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The Ethnobotany of an Afro-Brazilian Community at Sertão do Valongo, Santa Catarina, Brazil

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ABSTRACT

This paper aims to study the ethnobotany of a rural Afro-Brazilian group at Porto Belo (Santa Catarina State, Brazil) regarding the local plants (both native and exotic) that are recognized as a resource by this community. We also analyze how this knowledge is distributed within gender and age in this group. The community is located 12.5 miles far from the coast line, in a peripheral rural area in relation to the areas colonized by Portuguese, German, Italian and Polish immigrants. In spite of their Afrodescendant origin, they currently identify themselves as Protestants rather than Afrodescendants, since they represent one of the oldest groups of Seventh Day Adventists in Santa Catarina State. We conducted 22 interviews (44% of the target population) regarding their ethnobotany knowledge, which resulted in 132 botanical species known and used for medicine, food, construction, fodder and ornamental. The knowledge is heterogeneously distributed among gender and three generations analyzed, varying according to the use category. Native plants are poorly known when compared to exotic ones, however, plant knowledge is still important for their identity as a rural community.

Keywords: Atlantic Forest, ethnobotany, plant use, traditional ecological knowledge, rural Afro-Brazilian group

INTRODUCTION

Each culture or civilization builds a different image of its nature, perceiving it distinctively on its richness, and adopting a particular use (or non-use) strategy (Toledo *et al.* 1995). Many authors use the term 'traditional' or 'folk knowledge' to define knowledge of the locals on their natural environment (Martin 1995; Albuquerque 2002). Folk knowledge is defined as a cumulative and dynamic *corpus* of knowledge, practices, and beliefs, which involves an adaptation process and uses cultural transmission through the generations, on the relations between living beings and their environments (Berkes 1999). This is an attribute of historical societies who use resources in a certain area continuously; and it is a feature of non-industrial or less technological societies, many consisting of indigenous groups or tribes – though not exclusively.

Oral transmission is the main way through which knowledge endures in traditional societies, requiring intense and long-term contact between the elder and younger members of the community (Amorozo 1996). Learning is socialized inside the household group or domestically, without the need of mediating institutions. There is no distinction between theory and practical knowledge – both are acquired at the same time: as children do their chores, they learn how to do them and absorb verbal explanations and codifications on them, little by little.

Research on ethnobotany may serve as a database to ensure land rights, and to provide or contribute to community development programs (Albuquerque and Andrade 2002). The study on knowledge and use of natural resources by local populations, and the detailed analysis of the impact of their practices on biodiversity may also contribute to rural development, as well as to conservation projects (Martin 1995).

The main objective of this paper is to perform an ethnobotany research on an Afro-descending rural group living currently in the Sertão do Valongo region, within the municipality of Porto Belo, Brazil. The following questions were specifically addressed: a) which local (native or non-native) plants are considered as resources to this community? b) to what means such plants are being used? c) in what way is this knowledge distributed among the members of this community, considering age, and gender? The ethnobotany of Afro-descending communities in Brazil has been studied especially on its religious uses, such as in *candomblé* (an Afro-Brazilian religion) rituals (Verger 1995; Albuquerque 1999, 2001; Bandeira *et al.* 2002; Voeks and Leony 2005; Albuquerque *et al.* 2007). In this case study, such practices have not been found; however, it is expected to find an important amount of locally built knowledge on plants.

METHODS

Context and case study area

In many places within the Brazilian territory, there are occurrences of many Afro-descending populations living in rural conditions that often, due to the isolation, have spent many years with a small contact with other groups and have established their own lifestyles, within many contexts existing throughout the country.

The Sertão do Valongo region is located between the cities of Porto Belo and Tijucas, in coastal Santa Catarina (27° 12′ 12″ S latitude, 48° 44′ 30″ W longitude), occupying a small valley located about 12.5 miles away from the coastline. The vegetation in the region is within the dominium of the Dense Ombrophylous Forest, containing a great deal of secondary vegetation (Atlas de Santa Catarina 1986), and eucalyptus plantations.

The Santa Catarina state is a region of Brazil in which population policies have favored the European immigration, mostly German, Italian, and Polish immigrants in the 19th century, which meant to make Brazil racially "whiter" (Azevedo 1987). The effective implantation of the European immigration occurred at the same time as the slavery was being abolished, and the former slaves were replaced by the immigrants; therefore, the former slaves have not been inserted in the new market of paid workers,

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Fig. 1 The ox cart is a common transportation at Sertão do Valongo, Brazil. (photo by L. M. Cruz)

and have been kept within the informal economy (Azevedo 1987). Cardoso and Ianni (1960) admit that even though the slaves have not played an important part in colonizing Southern Brazil, no sector of economy has survived without their working power. Within the context of historical invisibility is the Sertão do Valongo group (Leite 1996), specified as being a religious group: the Valongo are members of the Seventh-Day Adventist Church for seventy years, which makes the Sertão do Valongo one of the oldest Seventh-Day Adventists in the state (Teixeira 1996).

According to Teixeira (1996), the Sertão do Valongo is a peripheral area from coastal locations of ancient Portuguese-Azorean civilizations, to the later countryside occupation areas (by the German, Italian, and Polish). Its localization and access difficulties have then contributed to keep the area as an unwanted territory for colonizing companies and other groups. The Sertão do Valongo community was a convergence area for former slaves of the neighboring areas – a place to enjoy freedom of choice on their destinies, having this land as survival insurance. The first generation thus arrived at the area in the late 19th century. Regarding work methods, Teixeira (1996) considered that the local people would call themselves "rental labor" or farmers of their own lands; they would pay services to the neighboring areas without legal registries, and the employer would not have any social tax or obligation, as well as having the liberty of breaking "contracts" easily. The female labor was to crop or plough the plantation areas around the country; their pay was settled between the employer and a man of the country, who defined prices, taxes, and labor hours. This was the only income for widows or single women.

The religious way of life of the Sertão do Valongo is explained by a timeline break between two distinctive phases: The times "before religion" and the "religion times". Conversion has started a new period, which has changed their way of life and values. The ethnic identification category for this group has been changed by the self-categorization of a religious group; this was a distinctive group definition criterion which has maintained the ethnic frontier through establishing the dichotomy of identification categories, attributing people as Adventists or "religious" as opposed to Catholics, Protestants, or non-religious. To the Sertão do Valongo residents it is much more important to be related as an Adventist, than being black, as a group definition criterion (Teixeira 1996).

In the early 20th century, there was great food production in the Sertão do Valongo area. Simultaneously, there were three places operating as sugar and flour mills to produce sugar and manioc flour. Currently they no longer exist, and the food production has diminished through the last forty years, which has made the group more dependent on industrialized products from the cities (Souza 1993).

Currently the Sertão do Valongo population is of 74 people (Souza and Culpi 2005). The study case population is of 50 adults: 25 men and 25 women. 10 people are from the third generation of locals, 24 are members of the fourth generation, and 16 are of the fifth generation. The categorization under different generations was based on the first afrodescendants who arrived the region as being the first generation, their sons and daughters as being the second generation, and so on.

Regarding infrastructure, despite there is electric power in the area, there is no water treatment or sewer system; there are no businesses as well. The school supplies the area with elementary year classes (1st to 4th grades), forcing people to go to the city of Porto Belo for further education.

The access to the community is through a dirt track, in which public transportation works coming only a few times a day, coming for the students and the Porto Belo City Hall employees. The most widely used way of transportation is still the ox cart (**Fig. 1**).

Data collection

For obtaining data different interview techniques have been used, beside the collection of samples of ethnobotanically important species for further taxonomic identification, herborization; and participant observation. The latter was used in order to apprehend the way culture operates, and to perceive how social agents see the world, as well as to obtain trust and friendship of the interviewees, through the interaction between the researcher and the members of the case study society (Amorozo 1996).

About half the adults in the community have been interviewed in a non-structured manner: The interviewee was aware of the interview, led to the interest topic (used plant resources), and the interview ran as a conversation, where the interviewer controlled his or her answers as little as possible (Alexiades 1996). The interview was then performed in a semi-structured manner, starting from a free listing to each use category. The use categories in this case study are: medicinal, food, construction, breeding, and ornamental purposes. These categories were defined based on the local perceptions about useful plants. In sequence, the interview had a structured stage in which specific matters on medicinal plants could be explored, such as the better detailed analysis of the handling, preparation, and conservation of resources.

The plants cited in the interviews have been collected, herborized or photographed to undergo taxonomic identification, with the aid of the interviewees. The taxonomic identification of collected and/or photographed plants has been made through the use of an eyeglass and/or proper literature (Legrand and Klein 1977, 1978; Burkart 1979; Joly and Leitão-Filho 1979; Cabrera and Klein 1980; Klein 1984; Lorenzi 1998, 2000; Lorenzi and Souza 2001; Backes and Irgang 2002; Barroso and Bueno 2002; Lorenzi and Matos 2002; Lorenzi *et al.* 2003). Taxonomic identification was done at the Laboratory of Vascular Plants (Botany Department, Federal University of Santa Catarina), with the collaboration of A. Zanin and D. B. Falkenberg.

The qualitative analysis of data has been done with data from the field journal, participating observation, and the non-structured interviews. Such analysis allowed the researchers to understand the background knowledge in which plant use occurs (Amorozo 1996).

In order to analyze the degree of coincidence of the answers regarding medicinal plants, the Friedman *et al*. (1986) method has been chosen, adapted by Amorozo and Gély (1988), based on the interviewee consensus, which is the relative importance of each use being calculated directly from the consensus degree on their answers (Phillips 1996). The relative importance of each plant use can be inferred through the analysis of the consensus of the interviewees, regarding the use of a certain plant (measured in this case study through the percentage of agreement in the main uses of a plant). According to this method, the percent of agreement about main uses (PA) is calculated through the number of interviewees citing the main uses for a given plant divided by the number of interviewees who cited any use for this given plant. The result is expressed in percentage. The resulting value of PA is corrected by the relative popularity index (RP). RP is given by the number of times the interviewees cited one given plant divided by the number of times they cited the most cited plant.

RESULTS AND DISCUSSION

Among the 50 people in the target population, 22 people (44%) have been interviewed: 10 men (45%) and 12 women (55%). From the 22 interviewees, 6 were from the 3rd generation (27%), 12 are from the 4th generation (55%), and 4 are from the 5th generation (18%). The average ages of the interviewees of the 3rd, 4th, and 5th generations are respectively, 73, 44, and 24 years old.

The ratio of people from the 3rd, 4th, and 5th generations on target population (20%, 48%, and 32% respectively) is different from the total ratio of interviewees, especially in the 5th generation.

Seven out of ten men interviewed work for the Porto Belo City Hall, either as gardeners or as what they call "physical laborers". Even though they have jobs, two of the ten men work on their own lands. Two men are rural laborers, exclusively. Only one of the interviewees is retired, though he works on a small and much diversified plantation near his home.

Out of 12 women, one has a job as a housekeeper in another city, and another woman works in the canteen of a school near the Sertão do Valongo community. Three women are retired and four are rural laborers – two of their own land, two of sublet lands. Half the women are also housewives, whether they have other activities or not.

Regarding religion, a great influence on their local culture, all interviewees are Adventists and live in the Sertão do Valongo community since birth. Most interviewees own their own land, except for two people who have sublet their lands.

The use categories in this case study are: food (27%), construction (22%), breeding (10%), ornamental (21%), and medicinal purposes (36%). The sum of percentages is higher than 100%, because some plants appeared in more than one category. 169 popular names have been cited; 132 of those have been identified as botanic species (to gender at least), which belong to 53 families. The other 37 plants were identified to family level (5), or have received no identification (32).

In Caiçara community studies from the Atlantic Forest of North Coastal Sao Paulo state, and Southern Rio de Janeiro state, Begossi *et al.* (2002) found that the total species richness came as 100~216 popular names in six different communities, counting medicinal, food, and construction categories. For the same categories, 144 popular names have been found in the Sertão do Valongo community – a number close to the Caiçara community results.

In the Valongo botany, the term "brand" has the same meaning as species and/or variety, using expressions such as "These are the best brands" after an interviewee cited a free list of building materials; "There are several brands", after an interviewee mentioned the banana varieties he knew. Also, the expression "it's just as similar", used by the interviewee hired to collect the construction plants, means that plants belong to the same botanical family.

Plants used for food

Forty six plant names have been used for feeding plants, representing 25 families out of 167 citations by the 22 interviewees. Such values are close to the average values of plants cited by the seven Caiçara communities in this category; they have cited 29~82 plants, an average of 50 plants (Begossi *et al.* 2002). In a general analysis, the most cited plant was manioc (*Manihot esculenta* Crantz) (8% out of 167 citations, being cited by 64% of the interviewees), being the plant with the highest relative popularity. Other plants with high relative popularity (RP) were bananas (*Musa acuminata* Colla) (RP=0.9); beans (*Phaseolus vulgaris* L.) (RP=0.9); orange (*Citrus sinensis* Osbeck) (RP=0.6), corn (*Zea mays* L.) (RP=0.6), sugar beet (*Beta vulgaris* L.) (RP=0.6), carrot (*Daucus carota* L.) (RP=0.6), and lettuce (*Lactuca sativa* L.) (RP=0.5). Other food plants had relative popularity less than 0.5, or 50%.

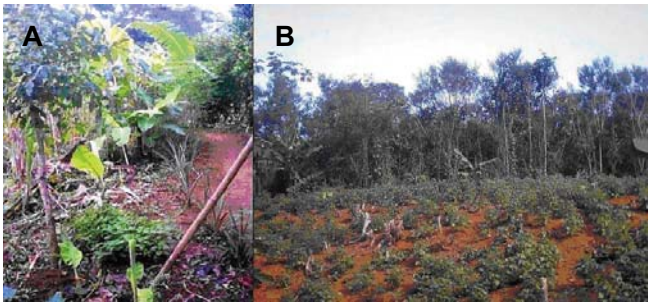

Fig. 2 Cultivation areas at Sertão do Valongo, Brazil. A different species planted together (bananas, coffee, pineapple, medicinal plants, sugarcane); **B** cultivation area with banana and beans in the bottom of a hill and regenerating forest at the top of the hill. (photos by L. M. Cruz)

The emic category used for feeding plants is "crop plant". Most interviewees have declared being farmers since the early ages: "I was born in the crops, already"; "I was raised in the plantation". And so they tell of the high food production in the Sertão, and of the production of manioc flour in the manioc works, thick sugar in the sugar cane works, bananas and other products sold in the city of Tijucas. Despite many consider important the maintenance of the crops, food production has been diminishing due to reasons such as the concurrence with the large-scale producers, and reports from environmental organs: "We can't plant because we cannot slash down the woods... We got to do it in old crop areas"; regarding changes in the work methods, According to some interviewees, they must have "outside jobs" to provide for their families, for their production is small, and the products do not receive fair prices in the market. Despite the cuts in local food production and the higher consumption of industrialized products made outside the area, the Valongo praise local products for not having toxic or chemical products.

The observed crops had a wide variety of different goods planted together (**Fig. 2A**). Regarding the crop distribution in the area, they occur close to the land elevations and in the plains, preserving the tops of hills (**Fig. 2B**). Despite the crops are widely varied, they are not very large, and are meant only for subsistence. According to one interviewee, it is common to share goods with the neighbours.

A few of the Valongo goods have varieties, such as beans, sweet potatoes (*Ipomoea batatas* Lam.), arrowleaf (*Xanthosoma sagittifolium* (L.) Schott), banana, collard greens (*Brassica oleracea* L.), among others. They are also considered by the Valongo as better than the plants available in the market.

The seasons set the time for planting and cropping: The appropriate season to plant vegetables is in the autumn/winter. The corn must be planted in the spring/summer in order to produce bigger corn ears. If planted in the autumn/winter,

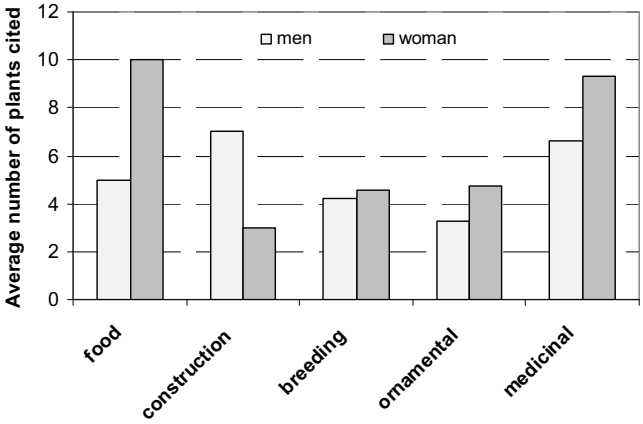

Fig. 3 Average number of plants cited in each category by interviewed men (n=10) and women (n=12) at Sertão do Valongo, Brazil.

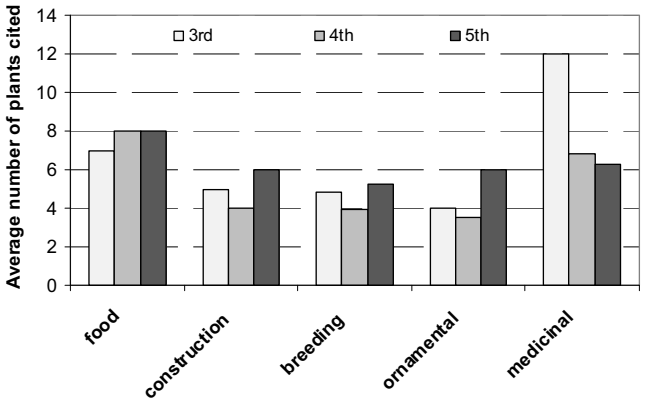

Fig. 4 Average number of plants cited in each category by interviewees from different generations at Sertão do Valongo, Brazil (n=6 from the 3rd generation, n=12 from the 4th generation, and n=4 from the 5th generation).

corn will be used only as animal food. The planting references of the Valongo are also based on the phases of the moon. Corn and sugar cane (*Saccharum officinarum* L.) were planted in the waning moon. Manioc must be planted in full moon to favor root growth.

Women have cited two times more feeding plants than men (**Fig. 3**). Such data may be related to the time many men spend in jobs outside the crops, as well as to the fact that women are mostly responsible to prepare food. Most small herb plants, grown close to the houses, were also handled by the women.

There was no generation differences regarding the number of cited plants (ANOVA F=0.662, p=0,54) (**Fig. 4**), probably due to the quotidian learning of food plants, through which the young learn early about what is edible and what is not (Phillips and Gentry 1993).

Plants used for construction

Thirty-eight plants for construction have been cited, representing 18 botanical families out of 100 citations by the 22 interviewees. The *eucalipto* (*Eucalyptus* sp.) and the *guamirim* (*Myrcia* sp.) were the most cited plants, both were cited by 45% of the interviewees and had the highest relative popularity (RP=1). Other highly cited plants were *canela* (Lauraceae family, several species) (RP=0.9); *peroba* (Apocynaceae family) (RP=0.8); *camboatá* (*Matayba guianensis* Aubl.) (RP=0.7), *jaguatirão* (*Miconia cinnamomifolia* Naud.) (RP=0.6), and *seca-ligeira* (*Pera glabrata* Poepp ex. Baill) (RP=0.5). Other construction plants had relative popularity less than 0.5, or 50%.

The emic category used by the interviewees for building plants was timber. This category includes plants used to build houses, gates, fences, ox carts, working instruments, among others.

Despite the knowledge of many plants for this category, the interviewees have shown that the use of such species is restricted, mostly due to the prohibition by the previously cited environmental law. Currently they have permits to cut only eucalyptus and pines (*Pinus elliottii* Engelm.) – low quality timber varieties, according to the Valongo. Such data explains why the eucalyptus is one of the most cited plants. Therefore, they only use native plants in small, strict and locally used quantities.

The average number of plants for construction cited by the men is more than two times higher than the cited by the women (**Fig. 3**). This shows a greater participation of men in the construction activities. Some women have not cited any construction plants, mentioning that such subject was to be treated with the men.

Regarding the distribution of knowledge on construction plants among generations, there was a small difference in the average number of cited plants, showing that the younger members also know well the construction plants of the area, probably due to the contemporary need of exploiting such resources (**Fig. 4**).

Breeding plants

The breeding of cattle or chicken is wide in the Sertão do Valongo, which supplies meat, eggs, and milk, and is also a mean of transportation (as ox carts). Such animals are fed with plants of the area, as well as with ox-food bought in agro-product stores, frequently, with the mixing of the two items.

The interviewees cited 17 plants from six botanical families. Bananas and sugar cane were the most cited plants, both cited by 91% interviewees and with the highest relative popularity (RP). Other important plants for breeding were green corn (*Zea mays* L.) (RP=0.7) and grasses (Poaceae, several species), (RP=0.6).

The local plants used to feed such animals are called by the interviewees "treating plants". Those are usually mixed and chopped before being given to the animals. Such plants can be collected in the woods, such as the *caeté* herb (*Heliconia* sp.), or planted, such as the sugar cane, the banana leaf, and the corn planted in the autumn.

There were no differences in the average numbers of fodder plants for men and women, or for different generations (**Figs. 3, 4**). Such result shows the participation of all people in the animal breeding activities.

Ornamental plants

Down the road through the Sertão do Valongo community (to which most houses face) one of the most interesting details are the silence and the gardens in front of the houses – with an immense quantity and variety of ornamental plants, called "flower plants" by the interviewees.

Thirty six plants were cited for ornamental purposes, from 19 botanical families. The *rosa* (*Rosa* sp.) was cited by 77% of the interviewees and with the highest relative popularity. All the other plants had RP lesses than 0.5, or 50%. The most cited ones were *onze-horas* (*Portulaca* sp.) (RP=0.4), *jasmim* (*Ervatamia coronaria* Stapf.) (RP=0.4), *adália* (*Dahlia pinnata* Cav.) (RP=0.3), and *lírio* (*Hedychium* sp.) (RP=0.3).

Women have cited a greater average number of ornamental plants than men; some men have not cited any plant for this category (**Fig. 3**). Such data shows that women are more involved in the garden care than men, except for the male professional garderers.

The 5th generation has cited a greater average ornamental plant number than the other generations (**Fig. 4**). This may imply a recent introduction of ornamental plants in the community and/or the more active participation of the younger with the garden care.

Medicinal plants

The interviewees cited 60 medicinal plants, representing 26 botanical families out of 178 citations by the 22 interviewees. The quantity of plants cited for this category is close to the average number found in seven Caiçara communities which vary from 53 to 105 species, with an average of 70 plants (Begossi *et al.* 2002).

Though, this value is much smaller comparing to the obtained in a study on the use of medicinal plants by the Lower Amazon River Caboclos (Barcarena), in which 242 species have been cited on this category (Amorozo and Gély 1988). It must be considered the fact that the "medicinal" term designates all species that would cure, physiccally or with supernatural implications – the "magic use" (Amorozo and Gély 1988).

Families with more than five species were Asteraceae, Labiatae, and Myrtaceae. The most cited plant was mint (*Mentha rotundifolia* (L.) Huds. and/or *Mentha* x *piperita* L.), mentioned by 82% of the interviewees, and thus with

the highest relative popularity (RP). Other plants with RP higher than 0.5, or 50%, were *erva-cidreira* (*Melissa officinalis* L.) (RP=0.78), and *cana-de-cheiro* (*Cymbopogon citratus* (DC.) Stapf.) (RP=0.67).

The emic category adopted by the Sertão do Valongo interviewees for medicinal plants is "tea herb". The name may come from the fact that tea is the most used manner of administration, and also from the fact that more herbs (62%) are used in this category.

The most widely used manners of preparation are the infusion (52%) and the decoction (25%), both called "tea". In other studies, these manners of preparation have also been cited as predominant (Di Stasi *et al.* 2002; Pilla *et al.* 2006). In many cases, more than one manner of preparation is indicated for the same plant. The local preparation names are: to crush/smash (to macerate); to lid the tea (to infuse); to boil the tea (to decoct); to rest in alcohol (to make dye).

Some popular names for the *ervas de chá* (tea herbs) are typical from Sertão do Valongo, such as *massanilha* (*Chamomilla recutita* (L.) Rauschert), *arrudi* (*Ruta graveolens* L.), *arnic* (*Artemisia camphorata* Vill.), *chama-rita* (*Vernonia tweedieana* Baker), *garapicica* (*Zollernia ilicifolia* Vog.), *margosa* (*Artemisia absinthium* L.), and *tanchá* (*Plantago* sp.). Some diseases also have popular names in the area, such as *disistan* (indigestion), *zipra* (wound infection), *pisado* (wound), and *malina* (sun exposure).

Some expressions, cited only by the 3rd generation interviewees, indicate a knowledge with alternative conceptions of nature and plant use, for example: "the stinging nettle leaf (*Urtica* sp.) bites", probably related to the fact that it has stinging hairs; "ginger (*Zingiber officinale* Roscoe) is a hot medicine", being used by this interviewee for "stomach burns". The hot-cold syndrome is very common in Latin America (Amorozo 1996), regarding thermal aspects and others, not temperature-related, such as diseases, medicinal plants or food. Its treatment has its own conception of cause and effect, though it is different of a scientific cause explanation, it does not exclude the possibility of a pharmacological action in the plant (Amorozo and Gély 1988).

Internal means of administration are the most commonly used (78%); one interviewee mentioned the need for continuous treatment in order to achieve higher efficacy, and alerted on various reactions of organisms to different plants.

During the interviews, there were no recommendations of specific doses or plant quantities for the preparation of the medicine, or administration doses. According to Martins *et al.* (2000) in most cases the doses were not quite exact because small quantity variations could not cause any harm - this does not apply to chemical medications of conventional medicine.

However, the lack of formal dosage is dangerous due to toxic substances in some species which may cause harm depending on the dosage or continuous use (Silva-Almeida and Amorozo 1998). The avocado leaf (*Persea Americana* Mill.) and the Indian coleus (*Plectranthus barbatus* Benth.) have been mentioned as toxic if excessively used. According to the interviewees, such teas could "harm the eyesight" if taken in excess.

Leaves are the most frequently used plant parts in the preparation of home made medicine (62%). This is due to the fact that the leaves can be easily collected, and are often available (Di Stasi *et al.* 2002). According to Martin (1995), the frequent use of leaves indicates the conservation of a vegetable use, for the leaf collection does not stop the plant from growing or reproducing, if not collected in excess.

When questioned about with whom was this tea herbs knowledge was acquired, most times the interviewees mentioned their parents or grandparents. Though, due to the wide family trees and the daily life of the community together, the exchange of plants or knowledge between families is very wide.

In the previous and deceased generations, plants were used in blessing rituals. One interviewee has mentioned superficially how the blessing rituals were made, though such practice has vanished with time and with the conversion of the Valongo to the Adventist Church, which does not allow such ritual.

Some plants, which used to be abundant in the country, such as the common rue (*Ruta graveolens* L.), have vanished with time as its magical use has diminished. Many plants cited by interviewees for medicinal purposes are used in Afro-Brazilian rituals in other regions of Brazil, such as rosemary (*Rosmarinus officinalis* L.), basel (*Ocimum* sp.), corn (*Zea mays* L.), *quebra-pedra* (*Phyllanthus tenellus* Roxb.), and *sabugueiro* (*Sambucus australis* Cham. & Schlecht.) (Camargo 1998).

In order to classify medicinal plants according to handling intensity, the medicinal plants have been divided in a) Grown: Planted and handled by intention in anthropogenic environments (crops and back yards); b) Spontaneous: Collected in anthropogenic environments (breeding areas, crops, back yards, and roads; c) Wild: Collected in forest or regenerating environments.

Most cited species are grown (70%). Medicinal plants are planted usually in the back yards of the houses, directly into the soil – though they can be found in the crops as well. The use of wild plants (15%) indicates the presence of native vegetation in the proximities, and also the fact that the population knows the resources of such vegetation, handling it in a certain level.

The average numbers of medicinal plants cited are 9.3 ± 5.6 per woman, and 6.6 ± 3.6 per man. Therefore, despite the fact that women have cited more plants than men, the total citations in each category is better distributed among the men than among the women - which demonstrates a higher level of consensus among the men (**Fig. 3**).

The 3rd generation interviewees have cited about 12 ± 3.4 plants. The 4th and 5th generations have cited similar average numbers of 6.8 ± 5.1 and 6.3 ± 3.4 respectively - which demonstrated a higher level of consensual knowledge amont the 4th generation of the Sertão do Valongo community. Although in the 5th generation it must be taken into consideration the small number of interviewees, and the statistic fact that different values could have been obtained if more people of the 5th generation had been interviewed (**Fig. 4**).

It is still possible to affirm that the 3rd generation knows more medicinal plants than the other generations. Such data may have a relation to the knowledge obtained over the years; the elders tend to know more on vital subjects for the community, being highly respected because of such knowledge (Amorozo 1996). The preparation and use of plant-based medications is a more complex and time taking process than simply preparing vegetable products for food – and it takes more time to learn that as well (Phillips and Gentry 1993).

When asked about the use of home made or conventional medications, a large amount of interviewees said they preferred to use the home made medicine and go to the Health Station at the city only when really necessary. Many were proud not to need medication (whether conventional or home made), for they rarely became ill. Some interviewees have mentioned that the doctors of the nearest Health Station recommend home made medicine or the consumption of certain kinds of food, in order to heal or prevent diseases.

A large amount of the interviewees have demonstrated interest in learning new knowledge on medicinal plants. So do a few interviewees say "We have some tea herbs but we don't know the use for them anymore", demonstrating interest in knowing more on the vegetation of their surroundings. When citing plants which uses have been learned from people from different places, such as *garapicica* (*Zollernia ilicifolia* Vog.), *alecrim* (*Rosmarinus officinalis* L.), *sete-sangrias* (*Cuphea calophylla* Cham. & Schltdl.), and *catinga-de-mulata* (*Tanacetum vulgare* L.), they said, "This plant wasn't invented (made up) here". This shows the diffusion and fixation of new knowledge in the community.

In all categories, the knowledge is accumulated, transformed, and transferred along the generations in a dynamic

manner; this could be noticed through the great disposition of the interviewees in exchanging information and knowledge, as well as the fact that the younger generations knew less plants. According to Laraia (1993), each cultural system is always changing, internal (from its own dynamics) or externally (from the contact with other cultural systems).

According to Amorozo (1996), as such relatively isolated communities become more and more exposed to the more urbanized societies, several factors may influence to break the transmission of traditional knowledge, such as: The change of values attributed to such knowledge, to assure the survival and reproduction of the society face the modern problems and challenges; the contrast between traditional knowledge and new information of the outside world, currently accessible and noticed especially by the younger as something inferior; and the formal education which takes the young away from the elders for a significative amount of time per day and hinders any interest on traditional knowledge.

CONCLUSIONS

Several factors affect plant use, whether produced or collected in the area, varying according to each plant: the environmental law restrictions; religion; changes in the working processes; the maintenance of the resource in the area, among others.

The distribution of knowledge among the members of the Sertão do Valongo community is overall heterogeneous, considering generations and gender, varying accordingly to the use category. Such variation is not necessarily reflected through statistical comparisons of averages on general data, but rather is reflected in variation in the knowledge distribution patterns among the use categories shows the attribution of different social roles to the individuals, according to the generation and gender parameters. It also shows the different ways in which knowledge of the various use categories are being transmitted and accumulated though the generations, as well as through men and women.

The resources are mostly used to help on local demands – very few resources become sale products. Therefore, the cuts in the commercial resources production or collection is due to the low value of local products in the neighboring areas, as well as due to the changes in daily work, and the Brazilian environmental law restrictions of use and occupation of the area.

The interviewees have mentioned names and explanations of diseases of the area, which suggests further studies on the health conceptions of the local people. Such studies, allied to home-made medicine based health treatments may be quite useful to implement a health system, with adaptations to the local reality. Therefore, this paper provides data which may help producing social projects and/or handling plans to explore the area and its plant resources while continuing traditional practices, and the conservation of natural resources.

Finally, it is important to note the need of knowing and displaying the culture of Afro-descending communities of the Santa Catarina state so they can be visible in the national scenario, changing the conception that in this Brazilian state, Afro-descending communities are absent.

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