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Philippine Cinnamon

IMPORTANT LESSER-KNOWN FOREST RESOURCE



CINNAMON

The industry of natural health products and functional food is now one of the world's fastest growing industries. Due to prevalence of lifestyle and diet-related diseases, the demand for healthy and high quality food and care products increased. Potential sources of these kinds of products can be abundantly found in the Philippines, such as the cinnamon trees.

CINNAMON is a known medicinal herb and spice that lowers cholesterol and prevents heart diseases and diabetes. It contains vitamins and micronutrients, as well as several antioxidants. In addition, cinnamon plays a significant role in local industries for food flavorings and other related products. Cinnamon is derived from the ancient Hebrew word 'kinnämön', which in turn probably originates from the Malay or Indonesian term 'Kayumanis', meaning 'sweet wood'.

Globally, there are more than 250 species of cinnamon distributed worldwide ranging from tropical and subtropical Asia, to South and Central America, and even Australia (Wuu-kuang, 2011). There are around 25 known species of *Cinnamomum* in the Philippines, of which 18 are endemic or only found in the country. Cinnamon

occurrence report showed that Philippine cinnamon trees grow within a range of elevation gradient, specifically from as low as 300 masl (*C. mendozae*, Batuan, Agusan del Norte) to as high as 2,000 masl (*C. loheri*, Mabiluang, Rizal province; *C. perglabrum*, Bayanihan, Benguet) (Kostermans, 1986). Cinnamon species are characterized by trinerved and fragrant leaves and paniculate inflorescences. Flowers have nine stamens and has drupaceous fruits set on top of thick, cuplike receptacle.

Cinnamon exploration and utilization has a deep history in the Philippines. Cinnamon has been produced and traded in the country since the 1500's, but compared to commercially known cinnamons from other countries, the Philippine cinnamon is less studied and explored for utilization. However, there is a promising prospect for the development of the Philippine cinnamon as a sustainable forest-based livelihood. A number of endemic cinnamon species can be utilized and processed into different by-products.

The Forest Foundation Philippines has supported the Forest Products Research and Development Institute (FPRDI) in the development of this information material to promote the sustainable utilization, processing and marketing of Philippine cinnamons.

TAXONOMY OF CINNAMON

Family: LAURACEAE (2,500 species and 50 genera distributed globally)

Genus: *Cinnamomum* (250 species distributed globally; 25 species reported in the Philippines)



LEAVES AND FRUITS OF CINNAMON

List of *Cinnamomum* Species in the Philippines

1. *Cinnamomum anacardium* Kosterm.
2. *C. burmannii* (Nees & T. Nees) Blume*
3. *C. camphora* (L.) J Presl
4. *C. cebuense* Kosterm.
5. *C. celebicum* Miq.
6. *C. ebaloi* Kosterm.
7. *C. griffithii* Meisn.
8. *C. lanaoense* Kosterm.
9. *C. loheri* Merr.
10. *C. iners* Rein. Ex Blume
11. *C. mendozae* Kosterm.
12. *C. mercadoi* Vid.
13. *C. myrianthum* Merr.
14. *C. nanophyllum* Kosterm.
15. *C. oblongum* Kosterm.
16. *C. oroi* Quisumb.
17. *C. panayense* Kosterm.
18. *C. pedunculatum* Nees
19. *C. perglabrum* Kosterm.
20. *C. rupestre* Kosterm.
21. *C. sancti-caroli* Kosterm.
22. *C. sandkuhlii* Merr.
23. *C. tricophyllum* Quisum. & Merr.
24. *C. utile* Kosterm.
25. *C. verum* J Presl

* synonym *C. mindanaense* Elmer

MARKET AND PROSPECT

In 2016, global sales from cinnamon exports was valued at US\$484 million. Cinnamon is used in a variety of purposes, from food production, to medicinal purposes, and even as ingredients in natural health and beauty products. By source, the world's cinnamon requirements come from only fifteen countries. Collectively, these countries account for about 96.5% of global cinnamon exports.

In the Philippines, commercial harvesting, utilization and processing of cinnamon is practiced in selected areas only. In 2011, the country imported 29,000 kilograms of cinnamon valued at US\$92,000, while exported 6,000 kgs valued at US\$23,000.

There is promising prospect for the development of the Philippine cinnamon as a sustainable forest-based livelihood. The demand for cinnamon, both in the local and global market, is expected to continue as cinnamon-based products grow and more uses of cinnamon are discovered.

Of the 25 cinnamon species present in the Philippines, there are three commonly known species with economic importance:

- (a) *Cinnamomum cebuense* Kosterm
- (b) *C. mercadoi* S.Vidal
- (c) *C. burmannii* (Nees & T. Nees)
Blume syn. *C. mindanaense* Elmer

GLOBAL CINNAMON EXPORTS, 2016

Country	Export Value (US\$ million)	Percentage Share (%)
1. Sri Lanka	159.1	32.9
2. Indonesia	94.2	19.5
3. China	91.5	18.9
4. Vietnam	71.9	14.8
5. Netherlands	10.3	2.1
6. United States	8.3	1.7
7. Germany	7.2	1.5
8. France	6.2	1.3
9. India	4.8	1.0
10. Madagascar	3.7	0.8
11. Austria	3.1	0.6
12. United Kingdom	1.9	0.4
13. Singapore	1.7	0.4
14. Mexico	1.7	0.3
15. Sweden	1.6	0.3
Other countries	16.95	3.5
TOTAL	484.15	100.0

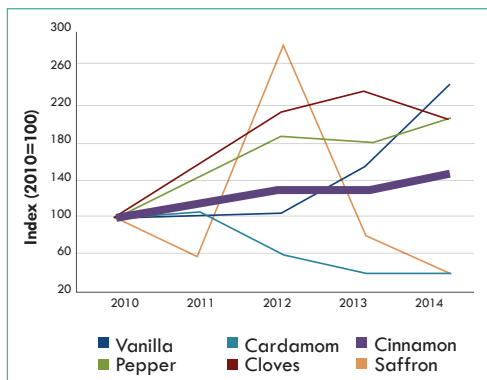
(Source: <http://www.worldtopexports.com/cinnamon-exporters/>)

PHILIPPINE IMPORT-EXPORT DATA ON CINNAMON, 2002-2011

Year	Import (kg)	Value (US\$)	Export (kg)	Value (US\$)
2002	29,730	44,349		
2008	51,000	72,000		
2011	29,000	92,000	6,000	23,000

(Sources: FTSP 2002, FAO Stat 2008, FAO Stat 2011)

EU IMPORT OF SPICES FROM DEVELOPING COUNTRIES SHOWING THE STRONGEST FLUCTUATIONS, 2010-2014



(Sources: FTSP 2002, FAO Stat 2008, FAO Stat 2011)

TS FOR CINNAMON

PROFILE OF THREE PHILIPPINE CINNAMON SPECIES

	<i>Cinnamomum cebuense</i> Kosterm	<i>Cinnamomum mercadoi</i> S.Vidal	<i>Cinnamomum burmannii</i> (Nees & T. Nees) Blume syn. <i>C. mindanaense</i> Elmer
Common Name	Cebu cinnamon, kalingag	kalingag, kanila, kaningag	Mindanao cinnamon, mana, kami
Size	Medium-sized, 6-8 meters	Small tree, 6-10 meters	Medium-sized, 10 meters
Bark	Smooth outer bark compared to <i>C. mercadoi</i> .	Bark is thick and aromatic. The outer bark is rough, irregularly postuled; while the inner bark is yellowish.	Bark are closely allied to <i>C. zeylanicum</i> as well as in appearance, taste and odor.
Leaves	Leaves are leathery yet smooth and tapering with a sharp tip (16 cm long and 11 cm wide)	Opposite or sub-opposite, smooth, pale green, pointed (8-20 cm long, 4-6 cm wide)	Opposite to sub-opposite, smooth leathery, oblong, pointed at both ends (7-15 cm long, 3 cm wide)
Distribution	Endemic to Cebu, in Cantipla, Tabunan. But, several trees have been found in Camotes and Siquijor Islands.	Babuyan islands & Northern Luzon to Mindanao. Low and medium altitudes forests (sometimes to 2,000 masl).	Surigao, Davao and Zamboanga. In thickets and forests at low and medium altitudes.

COMMON CINNAMON PRODUCTS

CULINARY AND FOOD AND NATURAL HEALTH PRODUCTS

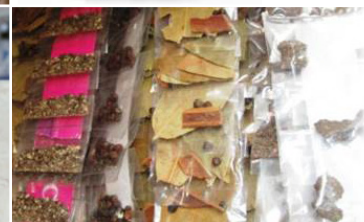
- Herbs and spices
- Beverages
- Pastries and confectioneries
- Food supplements

PHARMACEUTICAL PRODUCTS

(Cinnamon's medicinal properties include anti-inflammatory, anti-oxidant, anti-microbial, hypoglycemic, hypolipidemic)

COSMECEUTICAL AND PERSONAL HEALTH CARE

- Scent or fragrance for perfume
- Mouthwash, lip balm
- Facial packs



HARVESTING, UTILIZATION AND PROCESSING OF CINNAMON

In addition to knowing the economic value of Philippine cinnamon, it is also important to understand the proper methods of harvesting it. The lack of documented methods and low awareness among forest communities on the sustainable harvesting, utilization and processing of cinnamon is one of the key threats for this important, lesser-known forest resource.



(Photo Sources: Samiano, 2015; VietnamNet, 2016)

01 | BARK HARVESTING

Harvesting of cinnamon barks is practiced only in selected areas in the country. Locally harvested barks are sourced from naturally grown trees, and are commonly used for home consumption such as cooking and traditional medicine for treating aches.

There is yet a documented sustainable bark harvesting practice in the Philippines. In other countries, like Vietnam and Sri Lanka, cinnamon bark is harvested twice a year immediately after each rainy season when humidity makes the bark peel more easily.

In Sri Lanka, cinnamon barks for quills are only obtained from stems that are between 1.2-5 cm in diameter. Stems with diameter less than 1.2 cm are used for mulching while those more than 5 cm are used for oil distillation.

In Vietnam, 3-5 years after planting the cinnamon trees, bark harvesting starts by pruning the stems and the barks are peeled or stripped off. It is usually performed from April to June and September to November. Thinning some trees is also practiced to provide proper spacing in between trees to be able to grow up appropriately into desired diameter and height. When cinnamon trees have reached 12-15 years, bark harvesting/stripping will be repeated twice a year. Cutting of whole trees is only done when the tree is too old, usually about 30-40 years or when it is dead.

Bark products: quills, powder, oil



(Photo Sources: Domingo, 2017 [L]; Samiano, 2017 [C]; Samiano, 2015 [R])

02 | LEAF HARVESTING

Harvesting of cinnamon leaves is a common practice in Barangay San Antonio, Boljoon, Cebu for more than 50 years already. Leaves are sourced from the tree called “mana” (*C. burmannii* (Nees & T. Nees) Blume), which naturally abound in the site. Harvested leaves are sold in the markets of Cebu and nearby provinces.

Pruning of stems is the conventional method used by harvesters in collecting the leaves.

Harvesters climb trees and use sharp bolos in pruning stems. Mature stems are selected while young ones are left for regeneration. Leaves are dried for around 3-4 days.

Presently, only dried leaves are being traded in the Philippines. In Sri Lanka and Vietnam, cinnamon leaves are collected, dried and undergo oil extraction.

Leaf products: dried leaves, oil

03 | OIL EXTRACTION

Both the leaves and barks of cinnamon have oils that can be extracted through steam distillation. Oil from different species of cinnamon trees have different characteristics.

Oil products: flavoring, scent, medicinal



(Photo Source: www.aromaoil.store.com)

REFERENCES:

Blair, H.E. 2004. The Philippine Islands, 1493-1803. Volume III, 1569-1576. Project Gutenberg.

CBI Trade Statistics: Spices and Herbs. CBI Ministry of Foreign Affairs

Center for Conservation Innovations. 2016 Pinoy Cinnamon Conservation Project. Species Distribution Model report (unpublished).

Co's Digital Flora in the Philippines. URL <http://www.philippinesplants.org/Families/Lauraceae/html> last accessed: July 28, 2017.

Dolson, L. 2009. Cinnamon: Simple, Honeym... and Mighty. Health Benefits of Cinnamon. <http://lowcarbdiets.about.com/od/nutrition/a/cinnamonbenefit.html>

FAO Stat. 2008. <http://www.fao.org>.

FAO Stat. 2011. <http://www.fao.org>.

FTSP. 2002.

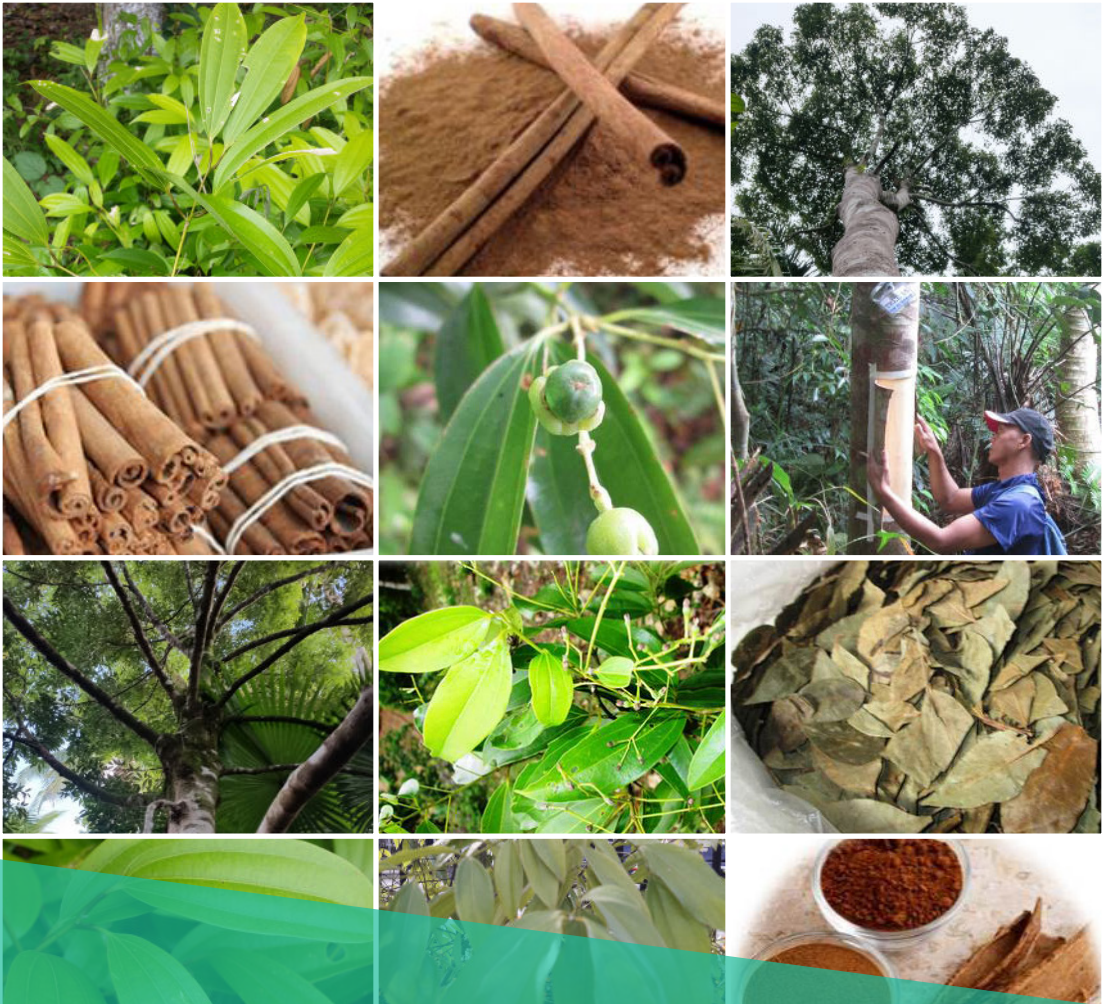
Kostermans, AJHG. 1986. Cinnamomum (Lauraceae). Part I. *Gingkoana* 6:1-168.

VietnamNet. 2016. Cinnamon harvest in Quang Ngai.

News. VietnamNet. <http://english.vietnamnet.vn/fms/society/70554/cinnamon-harvest-in-quang-ngai.html>

Workman, D. 2017. Cinnamon Exports by Country. World's Top Exports. URL <http://www.worldtopexports.com/cinnamon-exporters/>

Wuu-Kuang, S. 2011. Taxonomic Revision of Cinnamomum (Lauraceae) in Borneo. *Blumea* 56, 2011: 241-264.



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