to the Municipality of Mossoró, the second largest economic center in the State of Rio Grande do Norte, which characterizes the cultural and financial diversity of the residents.

The houses have backyards and/or front yards and have frequent access to good quality piped water. The cultivation of plants is verified in all residences. The motivations for gardening are quite varied and take into account aesthetic, cultural and shading aspects, in addition to food production and cultivation of plants considered medicinal. In the latter case, it was found that knowledge is almost always associated with information passed on by older family members or with common sense ethnoculture.

Native and exotic botanical species were identified. However, the latter are locally adapted and widespread. Among the fruit trees, species such as coconut and *acerola* stand out, both exotic, but widely cultivated in the northeastern semi-arid region.

Of the species used for shading and aesthetic purposes, neem is the most present due to its rapid growth, low need for cultural treatments and evergreen foliage. Among the plants for aesthetic purposes, cactus, such as *cardeiro* and palm, are quite present in gardens. Among the species considered medicinal, lemongrass, mint and pomegranate were identified, however, they are much less widespread than fruit trees and plants for aesthetic purposes.

The backyards of the Vingt Rosado neighborhood have great potential for botanical cultivation, and the expansion of this possibility could bring benefits regarding food and environmental security and even expand the possibilities of generating family income.

Actions aimed at environmental education and domestic economy can be useful for expanding the possibilities of plant propagation and use. There is also a need for greater involvement of children and young people residing in the area, since gardening and management is, for the most part, a responsibility of adult women, whose domestic duties and formal and informal work reduce the time of dedication to these activities.

It is noteworthy that one of the most relevant aspects of gardening is the transfer of ethnobotanical knowledge. Without the involvement of younger people, such knowledge can quickly be lost or considered obsolete.

References

ALBUQUERQUE, U.P. de; ANDRADE, L.H.C. Conhecimento botânico tradicional e conservação em uma área de caatinga no estado de Pernambuco, Nordeste do Brasil. **Acta Botânica Brasileira [online].** 2002, v.16, n.3, p.273-285. Disponível em https://www.scielo.php?pid=S0102-33062002000300004&script=sci_abstract&tlng =pt. Acesso em 22 dez. 2021. DOI: https://doi.org/10.1590/S0102-33062002000300004.

ALCORN, J. B. The scope and aims of ethnobotany in a developing world. In: SCHULTES, R. E.; REIS, S. V. (Ed.). **Ethnobotany:** evolution of a discipline. Cambridge: Timber Press, 1995.

ALMEIDA, P.M. **Potencial Genotóxico do Extrato Foliar e do Látex de Pinhão-Roxo (*Jatropha gossypiifolia* L.).** Recife: UFPE, 2014. (Tese de Doutorado). Disponível em https://repositorio.ufpe.br/handle/123456789/12336. Acesso em 12 dez. 2021

ALVES, R. R. da N.; SILVA, A.A.; G.; SOUTO, W.M.S.; BARBOZA, R.R.D. Utilização e comércio de plantas medicinais em Campina Grande, PB, Brasil. **Revista Eletrônica de Farmácia**, v. 4, n. 2, p. 175-198, 2007. Disponível em https://revistas.ufg.br/REF/article/view/3060. Acesso em 09 dez. 2021. DOI: https://doi.org/10.5216/ref.v4i2.3060

BARBOSA, A.M. **Educação escolar, não escolar e etnobotânica**: o conhecimento sobre plantas medicinais em Sombrio/SC. 2013. 102 p. Dissertação (Mestrado do Programa de Pós-graduação em educação), Universidade do Sul de Santa Catarina, Tubarão, 2013. Disponível em https://www.riuni.unisul.br/handle/12345/546. Acesso em 20 dez. 2021.

BEZERRA, J.P. **O papel dos quintais urbanos na segurança alimentar, bem estar e conservação da biodiversidade.** Natal: UFRN, Programa Regional de Pós-Graduação em Desenvolvimento e Meio Ambiente. Dissertação (Mestrado). 2014. 83p. Disponível em https://repositorio.ufrn.br/handle/123456789/19967. Acesso em 09 dez. 2021

BRASIL. INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA – IBGE. **IBGE Cidades:** Mossoró. 2019. Disponível em https://cidades.ibge.gov.br/brasil/rn/mossoro/. Acesso em 05 dez. 2021.

CALÁBRIA, L.; CUBA, G. T.; HWANG, S. M.; MARRA, J. C. F.; MENDONÇA, M. F.; NASCIMENTO, R. C.; OLIVEIRA, M. R.; PORTO, J. P. M.; SANTOS, D. F.; SILVA, B. L.; SOARES, T. F.; XAVIER, E. M.; DAMASCENO, A. A.; MILANI, J. F.; REZENDE, C. H. A.; BARBOSA, A. A. A.; CANABRAVA, H. A. N. Levantamento etnobotânico e etnofarmacológico de plantas medicinais em Indianópolis, Minas Gerais, Brasil. **Revista Brasileira de Plantas Medicinais**, v. 10, n. 1, p. 49-63, 2008. Disponível em https://www1.ibb.unesp.br/Home/Departamentos/Botanica/RBPM-RevistaBrasileiradePlantas Medicinais/artigo8.pdf. Acesso em 20 dez. 2021.

CONSELHO NACIONAL DE SEGURANÇA ALIMENTAR E NUTRICIONAL - CONSEA. **Princípios e diretrizes de uma política de segurança alimentar e nutricional**: Textos de referência da II Conferência Nacional de Segurança Alimentar e Nutricional. Brasília-DF: Gráfica e Editora Positiva, 2004. 80p. Disponível em https://www.ipea.gov.br/participacao/images/pdfs/conferencias/Seguranca_Alimentar_II/textos_referencia_2_conferencia_seguranca_alimentar.

pdf. Acesso em 11 dez. 2021.

COSTA, J.C.; MARINHO, M.G.V. Etnobotânica de plantas medicinais em duas comunidades do município de Picuí, Paraíba, Brasil**. Revista Brasileira de Plantas Medicinais,** Campinas, v.18, n.1, p.125-134, 2016. Disponível em https://www.scielo.br/scielo.php?pid=S1516--05722016000100125&script=sci_abstract&tlng =pt. Acesso em 14 dez. 2021. DOI: https://doi.org/10.1590/1983-084X/15_071

FREITAS, A.V.L. **O espaço doméstico dos quintais e a conservação de plantas medicinais na comunidade São João da Várzea, Mossoró-RN.** Tese de doutorado em agronomia: fitotecnia. Universidade Federal Rural do Semi-Árido, Mossoró, 2016. Disponível em https://repositorio.ufersa.edu.br/handle/tede/188. Acesso em 10 dez. 2021.

LOBATO, G.J.M.; LUCAS, F.C.A.; TAVARES-MARTINS, A.C.C.; JARDIM, M.A.G.; MARTORANO, L.G. Diversidade de uso e aspectos socioambientais de quintais urbanos em Abaetetuba, Pará, Brasil. **Revista Brasileira de Agroecologia.** n. 2, v. 2, p. 095-105. 2017. Disponível em: http://revistas.aba-agroecologia.org.br/index.php/rbagroecologia/article/view /16221. Acesso em 10 dez. 2021.

MEDEIROS, A.P.R; ROCHA, T.T.; LAMEIRA, O.A.; ASSIS, R.M.A. Fenologia reprodutiva de árvores frutíferas de interesse para quintais urbanos na Amazônia. In: **ENCONTRO AMAZÔNICO DE AGRÁRIAS, VII.** Universidade Federal Rural da Amazônia – UFRA: Manaus-AM, 2015. Disponível em https://www.alice.cnptia.embrapa.br/alice/bitstream/doc/ 1014659/1/E0703.pdf. Acesso em 20 dez. 2021.

MOURA, C.L.; ANDRADE, L.H.C. Etnobotânica em Quintais Urbanos Nordestinos: um Estudo no Bairro da Muribeca, Jaboatão dos Guararapes – PE. **Revista Brasileira de Biociências,** Porto Alegre, v. 5, supl. 1, p. 219-221, jul. 2007. Disponível em http://www.ufrgs.br/seerbio/ojs/index.php/rbb/article/view/213/207. Acesso em 05 dez. 2021.

NASCIMENTO, E.A. **A expansão do mercado imobiliário em Mossoró: acumulação capitalista e o aprofundamento das contradições socioespaciais.** Natal: UFRN. Programa de Pós--Graduação em Geografia (Dissertação Mestrado). 2013. Disponível em https://repositorio.ufrn.br/jspui/handle/123456789/18942. Acesso em 10 dez. 2021.

PAULINO, R.C.; HENRIQUES, G.P.S.A.; MOURA, O.N.S.; COELHO, M.F.B.; AZEVEDO, R.A.B. Medicinal plants at the Sítio do Gois, Apodi, Rio Grande do Norte State, Brazil. **Brazilian Journal of Pharmacognosy,** Curitiba, n.22, v.1, p. 29-39, Jan./Feb. 2012. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-695X2012000100005&lng=en&nrm=iso. Acesso em 04 dez. 2021. DOI: https://doi.org/10.1590/S0102-695X2011005000203.

PREFEITURA MUNICIPAL DE MOSSORÓ. Disponível em https://www.prefeiturade mossoro.com.br/. 2020. Acesso em 05 dez. 2021.

PROGRAMA DAS NAÇÕES UNIDAS PARA O DESENVOLVIMENTO – PNUD. **Atlas do Desenvolvimento Humano do Brasil.** 2010. Disponível em http://www.pnud.org.br/ arquivos/ranking-idhm-2010.pdf. Acesso em 05 dez. 2021.

QGIS – Quantum Geographic Information System. **Open Source Geospatial Foundation Project (OSGeo).** Versão 3.8. 2019. Disponível em http://qgis.org./pt_BR/site/. Acesso em 10 jan. 2022.

RICHARDSON, R.J; PERES, J.A.S.; WANDERLEY, J.C.V.; CORREIA, L.M.; PERES, M.H.M. **Pesquisa Social:** métodos e técnicas. 3.ed. São Paulo: Atlas, 2014.

SANTANA, A.C., SEQUEIRA, G.R.; OLIVEIRA, C.M.; GOMES, S.C. Mercado institucional e agricultura urbana e periurbana em Curuçambá, Ananindeua, Pará: oportunidades e desafios. **Revista Brasileira de Gestão e Desenvolvimento Regional,** Taubaté-SP, v. 13, n. 1, p. 316-338, jan-abr/2017. Disponível em https://www.rbgdr.net/revista/index.php/rbgdr/article/view/2742/584. Acesso em 05 dez. 2021.

SILVA, C.S.P. **Vulnerabilidade socioambiental urbana:** um estudo da cidade de Mossoró/RN. Mossoró: UERN, Programa de Pós-Graduação em Ciências Naturais, 2017. (Dissertação Mestrado). Disponível em http://www.uern.br/controledepaginas/mestrado-dissertacoes-defendidas/arquivos/2212camila_saiury.pdf. Acesso em 10 dez. 2021.

SILVA, E.R.R. **Agricultura urbana:** contribuição e importância dos quintais para a alimentação e renda dos agricultores urbanos de Santarém-Pará. Belém: Universidade Federal do Pará. 2011, 201p. (Dissertação de Mestrado). Disponível em http://ppgaa.propesp.ufpa.br/ARQUIVOS/dissertacoes/2011/eliane-raissa-ribeiro-silva.pdf. Acesso em 02 dez. 2021.

SIVIERO, A.; DELUNARDO, T.A.; HAVERROTH. M.; OLIVEIRA, L.C.; ROMAN, A.L.C.R.; MENDONÇA, A.M.S. Plantas ornamentais em quintais urbanos de Rio Branco, Brasil. **Boletim do Museu Paraense Emílio Goeldi. Ciências Humanas**, Belém, v. 9, n. 3, p. 797-813, Dez/2014. Disponível em http://www.scielo.br/scielo.php?script= sci_arttext&pid=S1981--81222014000300015&lng=en&nrm=iso. Acesso em 24 nov. 2021. DOI: http://dx.doi.org/10.1590/1981-81222014000300015.

TROTTA, J.; MESSIAS, P.A.; PIRES, A.H.C.; HAYASHIDA, C.T.; CAMARGO, C.; FUTEMMA, C. Análise do conhecimento e uso popular de plantas de quintais urbanos no estado de São Paulo, Brasil. **Revista de estudos Ambientais (Online),** v.14, n.3, p.17-34, jan./jun. 2012. Disponível em https://proxy.furb.br/ojs/index.php/rea/article/view/2854. Acesso em 24 dez. 2021. DOI: http://dx.doi.org/10.7867/1983-1501.2012v14n3p17-34.

VÁSQUEZ, S.P.F.; MENDONÇA, M.S. de; NODA, S.N. Etnobotânica de plantas medicinais em comunidades ribeirinhas do Município de Manacapuru, Amazonas, Brasil. **Acta Amazônica.** v. 44, n.4, p. 457 – 472, 2014. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0044-59672014000400007&lng=en &nrm=iso. Acesso em 24 dez. 2021. DOI: https://doi.org/10.1590/1809-4392201400423.

VIEIRA, F.R. **Valoração econômica de quintais rurais:** o caso dos agricultores associados à Cooperafi (Cooperativa de Agricultura Familiar de Itapuranga-GO). Goiânia: Universidade Federal de Goiás. 2009, 106p. (Dissertação de Mestrado). Disponível em http://repositorio.bc.ufg.br/tede/handle/tde/425. Acesso em 02 dez. 2021.

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AMBIENTE & SOCIEDADE 25 anos 25 años 25 years

SciELO

Etnobotânica nos quintais urbanos em Mossoró-RN

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Resumo: As espécies vegetais cultivadas em quintais urbanos melhoram a qualidade ambiental, trazem benefícios estéticos, servem para a produção de alimentos e de plantas medicinais, dentre outras finalidades. Este trabalho tem como objetivo realizar um levantamento etnobotânico nos quintais urbanos no Bairro Vingt Rosado em Mossoró-RN. Os procedimentos metodológicos constaram de aplicação de questionário semiestruturado e identificação das espécies vegetais presentes nos quintais e jardins das unidades residenciais. Em todas as residências amostradas, foram encontradas plantas, sendo catalogadas 18 espécies, com finalidades diversas. Os quintais urbanos estudados têm um grande potencial para cultivo botânico e a expansão dessa possibilidade poderá trazer muitos benefícios do ponto de vista da segurança alimentar e ambiental e até mesmo ampliar as possibilidades de geração da renda familiar.

Palavras-chave: Etnoconhecimento; Quintais produtivos; Segurança alimentar;. Semiárido; Cultivo botânico.

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Artigo Original

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SciELO

Etnobotánica en los patios urbanos en Mossoró, Rio Grande do Norte, Brasil

Ana Paula de Moura
Alan Martins de Oliveira

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Artículo Original

Resumen: Las especies vegetales cultivados en patios urbanos mejoran la calidad ambiental, traen beneficios estéticos, sirven para la producción de alimentos y de plantas medicinales, de entre otras finalidades. Este trabajo tiene como objetivo realizar un levantamiento etnobotánico en los patios urbanos en el barrio Vingt Rosado en Mossoró-RN. Los procedimientos metodológicos constaran de aplicación de cuestionario semiestructurado y identificación de las especies vegetales presentes en los patios y jardines de las unidades residenciales. En todas las residencias amostradas incluidas en la muestra fueran encontradas planas, siendo catalogadas 18 especies, con finalidades diversas. Los patios urbanos estudiados tienen un grande potencial para cultivo botánico y la expansión de esa posibilidad podrá traer muchos beneficios del punto de vista de la seguridad de los alimentos y del ambiente, además de ampliar las posibilidades de generación de la renta familiar.

Palabras-clave: Etnoconocimiento; Patios productivos; Seguridad alimentar; Semiárido; Cultivo botánico.