Out of Latin America: Medicinal Herbs Production, Trade and Consumption in Chile and Mexico

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Abstract
Medical traditions from the New World have largely contributed to ameliorate European pharmacopoeia with native medicinal herbs, from the fifteenth century onwards. Medical knowledge evolution, based on chemicals, together with recent biology and genetic sciences discoveries, increasingly led by technological advances, tend to minimise that historical contribution. Still, new chronic diseases treatment and evolving healing conceptions are more likely to be less critical to the old ways, via alternative medicines, the same way patients seek for viable alter complements than pills to restore their well being. This search is particularly evident within Latin American populations currently under study by means of comparative ethnogeography and ethno-botany projects, aiming home gardens in Santiago, Chile and the Mexican capital city. Indian descendants are recognised for their faith on ancestral therapeutics, ranging from plant-therapy, animal secretions, and healing powers of medicine men and women. Culture, religion and old cosmological beliefs quest is thus quite imperative to fully explain local options in a global standardised world, where public health is organised and universal medical assistance sought. In order to further understand dynamics and conflicts in medicinal herb production, transportation and trade chains inside great metropolitan areas, the team has been sample researching central urban and gross peri-urban markets, whilst targeting vegetables with double purposes. That’s the case with Chenopodium ambrosioides for instance, commonly named Paico in Chile and Epazote in Mexico. The herb has wide usage both as food and medicine, for its benefices as a digestive and proved anti-parasites effect. The work is part of a Portuguese Tropical Research Institute interdisciplinary search for ancestral healing and palliative traditions targeting Latin America, along with determined in situ preservation efforts backed by ex situ genetic reserves conservation, which includes live plant collections available for reintroduction into damaged habitats as well as future medical and pharmaceutical applications.

2 Scope and Methods
The main healing source is food needed for daily sustenance because it provides us as much caloric rations as natural vitamins and mineral supply. All components are indeed vital for welfare and health and therefore equilibrium in regular meals is halfway for a good life. Under that rationale herbs and fruits commonly used as food and medicine are twice advisable for human kind. They are known as nutraceuticals, usually herbal products sold as foods or food supplements, and have given way to a brand-new industry, market oriented towards consumers concerned with the expensive, high-tech, disease-treatment approach predominant in modern medicine. Traditional pharmacopoeia has contributed to improve therapeutic knowledge and is still in use, as active are ancestral health care providers even in urban milieus of Latin America. Medicinal plants usage is no matter for concern, providing their chemical constituents are known
and toxicology tested, making the specimens internal applications safer and building confidence on manipulation by the general public (ROSS, 2003).

In order to further understand dynamics and conflicts in medicinal herb production, transportation and trade chains inside great metropolitan areas, an international team has been sample researching central urban and gross peri-urban markets, whilst targeting vegetables with double purposes – food and health. Surveys incorporate urban and peri-urban farmed plots, for domestic medicine far outweighs traditional healers and conventional medical assistance in less developed countries. The work is part of a Portuguese Tropical Research Institute interdisciplinary search for ancestral healing and palliative traditions aimed at Latin America, within an urban agriculture study alias eco-city framework, along with determined in situ preservation efforts backed by ex situ genetic reserves conservation, which includes live plant collections available for reintroduction into damaged habitats as well as future medical and pharmaceutical applications (MADALENO & GUROVICH, 2004).

Surveys undertaken in Chile include 111 inquiries to micro-farmers in peri-urban Santiago and additional 25 interviews to medicinal herbs traders and medicine men. An open questionnaire was used equally to sample research Santiago and Mexico City, intended to make comparisons viable to the end of the project. Formal commerce statistics available were departure tools on data collection inside the capital cities (ODEPA, 2002). Even though field research process in Mexico is incomplete, for Mexican metropolis is 3 times bigger than Santiago and registers considerable street trade, the author has conducted personally 100 enquiries and 23 interviews, results being thus far so prolific that the international team realised discussion with fellow scientists in ethno-botany, ethno-geography and related fields should be initiated. Ongoing investigation focuses the popular ways to deal with pain and chronic diseases, which in both case studies led to medicinal herb cultivation and trade assessment, using a double criteria: 1. The most produced and traded herbs; 2. Natural medicines used to cure eye diseases or mitigate aches caused by cancer, diabetes and arthritis. Regarding fruit production, the team is spotlighting tropical and subtropical species consumed, with recognised curative powers.

3 Research Results
Chile possesses the wealthiest economy in Latin America and therefore it was no surprise to discover frequent usage of fresh medicinal herbs to be less important than in Mexico. Pharmaceutical industry and modern medicinal knowledge are quite developed in Santiago metropolis, as is homeopathic prescriptions manufacture, in fashion these days. By contrast Mexico City doesn’t have such good health care system and doesn’t produce as many chemical pills as it’s southern counterpart, but Indigenous cultures are far more influential, being particularly bountiful that the international team realised discussion with fellow scientists in ethno-botany, ethno-geography and related fields should be initiated. Ongoing investigation focuses the popular ways to deal with pain and chronic diseases, which in both case studies led to medicinal herb cultivation and trade assessment, using a double criteria: 1. The most produced and traded herbs; 2. Natural medicines used to cure eye diseases or mitigate aches caused by cancer, diabetes and arthritis. Regarding fruit production, the team is spotlighting tropical and subtropical species consumed, with recognised curative powers.

It’s quite illuminating though to realise how much religious and cultural traditions can endure, no matter how much repression they are submitted to. Having Mapuche Indians migrated in waves
to Santiago, especially from the 1950’s onwards, it was no surprise to find out that 42% of the most traded species in gross and central markets, as herbal businesses, came from their ancestral knowledge and recommended healing practices. Canelo (*Drimys chilensis*), the sacred Indian tree, was top 10 in plant-therapy commerce ranking, whereas Cedrón (*Lippia citriodora*) and Paico (*Chenopodium chilense*) are classified respectively second and seventh in terms of home garden cultivation. Elder Mapuches still consult the *machi*, usually a female but sometimes a male, whose knowledge about curative herbs is transmitted from mother to daughter or to another close relative, because to be repository of health-giving traditions one has to be compassionate; Mapuches value the role of server rather than the character of saver.

Endemic Andean species consumption is widespread in Chile. One of the most beautiful and resourceful species is *Azorella compacta*, named Llareta in Spanish, which grows in the rockiest environments above 4,000 metres. Flowers, roots, seeds have medicinal purposes in infusions to reduce diabetes crisis, but also to ease cough and purify the kidneys. The thick oil Llareta produces besides having sacred functions in ancestral religious Aymara Indian celebrations, (the second ethnic group in the country), literally called plant crying, is externally applied in body cloths for bone therapy, both for animal’s broken limbs or swollen human parts, in particular against backaches (VILLAGRÁN & CASTRO, 2004).

For miraculous cancer cures recommendations vary from *Aloe vera*, used in Chile as in Mexico, to the European species Llantén (*Plantago major*), not to forget Peruvian Uña de Gato (*Uncaria tomentosa*), ending in precious yet not always proved beneficial endemic plants. In Chile, Diego de la Noche (*Oenothera stricta*) is a wild one-meter tall reference, consumed orally and used externally. In Mexico, skin cancer advice goes to Cancerina whilst stomach or other types of digestive apparatus tumours are allegedly healed with the so-called cancer herb (*Cuphea aequipedata*). Aloe is, however, the most universal recommendation. The ongoing interdisciplinary research found skin diseases, particularly eczemas and dry skin, to be quite effectively treated with the viscous leaf juice of Aloe, alone or combined with honey. Its antiseptic power is tested and juice can be used for washing wounds. The therapeutic is considered superior to avocado fruit pulp (*Persea Americana*), regarding skin hydration and therapy while Aloe’s healing powers in case of tumours remain controversial. *Aloe vera* is native to the Mediterranean region and is now scattered all over the world. The succulent leaves fresh juice when taken orally is febrifuge, recommended for diabetes in Mexico (ROSS, 2003).

**Table 1: Southern Santiago Nutraceuticals Production, Chile**

<table>
<thead>
<tr>
<th>Sample data</th>
<th>Micro-Farms</th>
<th>Las Rosas</th>
<th>Mapuhue</th>
<th>José Maza</th>
<th>Total or Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Plots</td>
<td></td>
<td>189</td>
<td>322</td>
<td>493</td>
<td>1004</td>
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<tr>
<td>Human Density (inhabitants/ha)</td>
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<td>11.89</td>
<td>6.88</td>
<td>10.23</td>
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<td>Number of Interviews</td>
<td></td>
<td>21</td>
<td>40</td>
<td>50</td>
<td>111</td>
</tr>
<tr>
<td>Farming under 1/3 plot surface (%)</td>
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<td>80.1</td>
<td>77.5</td>
<td>82.0</td>
<td>80.1</td>
</tr>
<tr>
<td>Medicinal herbs production (%)</td>
<td></td>
<td>62.0</td>
<td>35.0</td>
<td>60.0</td>
<td>52.3</td>
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<tr>
<td>Fruit culture with healing powers (%)</td>
<td></td>
<td>71.4</td>
<td>50.0</td>
<td>74.0</td>
<td>65.1</td>
</tr>
</tbody>
</table>

Source: 2003 & 2005 surveys

Table 1 resumes information about 0.5 to 1 hectare agro-residential plots investigated in Southern Santiago municipality La Pintana, the year 2003. Recently the team further interviewed micro-farmers engaged in medicinal herbs and fruit cultivation, priority given to nutraceuticals. In terms of fruit culture, landowners and caretakers close examined declared to consume some fruits
conscientious of their double nutritious and curative power. The most numerous and appreciated fruit is indeed avocado, cultivated in 36% plots surveyed by joint Portuguese-Chilean team. Decoction of leaves is taken to treat diarrhoea and in the morning after breakfast for anaemia. Plus avocado fruit pulp is recommended in Chile as in Mexico for the high caloric value (980 calories in one single pear) having rich vitamins supply. Earlier research conducted in Brazil, found the fruit tree to be fifth in Belen and first in Manaus home gardens, the most populous Amazon cities (MADALENO, 2002).

Furthering nutraceuticals production, Chenopodium ambrosioides, commonly named Paico in Chile, Mastruz in Brazil and Epazote in Mexico, is a very nutritious herb traded in gross markets. As food the leaves range from spice to cooking supplement in omelettes, tortillas, and alias, being recommended as medicine either for proven benefits as digestive and anti-parasites effect. Allegedly leaves infusion cures malaria. Used in quantity Epazote might intoxicate. Ocimum basilicum is another herb common to Latin American urban gardens and one of the top twenty medicinal herbs sold in Mexico City markets, used as spice in any kitchen too. Handled in infusions, scarce 30 grams are enough for a litter of boiled water, frequently applied against fever and to cure headaches.

Last but not least arthritis is treated in Santiago with European Romero (Rosmarinus officinalis) and Zalzparilla (Herreria stellata), a Chilean native species. In Mexico, Indian healing tradition favours Tepozán (Buddleja Americana) and Toloache seeds (Datura stramonium). As to eye diseases, Chicalote (Argemone mexicana) is the wonder Aztec herb. These species are usually collected by women over Popocatepetl volcano slopes and sold on the streets, regularly around Sonora market, central Mexico City. Their cultivation is forbidden due to high toxicity, applications suggested being external (OCHOA and ALONSO, 1996).

4 Conclusion and Recommendations

Medicinal herbs production in Santiago as in Mexico City doesn’t necessarily coincide with trade in formal and informal markets. Species consumed are sometimes imported from abroad or from other provinces. In case of the Chilean capital the team found the most traded herb to be European Melissa whereas the most produced in home gardens is Peppermint. In Mexico City, Toronjil (Agastache mexicana) leads as the most consumed infusion. Surprisingly the native plant leaves have exactly the same therapeutics as Melissa. Recommendations are to pursue research in Peru and Brazil, following the path of imported nutraceuticals, fruits and herbs, using the same methodological process: i) local statistics examination, as starting point; ii) inquiries to medicinal herb traders; iii) inquiries to urban gardeners and peri-urban farmers; iv) interviews to selected actors, namely traditional healers; v) Specimens botanical identification; vi) Receipts and therapeutics comparison.

References


