

# FOOD AND MEDICINAL PLANTS CONSUMED IN MANILA, THE PHILIPPINES

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## ABSTRACT

The Portuguese navigator Magellan discovered the remote Asian archipelago at the service of the Spanish King, in 1521. The 7100 islands named the Philippines have a wide extension from 4° to 21° north of the Equator. They are located between the Moluccas, China and Japan, and were expected to possess abundant spices, silk, cotton and gold. To discover the archipelago Magellan travelled through the Pacific Ocean, trying to find alternative ways to the Portuguese maritime route of the Cape of Good Hope, in order to travel to the Eastern Indies and trade spices. The paper compares the flora mentioned in 16th and early 17th century manuscripts with the food, spices and medicinal plants consumed in Manila, in our days, so as to explore the contemporary uses of local and exotic flora and perceive how they evolved since the early European colonisation times. The survey conducted in Manila included fifty interviews to three focus groups: 1) the tenders of a public-school food garden; 2) forty-eight informal and formal food, spice and medicines traders; and 3) a massage therapist. Results show that a total of 134 plant species were in use in 2015, of which 51.5% have therapeutic indications. The expectation is to establish the evolution in flora trade and consumption in this coastal city and to present examples of alternative food and medicinal flora that might be used by low income populations elsewhere.

*Keywords:* Manila, Philippines, capital, medicinal, plants, alternative, consumption, history, geography.

## 1 INTRODUCTION

Asia is the leader in city development, as the continent accounts for some of the most populated urban agglomerations in the world [1], [2]. This paper examines the trade of food and medicinal plants in the capital of the Philippines, Manila, where east and west meet. In fact, Spanish colonisers and missionaries influenced the culture and the religion of the Filipinos from the 16<sup>th</sup> century onwards, introducing new food habits and exotic medicines. Because the maritime route they used was the Pacific Ocean, most fruits, tubers, and roots consumed to our days are native American.

However, long before the Europeans “discovered” the islands, Chinese and other Asian peoples left their in-print in Filipino culture. As Hashimoto and Telfer wrote in their study about Canada, “the notion of national identities being based on a singular culture within the state boundary has been challenged” [3, p. 32]. This contribution shows how the history of the archipelago has shaped food and herbal medicine consumption, as multiculturalism is part of the Filipino nation identity. The research hypothesis is that lower-income stratus of society tend to seek for food in informal businesses and to solve mild health problems with herbal remedies.

## 2 STUDY METHOD AND MATERIALS

The research process was two-fold and similar to other case-studies developed in Asia [4]:

1. Archival examination of manuscripts from the early years of Spanish colonisation, authored by Jesuit priests: i) Father Sedeño, who was also an architect that described local flora in a letter to his superior in Rome [5]; ii) Father Chirino later wrote



extensively about the food, spices, ornamentals and medicines consumed in the early 17<sup>th</sup> century [6].

2. In-depth interviews to three categories of informants, resident in the city of Manila, in 2015: i) Teacher and director of a public school, where a food and health garden provided the children the possibility of growing vegetables, learning ecology altogether; ii) Forty-eight formal and informal traders of fruits, spices, tubers, roots and herbal preparations [7]; iii) one massage therapist, which healing processes involved the use of creams, lotions, oils and herbals.

The choice of materials used to analyse the evolution of food habits that permitted to identify the native and the exotic plant species introduced by the Europeans was done using the archives of a Catholic religious order that throughout times has been registering everything, from the number of indigenous peoples they converted, to how they lived, what they ate, how they dressed, as well as their own daily routines. Again, we stress to have used the Jesuit archives in the research of the medicinal flora consumed or applied during Renaissance, so as to determine the origin of the species and to compare their uses [8].

The focus groups used to examine local food, spices, and the medicinal flora consumed or applied in modernity, included a school garden because that's one of the strategies utilised to promote new lifestyles, meaning, to incorporate agriculture and food in school curricula [9]. As climate change is having increasing importance in island countries, because of the devastation it causes, the promotion of city resilience becomes a necessity. The interviews were semi-structured and dealt with the number of vernaculars, the plant species and their uses, divided into three categories: the food, the spices and the medicines. Flora included in the first category was again divided into three sub-categories: the fruits; the staples; and the vegetables.

Categorisation is not simple as nutraceuticals, meaning, plant species both consumed as food and used for therapeutic purposes are a challenge. Whenever herbal preparations, lotions, creams and massage oils were involved, all the native and exotic flora that composed the medicine were registered. In order to identify the vernaculars we have accessed scientific literature [10]–[13], as well as the Missouri Botanical Garden database, where the most recent taxa are available [14].

### 3 RESULTS AND DISCUSSION

#### 3.1 Urban gardens

Recent literature presents examples of pro-active ways to deal with natural catastrophes, such as hurricanes, using a transformational perspective focused on city vitality. That's the proposal of Gaston Remmers using the case-study of the city of Almere, located in The Netherlands [9]. Under that new approach, the food and health garden tended by students in a Filipino public school is an action-habitat that shows there is a rising culture of sustainability in Manila. Additionally, gardening creates bonds and good feelings towards nature, a Swedish sociocultural notion of having interest for the environment, called *naturintresse* [15]. Fig. 1 and Fig. 2 display some of the school garden species, such as: cassava, a staple food; eggplant, a vegetable consumed as food; and oregano, a medicinal leaf that is squeezed and the juice eaten against cough, asthma and bronchitis.

This school garden project is part of a wider program aimed at children, adopted in the aftermath of the Asian financial crisis, after 2001. It was provided by the government of the Philippines, under financial support of the World Bank and the Australian Agency for International Development [16]. The Philippines' Pantawid Pamilya Pilipino Program—





Figure 1: Cassava and eggplant.



Figure 2: Oregano—school garden.

a conditional cash transfer program—aims among other objectives to improve gender equality and female education. According to government agencies: In “August 26, 2015, there were 4,353,597 active household-beneficiaries, of which 570,056 were indigenous households. The program also covered 10,235,658 schoolchildren aged 0 to 18, from the total registered with an average of two to three children per household” [17].

The small sample gathered in Manila didn’t include allotment gardens. However, literature on the issue of urban agriculture has been quite informative about the existence of peri-urban vegetable projects in the Southern Philippines, in Cagayan de Oro City, a joint government and Xavier University concept aimed at community groups and intended to benefit the urban poor [18]. The Ecological Solid Waste Management Act (RA 9003) introduced in the country, decentralises solid waste management facilitating recycling and composting, so as to induce more sustainable living practises.

### 3.2 Food and nutraceuticals

Informal street trade proliferates in Manila, as elsewhere in Asia [19], which is part of the culture of visibility, accessibility and proximity to the customer in oriental cities and metropolitan agglomerations. In similar Indonesian cities, Kota Kita, stressed that “mobile vendors can control their location and visibility by moving to strategic areas, whereas vendors in purpose-built markets are tied to specific locations and lose flexibility [19, pp. 16–17]. Relationships with the urban clientele are easier to establish, as bargaining is admissible and thus the low-priced fruits, vegetables, spices, staples and medicines become accessible to a large array of less-wealthy customers.

This is so vital for informal businesses that subsist on the basis of a small income as it is for formal food and medicines shops. In Manila, formal entrepreneurs frequently display fruit stands in front of their shops, so as to attract the public with their daily offer. Fig. 3 and Fig. 4 present a couple of food-stalls from local China-town. Manila central districts have little more than 1.6 million inhabitants, presenting a diversity of neighbourhoods ranging from the old-Spanish *intramuros*, to the poor Pasig river margins, or the rich and noisy Chinese area [20].

As to the food, spices and medicines traded and gardened in Manila, the 2015 survey accounted for 140 vernaculars, of which we’ve identified 134 different plant species, ranging from the Asian Luya or Ginger (*Zingiber officinale*), both consumed for therapeutic purposes



Figure 3: Informal offer of pomelos.

Figure 4: Star apples in front of a shop

and as spice [20], to the American camote (*Ipomoea batatas*), food and medicine, or even the yacón (*Polymnia sonchifolia*), and the sayote (*Sechium edule*) eaten to control sugar levels in diabetic patients [7], [13]. Table 1 presents ten of the fifteen vernaculars mentioned in the manuscripts authored by Jesuit priests [5], [6]. *Cinnamom cassia* was the sole species not found during the scientific mission to The Philippines, as local cinnamon is no longer as vital for trade as it was during the 16<sup>th</sup> and 17<sup>th</sup> centuries. Nevertheless, the plant list demonstrates that most flora preferred in modernity was already in use in the beginning of Spanish colonisation. The second remark is that corn and soursop, as the mentioned sweet potato, chayote or sayote, and yacón have been introduced from the American continent in Renaissance times.

Agriculture is now dependent on a handful of grains (such as rice, corn and wheat) and just a few animals that predominate as food offer worldwide. This homogeneity is a threat, both to food security and to crop yield as there is greater susceptibility to pathogens [21]. On the one hand it is quite rewarding to observe that the fruit, tuber, root, spice and medicinal plant trade is quite diverse in Manila, but on the other hand there is preference for such fruits as the apples, and the lemons (11 occurrences each) impairing them with ginger, the preferred medicine and spice. Dealing with climate change will require to further diversify food supply, to make agricultural crops more biodiverse, but above all to increase technical and scientific research on native species that have been despised.

Table 1 contains only ten vernaculars consumed in the early days of European colonisation. However, it also shows that the quite wise trend of introducing new flora has been halted. This trend should be changed and attention should be focused in unknown Andean plants such as yacon, the anti-diabetic nutraceutical so early disseminated that most urbanites simply never heard of (see Fig. 5). Other American plants such as quinoa [22], for example, survive at any altitude, and tolerate salinity, which makes viable irrigation with salty water. As stated by Altieri et al., “a diversity of species acts as a buffer against failure due to environmental fluctuations, by enhancing the compensation capacity of the agroecosystem, because if one species fails, others can play their role” [21, p. 7].

As the school garden is available and tended by young children, possessing oregano as cassava (another American native produce), mustard and malunggay (*Moringa oleifera*), it is expected that future Filipino generations will diversify their consumption and be more open to new varieties of food, spices and therapeutic plants. Native Asian citrus species are already remarkable, as noted with the Calamansi (*Citrofortunella microcarpa*). Yet such species as the bamboo are not as sought after as they were in Renaissance times. Noteworthy, mangoosteens (*Garcinia mangostana*) and melons rival as preferences with the apples, presenting 9 occurrences each, but star apples (see Fig. 4) are less consumed.

Nutraceuticals such as soursop (Table 1) are still consumed for their nutritious role and for the medicinal properties of the fruit, imported from the Americas to the Philippine Islands, as said. Guava (*Psidium guajava*) is consumed against dysentery, diarrhoea, constipation, cough, cold, applied for skin care, eaten against high blood pressure, for weight-loss, and even recommended in case of scurvy. Applied in relaxing massages, it is another American fruit the Spanish colonisers took with them from New Spain (Mexico). More recent imports are medicines such as Pau d'Arco (*Tabebuia impetiginosa*), called *Taheebo tea*, a detoxifying drug and Açaí (*Euterpe oleraceae*) from the Brazilian Amazon Region, anti-oxidant berries that lower sugar levels in diabetic patients [20].

Table 1: Species collected in Manila and their uses in the 16<sup>th</sup> and 17<sup>th</sup> centuries. (Source: [5], [6]; Author's survey, 2015.)

Vernacular name (English)	Scientific name	Old uses	Contemporary uses	N
Bamboo	ARUNDINARIEAE	Food	Expectorant shoot	1
Banana	<i>Musa paradisiaca</i> L. MUSACEAE	Food	Food	7
Camote Sweet potato	<i>Ipomoea batatas</i> (L.) Lam. CONVOLVOLACEAE	Food	Food and Medicine: Anti-diabetes (leaf)	9
Cinnamon	<i>Cinnamomum cassia</i> (L.) C. Presl. LAURACEAE	Medicine	Not found during survey	-
Coconut	<i>Cocos nucifera</i> L. ARECACEAE	Food	Food and Medicine: Hair beautification and sexual lubricant (oil)	3
Corn	<i>Zea mays</i> L. POACEAE	Food	Food and Medicine: Anti-rheumatic (leaf)	8
Guayabano Soursop	<i>Annona muricata</i> L. ANNONACEAE	Food	Food and Medicine: Antioxidant, antidiarrheal anti-fever, indigestion, insomnia, bladder	6
Oranges	<i>Citrus sinensis</i> (L.) Osbeck RUTACEAE	Food	Food	6
Pomelo Shaddock	<i>Citrus maxima</i> (Burm.) Merr. RUTACEAE	Food	Food	7
Rice	<i>Oryza sativa</i> L. POACEAE	Food	Food and medicine: antiulcer, antidiarrheal, hyperacidity	1

### 3.3 Medicinal flora trade and applications

Regarding medicinal plants most Filipinos prefer to buy in local Chinese shops, as the preparations are both quite cheap as compared to conventional pharmacies, and because they can ask for advice on how to cope with any affection. Fig. 6 shows a passage way from China



Town, with the therapeutic offer open to the general public and not only to the Chinese community. One can find also Japanese and Korean drugs there, and teas from Taiwan. Species like Buckthorn Bark (*Rhamnus frangula*) are recommended against constipation; so-called Burdock Taiwan Root (*Arctium lappa*) is a purging tea and one can also simply eat the root; the Alisma rhizome (*Alisma orientale*) is an anti-flu preparation; Bignay or Chinese Laurel is one of the preferences in Manila, as it is an anti-cancer and anti-diabetes plant species (*Antidesma bunius*), also consumed in infusions against hypertension; and the Chinese Bell-Flower (*Platycodon grandiflorus*) is a very good expectorant, as well as bamboo shoots.

Other Asian continent imports are: Sili or Alubati (*Piper nigrum*), which powdered leaves are applied against burns; Camphor (*Cinnamomum camphora*) is applied against mosquito bites as anti-itching balm; Fritillaria bulb (*Fritillaria cirrhosa*) is part of a expectorant Chinese herbal preparation; Gambier (*Uncaria gambier*) is recommended against diarrhoea; Ginkgo biloba is the known memory enhancer; Lawat (*Litsea glutinosa*) is applied to the scalp against hair loss; Nigella seed (*Nigella sativa*) is infused against asthma, allergies, migraine, and consumed for liver problems, besides being applied to ease rheumatic pains. The root of serpentine (*Rauwolfia serpentina*) mentioned in the 16<sup>th</sup> century book of the Jewish-Portuguese doctor Garcia da Orta [23], about the drugs in use in India, was recommended against fever, as antimalarial and used to cure snakebites. The so-called Indian Snakeroot is nowadays recommended in Manila against cancer. Another virtuous Renaissance species is Licorice (*Glycyrrhiza glabra*) consumed against indigestion and diarrhoea. In India, in the 16<sup>th</sup> century the sap was consumed as aphrodisiac.

It has to be stressed that there are native Philippine medicines in use in Manila. For example, the leaf of the local variety of pandanus (*Pandanus tectorius* fo. *Philippinensis*) is infused as antioxidant and hypoglycaemic. For treatment of diabetes, cancer, jaundice, kidney inflammation, and fever the recommendation is banaba tea (*Lagerstroemia speciosa*), the leaf and the fruit of the tree being edible. It gives beautiful lilac purple flowers and tea bags are already manufactured in the Philippines and sold to tourists in shopping centres, because the product is considered valuable and viable export. Another plant species that grows everywhere is Lagundi (*Vitex negundo*), recommended against diarrhoea, pharyngitis, flu, cough, asthma, fever, dyspepsia, and rheumatism. It is in fact a tropical species that also grows in Africa. Orta called the species negundo and registered its recommendation against rheumatic pains [23].



Figure 5: Yacón, and other staples.



Figure 6: Chinese medicines—Manila.



Sambong (*Blumea balsamifera*) teas are also manufactured in the Philippines, the leaf infusion is recommended against colds and to lower blood pressure. Tana-Tana (*Grammatophyllum scriptum*) leaf cures boils and the bark is applied against joint pains. Akapulko is another virtuous species grown everywhere in the islands (*Cassia alata*); the leaf has strong anti-fungi properties and it is applied against athletes' foot and other infections of the skin. It is not Asian, however, but Mexican, and it was so well adapted to the Philippines that they consider the plant to be their own [24]. In Mexico, they call Herpes Herb to this bush [25]. In general, native Asian species followed by the Americans dominate, whereas European plants are less numerous, in Manila.

#### 4 CONCLUSION

The right to adequate food is recognized in article 25 of the Universal Declaration of Human Rights [26]. Results presented confirm the research hypothesis that the urban poor in Manila tend to seek the solutions for their food and health demands in informal businesses and cheaper herbal remedies shops. Manila is a coastal city with 1,660,714 inhabitants in its metropolitan core [20], the old neighbourhoods being divided by the polluted Pasig River. Alternative medicines are usually the option for lower income households and even though a good array of plant species from the New World, the Americas, have been introduced by the Spanish from the 16<sup>th</sup> century onwards, preserving altogether their original vernacular designation [7], most herbal preparations traded in our days are Asian, as Chinese natural pharmacies are preferred by the less wealthy Filipinos, in Manila.

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