

# Traditional medicinal knowledge in Cuba

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## Abstract

For about a decade the Portuguese Tropical Research Institute has been investigating traditional medicinal knowledge in Latin American metropolises. In 2009 a survey was extracted from Havana, Cuba. Data sources were a sample of fifty interviews extracted from forty-seven households possessing front and backyards with medicinal species, which Cubans use to mitigate aches and pains, in two La Habana municipalities, Playa and Plaza de la Revolución, plus three extensive interviews with La Habana Vieja herb traders. The main objective was to recover ancient domestic prescriptions among urban gardeners and believers in plant therapy in order to create a database on ancestral medicinal practices able to help the less wealthy Latin American populations deal with health problems.

*Keywords: medicinal plant species, Cuba, traditional non-conventional therapies.*

## 1 Introduction

Traditional knowledge of medicinal and aromatic plant species is essential for the development of ecologically, culturally and economically sustainable urban and periurban systems. For approximately eleven years the Portuguese Tropical Research Institute (IICT) has been interviewing traditional healers, urban gardeners, periurban farmers, medicinal herb traders and plant therapists in Latin America, in order to assess usage of local resources and have built-up databases of local knowledge that might provide future generations with alternative ways to deal with health problems. Research also focuses on the socio-economic conditions required for the sustainable management of natural resources, in particular the native vegetable species. In relation to the usefulness of urban gardens, it is important to stress that soil cover reduces erosion and diminishes



air pollution whilst the utility of some species as food or medicine is beneficial for the households. In this paper, the term “medicinal plants” will be used to refer to those that have been chemically analysed having known pharmacological activity. It is hoped that such research will promote life quality and adequate medicinal herb management among urban gardeners and believers in plant therapy worldwide.

## 2 Methods

The sources of data were a sample of fifty interviews conducted in forty-seven households in two La Habana municipalities, Playa and Plaza de la Revolución, possessing front and backyards with the medicinal species which Cubans use to mitigate aches and pains, or even to cure more serious ailments. Additionally three herb traders have been observed extensively, and questioned using a semi-structured questionnaire, in order to access the healing species preferences among the residents of the Cuban capital city, for public health care institutions lack funding and conventional medicine treatments such as pharmaceutical drugs are often unavailable, resulting in the need for alternative herbal remedies. The sample was obtained during April 2009, consisting of random interviews to household gardeners who used the plant species for a wide range of ailments.

Table 1: The top ranking medicinal plant species cultivated in front and backyards.

Common name	Scientific name	Species characterisation	Plant part used	Medicinal application
Tilo or Tila	<i>Justicia pectoralis</i> Jacq.	Herb	Leaves	Tranquiliser, cough, flu, haemostatic
Manzanilla Cubana	<i>Isocarpha atriplicifolia</i> R. Br.	Herb	Leaves	Stomach aches, diarrhoea, eye infections
Aloe or Sábila	<i>Aloe vera</i> (L.) Burm. f.	Herb	Leaf juice	Skin infections, stomach ulcers, antiviral, anticancer
Oregano de la Tierra	<i>Hyptis Americana</i> (Aubl.) Urb.	Herb	Leaves	Flu, cough, ear infections
Menta	<i>Mentha spicata</i> L.	Herb	Leaves	Digestive, stomach aches
Romerillo	<i>Bidens pilosa</i> L.	Herb	Leaves, flowers, roots	Tooth aches, flu, cough
Salvia	<i>Salvia officinalis</i> L.	Herb	Leaves	Flu, stomach aches, tranquilizer, fever, diabetes
Caisimón	<i>Pothomorphe peltata</i> L.	Herb	Leaves	Diuretic, analgesic, anti-inflammatory, anti-tumour

Source: Fieldwork data obtained in Havana, Cuba (2009).



Local knowledge of plant biology has been sought together with the domestic prescriptions and other data related to its handling. In order to classify the medicinal plants (60 species) the scientific denomination was obtained in publications of Roig and Mesa [1, 2] and Fuentes and Grandas [3]. A summary of taxonomic and medicinal knowledge is provided in Table 1, which incorporates the eight top ranking species of those that have been researched in the field. Common names are in Spanish, exactly as they have been collected during the interviewing process, followed by the binomial that makes up the scientific name together with the abbreviation of those botanists who identified and classified the plant species.

### 3 Results

Cuban families use both cultivated and wild species, the rarest ones being purchased. Medicinal herbs are carefully planted in the gardens, kept in small window vases, taken from street shading trees and bushes. The collection of wild herbs in vacant neighbouring urban plots requires a certain amount of traditional knowledge that is usually confined to the elderly. The majority of the households interviewed (62%) in Havana, Cuba, contained at least one person over 60 years old, normally female, who was very keen to engage in detailed explanations of domestic prescriptions, sometimes transmitted from generation to generation. Tilo (*Justicia pectoralis*) was the most consumed and cultivated herb, an anti-flu and anti-stress species that grows to half a metre and is dispersed throughout the Caribbean islands. It has been given the common name of similarly utilized old world tree (*Tilia europaea*), even though it designates a local herb (see Fig. 1). Traditional Cuban domestic prescriptions recommend a concoction of the leaves, boiled for two to three minutes, and taken orally as a tranquilizer. A conventional medicine doctor interviewed in her home garden, Playa municipality, confided that she would rather have this relaxing tea than a chemical pill, for pharmacological tests have proved it does not provoke addiction nor has side effects. Smashed Tilo leaves mixed with honey also constitute widely consumed anti-cough syrup, in Cuba.

The second most abundant herb in front and backyards was Cuban Chamomile (*Isocarpha atriplicifolia*) a highly effective analgesic. Its single use is recommended to wash out the eyes in the case of conjunctivitis, or combined with Quita Dolor (*Lippia alba*), (curiously the most abundant herb in Belem, Brazil) and ingested to counteract stomach aches, indigestion and diarrhoea (see the photo in Fig. 2). Because Cuban families lack financial resources to buy cosmetics, several young mothers declared that they applied a concoction of Cuban Chamomile (*Isocarpha atriplicifolia*) in the case of baby rashes. *Aloe vera* followed, providing the most ingenious prescriptions collected so far. Cuban women freeze small portions of the Aloe's juice and administer it intravaginally. They also take the refrigerated preparations orally as domestic capsules against tumours and stomach ulcers, or use the fresh leaf stem juice to heal scars and skin infections.





Figure 1: Flourishing Tilo.



Figure 2: Manzanilla Cubana.

Mixed medicine and miracle herb, Oregano de la Tierra (*Hyptis Americana*) is fried in olive oil, smashed and filtered, then dripped into the ear, in case of pain. This traditional Cuban prescription has been obtained in a local kindergarten, gently made public by the 39-year-old director, who has shown the school “medicinal garden” (as she called it), and it has also been recommended by several grandmas interviewed in Havana (Fig. 3). One of those over 60-year-old ladies declared having tended medicinal species in her home garden since 1962, in a military personnel neighbourhood located in Playa municipality; she provided a series of ancient domestic prescriptions she and her family regularly used: Mint (*Mentha piperita and spicata*) concoctions consisting of a handful of leaves boiled for three to four minutes and taken orally with sugar cane against stomach aches and indigestion, particularly on Sundays, when the menu is incremented. Caisimón (*Pothomorphe peltata*) was tended in her backyard, and



Figure 3: 80-year-old Havana gardener. The container is full with water because the liquid is scarce in apartment buildings (Playa municipality).



Figure 4: Romerillo photographed in a backyard (Plaza de la Revolución, Havana).

it is a powerful anti-tumour and anti-inflammatory herb. Her husband consumed daily a cup of Caisimón concoction of three leaves boiled in water against prostate cancer, whereas she used the leaves of the same species, freshly applied in a towel on her kneecap to mitigate her aches.

Romerillo (*Bidens pilosa*) was the sixth herb found in Havana front and backyards, and it has been recommended mostly as an anti-flu. However, one quite original prescription provided by a 67-year-old male gardener consisted of the simple chewing of washed Romerillo leaves (see photo in Fig. 4) against throat pains and inflammation. *Salvia* (*Salvia officinalis*), introduced by Spanish colonisers, presented original domestic prescriptions based on tradition and superstition: two *Salvia* leaves should be placed at the bottom of a cup of tea, on the crucifix position, meaning one on top of the other in a perpendicular position, then boiled water was poured inside the cup and the infusion ingested very hot against fever, preferably outdoors for it is said to provoke spasms.

Results proved to be quite similar to those from other cities and metropolitan areas that have been investigated, starting with Belem (Brazil) in 1998 and 2005, followed by Santiago (Chile) from 2002 to 2005, Mexican Central Metropolitan Region in 2004 and 2006 and Lima (Peru) in 2006. In July 2009 another scientific mission to San Jose (Costa Rica) further enriched the Portuguese Tropical Research Institute's (IICT) Latin American database of traditional medicinal knowledge [4, 5]. Table 2 displays information about IICT's ongoing comparative investigation. A fundamental part of the work has consisted of research into ethno-botanic medicinal species, and the dissemination of those ancestral traditions that are still used by indigenous communities.

Native medicinal flora is widely cultivated in six Latin American metropolis' front and backyards, American species follow but biodiversity in the urban

gardens is rich and universal. One European healing species introduced by the Spanish colonisers is surprisingly the most consumed herb in half the investigated cities, frequently considered native for it has been used for several generations. That is the case with Manzanilla or chamomile (*Matricaria chamomilla* L.) in Lima, Peru and San José, Costa Rica, and Melisa (*Melissa officinalis* L.) in Santiago, Chile. Surveys obtained during the 1998-2009 research period included interviews with traditional healers, medicinal herb traders and plant therapists.

Table 2: Medicinal herb preferences obtained in six Latin American metropolitan areas.

Metropolitan Areas	Sample (N° of interviews or inquiries)	Common name	Scientific name	Origin
Central Mexican Region	155	Toronjil	<i>Agastache mexicana</i> kunth	Native
Lima	38	Manzanilla	<i>Matricaria chamomilla</i> L.	European
Santiago Metropolis	136	Melisa	<i>Melissa officinalis</i> L.	European
Metropolitan area of Belem	570	Erva-cidreira	<i>Lippia alba</i> (Miller) HBK.	Native
Havana	50	Tilo	<i>Justicia pectoralis</i> Jacq.	Native
San José	43	Manzanilla	<i>Matricaria chamomilla</i> L.	European

Source: Fieldwork data obtained during the 1998-2009 scientific missions.

Several widespread species are displayed in Table 3. Basil, Albahaca in Spanish, is as much appreciated in Cuban cuisine as it is in Mediterranean Europe. The fresh leaves are frequently sold on the streets in small trolleys, especially on Sundays, for it is usually necessary to cook the family lunch. It is a recognized antiseptic and blood pressure regulator though, and used as such both in Mexico and Cuba. Almácigo (*Bursera simaruba*) is a tropical American tree, about 20 metres tall, whose bark, leaves and roots are used in anti-flu concoctions and cataplasms. In Chile small wooden sticks extracted from the trunk are recommended for *sahumerios*, which are anti-disease and good luck house fumigations. Known as Jiñocuave or Indio Desnudo in Costa Rica, one small bark chunk per cup of tea is consumed after meals, a miraculous concoction taken to control diabetes in that Central American country.

Anis is recommended in digestive infusions, taken orally both before and after meals. The European herb can be found in front-yards, even in street vases located along apartment blocks, particularly in the municipality of Plaza de la Revolución, in Havana. In the beautiful Mexican city of Puebla, an assorted herbs tea has been collected, an old Aztec family prescription: one small handful of Anis leaves (*Pimpinella anisum*), mixed with a similar proportion of Chilean Boldo (*Peumus boldus*), Damiana (*Turneria diffusa*), European Alcachofra (*Cynara scolymus*), Mint and Manzanilla leaves (*Matricaria chamomilla*). The



concoction has been recommended for hepatic problems and it is an ideal example of the mixed European and Native American domestic remedies, obtained during the field research in Latin America. In Lima, Peru, the whole Anis herb is used in a tranquiliser infusion.

Bejuco Ubi (*Cissus sicyoides*) is a tropical American vine. Ingested concoctions of the leaves are recommended as anti-flu in Cuba, because of their anti-catarth properties. In Belem, Brazilian Amazon, anti-hypertension leaves infusions are taken orally or then the leaves are externally applied as anti-inflammatory. Caña Mexicana (*Costus spicatus*) is a recognized diuretic plant species. One third of a leaf is enough to provide a good concoction in Havana. In Amazonia the peasants use cataplasms of heated leaves of Canarana, the common name for the herb in Brazil, together with endemic Andiroba tree oil (*Carapa guianensis*) in order to mature kidney and bladder tumours.

Table 3: Medicinal species commonly found in the investigated Latin American countries.

Common name	Scientific name	Species characterisation	Plant part used	Medicinal application per country
Albahaca	<i>Ocimum basilicum</i> L.	Herb	Leaves	Indigestion, hypertension (Cuba), fever, antibacterial (Mexico)
Almácigo	<i>Bursera simaruba</i> Sarg.	Tree	Roots, bark, leaves	Flu, fever, indigestion, cataplasms (Cuba), house disinfectant, favours luck (Chile), diabetes (Costa Rica)
Anis	<i>Pimpinella anisum</i> L.	Herb	Whole herb	Indigestion, carminative (Cuba), stomach aches (Mexico), mild tranquiliser (Peru)
Bejuco Ubí	<i>Cissus sicyoides</i> L.	Climbing vine	Leaves	Cough, catarrh (Cuba), high blood pressure, anti-inflammatory (Brazil)
Caña Mejicana	<i>Costus spicatus</i> Roscoe	Herb	Leaves	Diuretic (Cuba, Brazil, Mexico)
Epazote	<i>Chenopodium ambrosioides</i> L.	Herb	Leaves and Flowers	Hepatic problems (Cuba), parasites (Mexico), stomach aches (Chile), anti-flu, tuberculosis (Brazil).
Hierbabuena	<i>Mentha citrata</i> Ehrh., <i>Mentha viridi</i> L.	Herb	Leaves	Stomach aches (Cuba), tranquiliser (Costa Rica), carminative, analgesic (Mexico)
Paraiso	<i>Melia azederach</i> Rauch	Tree	Whole plant	Diuretic, fever, strong narcotic, cataplasms (Cuba), scabies, gonorrhoea (Chile).

Source: Fieldwork data obtained in Havana, Cuba (2009) and in the other five countries investigated.



Epazote or Apazote (*Chenopodium ambrosioides*) is common to all the researched metropolitan areas, grown wild in Cuba. It is taken orally in digestive infusions and concoctions. The herb provides the best anti-parasites tea in Mexico, particularly recommended for young kids, but the leaves are frequently added to tortillas and other Mexican dishes used for their digestive properties. European Hierbabuena designates several *Mentha* genus species, and is again considered a good digestive. Aromatic, the herb is required to produce any *mojito*, traditional alcoholic Cuban drink with Caribbean rum. The leaves are also used to supply a tranquilizer concoction in Costa Rica, taken in case of insomnia before going to bed.

Last but not least, Paraíso (*Melia azederach*) was the most traded specimen in the La Habana Vieja trading posts that were studied, which is used in Cuba for cataplasms and septic baths and is recommended for a series of skin diseases, including ancestral conditions such as leprosy. Previous research undertaken on Easter Island [6] has revealed that Miro Tahiti (the common name for *Melia azederach* in the Pacific setting) was used in leaf infusions together with parsley, and is traditionally employed to cure gonorrhoea and scabies.

#### 4 Discussion

MacArthur and Wilson's [7] theory of island biogeography claimed that the number of species found in an isolated ecosystem was the function of the local species plus those gained through immigration and speciation minus those species that have gone extinct. Of course the immigration rate declines as a function of distance to other islands and continental masses, whilst diversification is greater on larger islands [8]. Cuba is the widest Caribbean island and it stands relatively close to both the other island systems and to the main North American continent, particularly the peninsula of Florida. Additionally, Cuba's northern coastline faces the Atlantic Ocean and the southern shores face the blue and green waters of the Caribbean Sea. Consequently taxa are quite rich and diverse within the whole Cuban island area, and in most instances the medicinal vegetable species that have been field researched are dispersed throughout the other Caribbean islands, which are chained at close range by sea currents, together with tropical and subtropical species also present in Florida and the Bahamas, that are spread by the trade-winds. The complexity of Cuba island biotas was enhanced with European, mostly Mediterranean, healing species introduced by the Spanish colonisers. Endemic therapeutic herbs are rare but native species are rather numerous, their common name being at times similar to completely different Mediterranean trees and bushes. Common names date from the early years of colonisation and have persisted because the given name was that of a European species that possessed matching medicinal applications. This fact constitutes a comparable result to research undertaken in Chile, Peru, Brazil, Costa Rica and Mexico, within the framework of local species and healing practises observed in Latin American metropolitan regions.



## 5 Conclusions

Cuban medicinal flora is dominated by a mixture of herbs and bushes, taxa being frequently Labiatae and Compositae. The plant parts used in infusions, decoctions and macerated preparations are chiefly the leaves. External applications vary more widely from concoctions of flowers and leaves to barks, latex and stem juices frictions (or pastes) and cataplasms. Comparing these results with published data from other investigations into Latin American front and backyard biodiversity, there is some variation in the ethno-botanic index, for the local species are abundant. Over 20 different families have been registered in the Cuban database. There is a good proportion of tropical American genus, including the dominant species from Brazilian and Peruvian Amazon Regions. Following the Caribbean varieties, Mexican medicinal flora constitutes the second most popular presence in Havana front and backyards. Contrary to initial expectations, African taxa proved to be of lesser importance, even though outlawed and highly repressed 'santería' practices have managed to survive.

Improvements to the database could result from additional Caribbean island scientific missions, aimed at establishing comparisons of the applications of the same plant species through the island group. Ongoing research on traditional non-conventional therapies is within the scope of the Geography of Heritage. The ancestral practices as the history of colonization are ways by which the past is evoked in and by contemporary society. The expectation is that more field research might be conducted by geographers, botanists, pharmacists and anthropologists so as to permit the full recovery of domestic prescriptions in Latin America, because health is a universal right.

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