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Culinary Spices: Interesting Facts

By Olivia Slemmermann Werapermal

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VOLUME 1

CULINARY SPICES

Interesting Facts



OLIVIA SLEMMERMANN WERAPERMALL

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Ceylon Cinnamon

Cinnamomum verum Presl (syn. C. zeylanicum Blume)



Fig. 1. *Cinnamomum verum* Presl (Image courtesy of Tropica Nurseries)

Ceylon Cinnamon - The True Cinnamon

Cinnamomum verum Presl (syn. *C. zeylanicum* Blume)

Sri Lanka, an island located below the peninsula tip of Southern India, is often referred to as the “Pearl of the Indian Ocean” and in recent times as the “Teardrop of the Indian Ocean”. It is home to many important economic crops among which are tea, rubber, coconut, Ceylon *cinnamon* and a range of spices. Precious among them all is Ceylon cinnamon, identified as *Cinnamomum verum* Presl (syn. *C. zeylanicum* Blume), also referred to as the queen of spice.

The widespread cultivation of this form of cinnamon, from ancient times, is found nowhere else in the world but in Ceylon. Ceylon is one of the many names by which they called Sri Lanka in the past. Cinnamon trees grew wild in Ceylon on lands owned by princes in days of long ago. Cinnamon, especially Ceylon cinnamon, is an aromatic spice sought by royalty and others of importance for many uses, from time immemorial. Amongst those was its use for anointing, perfumery, culinary, religious, and many others.

From ancient times, Ceylon cinnamon which is endemic to Sri Lanka was exploited by traders who carried it to other foreign lands in exchange for other goods. This would have indeed been a very lucrative trade in those times, as its location was kept a tightly guarded secret. The value placed on cinnamon far exceeded the value of gold, frankincense and ivory. Only the wealthiest of people could have afforded the use of cinnamon ... the most ancient spice recommended by God Himself as mentioned in the Holy Bible and used by Pharaohs, royalty and noblemen. Empires were built on the wealth it earned by western nations after its source was known and they fought many fierce and bloodied battles to gain supremacy over it.

Ceylon cinnamon, with its subtle aroma and beautiful tan colour, is a spice that has always had a special demand from all over the world

ever since Biblical times. Cinnamon is obtained from the inner bark of the cinnamon tree, whilst the oil is extracted from the bark, its leaves and roots. The geographical location, soils and climatic conditions of Ceylon now known as Sri Lanka make it an ideal location for the cultivation of this precious crop.

There is no other product that received such prominence and demand, it has even been said its value was much higher than gold and silver and was used even as currency. It can well be defined as the royal spice of spices.

Throughout the centuries even during Biblical times, the noble cinnamon was used in numerous ways. The simple inner bark of the cinnamon tree has a variety of important uses.

Ceylon Cinnamon is a spice that could be used in cuisine for savoury as well as sweet dishes. It flavours food with a very subtle flavour. Only Ceylon cinnamon could be used for sweet dishes. The bark of its close cousin, the Cassia also known as Chinese cinnamon, cannot be compared to the refined and subtle flavour needed for sweet dishes, it is more suitable for savoury preparations owing to its stronger flavour and aroma.

Nomenclature

Kingdom: Plantae
(unranked): Angiosperms
(unranked): Magnoliids
Order: Laurales
Family: Lauraceae
Genus: *Cinnamomum* Schaeff.
Botanical name: *Cinnamomum verum* Presl
Synonym: *Cinnamomum zeylanicum* Blume

Morphology

Lauraceae, Bernard Verdcourt. Flora of Tropical East Africa. 1996

General Habit

Small tree to 12 m.

Leaves

Leaves bright red when young, green with age, sub opposite, ovate-oblong, elliptic or lanceolate, 5-19 cm long, (2-)5-9.5 cm. wide, narrowed to a narrowly rounded tip, cuneate to truncate at the base, prominently 3-5-nerved from the base, coriaceous, glossy, without glands in the nerve-axils.

Reproductive morphology Flowers

Flowers small, yellowish or greenish white, silky outside.

Reproductive morphology Fruits

Fruits brown or black, ovoid, 1.3 cm. long.



Fig. 2. *Cinnamomum verum* Presl showing fruits
(Image courtesy of Deshantha Ranasinghe-Tropica Nurseries)

A Bit of History Surrounding Ceylon Cinnamon

The earliest mention of Ceylon Cinnamon refers to as early as 2800 BC. However, the first mention of Cinnamon in Ceylon dates back to early as 1200, and when the Portuguese invaded the Island in pursuit of this precious spice, they took over the cinnamon trade from the Sinhalese in the 1500s.

After the Dutch gained control of the Island by defeating the Portuguese, in the 1600s they continued with the process. Still, they kept improving it by growing Cinnamon more systematically by setting strict laws punishable by death if breached. Because they considered Ceylon Cinnamon so precious and a highly-priced commodity, it caused many wars and empires built on the wealth they gained.

Cinnamon has a very colourful history and is still used since ancient times by various nations for medicinal, culinary, and anointing oils. The Hebraic and Arabic term, *amomon*, which means fragrant spice plant, is from where Cinnamon derives its botanical name, *Cinnamomum*.

Cinnamomum zeylanicum is a member of the LAURACEAE family, a genus of about 250 species native to lands from South, East and Southeast Asia to Australia. Of the six known species in Ceylon, *C. verum* Presl (syn. *C. zeylanicum* Blume) is widely grown for its economic worth.

Ceylon cinnamon is known as the 'true' Cinnamon, because another economic form of Cinnamon also exists in the commercial world

This other variety also belongs to the same LAURACEAE family, botanically called *Cinnamomum aromaticum* or *Cinnamomum Cassia*. It is native to Burma. Its flavour is much stronger than the more refined Ceylon cinnamon (*Cinnamomum zeylanicum*).

Therefore, it requires lesser quantities in recipes and is more suitable for savoury dishes than for sweet dishes.

Early Mention

Though it is endemic to Sri Lanka, the mention of Ceylon cinnamon appears mentioned many times in the Bible's Old Testament. The earliest instance is when Moses received his instructions from God Himself on how to anoint the Tabernacle mentioned in Exodus 30:23-4.

Chinese writings mentioned Cinnamon as early as 2800 BC and referred to it as *kwai*, and from then till now, the name remains unchanged in the Chinese language. The Italians call it *canella*, derived from their word for cannon, which fittingly describes the cinnamon stick by its meaning "little tube." The ancient Egyptians widely used it for embalming because of the preservative nature of the spice.

Customs and Religious Beliefs

There is ample evidence that Ceylon Cinnamon was one of the earliest spices to be traded in the ancient world. The Bible has many references as far back as the earliest of times mentioned in the books of Exodus, Psalms, Proverbs, Ezekiel, and Revelations. The trade of Ceylon cinnamon took place even before the building of the pyramids. During the time of Moses, God appeared to him and gave him specific instructions on the way to anoint the Tabernacle and the vessels of the Tabernacle, including the Priests, as well with ointments made from the sweet Ceylon Cinnamon. That was a process of purification. In those days, it was a practice to offer burnt meat as an offering to God. It would have caused the meat to spoil. They used Ceylon cinnamon as a preserving agent to inhibit the bacteria that cause spoilage and mould. It also had the added ability to hide the stench of the spoiling meat with its powerful aroma.

There is mention in the Bible that merchants trading in Ceylon cinnamon carried it to Palestine. That was a long and tedious journey to be undertaken when transportation couldn't have been at its best.

Only people of great importance and wealth could have afforded to splash themselves with this precious spice. It was in great demand by the great Kings and Queens, and it even formed an essential component of the embalming mix used by the early Egyptians.

Ancient names such as Aelius Galenus or Claudius Galenus, often Anglicised as Galen (129-216 CE) and sometimes known as Galen of Pergamon, Theophrastus (371 - 287 BC), Pedanius Dioscorides (born c. A.D. 40 Anazarbus, Cilicia—died c. 90), Gaius Plinius Secundus (AD 23/24 - 79), called Pliny the Elder, Herodotus born about 485 B.C., and Strabo (ca. 64 B.C.-ca. A.D. 23) have recorded about this exceptional and vital spice.

The Chinese have used Ceylon Cinnamon for medicines as early as 4700 years ago.

Ceylon Cinnamon ranked higher in value than gold, ivory, silver, and frankincense. It was the most costly of offerings made in Miletus in the temple of Apollo as early as 243 BC.

The Arabians found out how to distil oil out of plants and noticed how it carries the plant's or flower's scent to a greater degree. This procedure also made it much easier to move across distant lands for trading. For example, they carried the oil of Ceylon Cinnamon from Arabia to Venice and from there to other parts of Europe.

Nobility once sought and afforded what only is now within reach of anyone and used in bakery products, worldwide cuisine, cosmetics, insect repellents, aromatherapy and in many other uses.

Curative Properties

Ancient physicians knew that Ceylon Cinnamon had curative properties for many illnesses and used this knowledge. As a result, we use Cinnamon in medicine and tonics even today.

China has a widespread belief that Cinnamon, taken daily over a long period, will make you strong and improve your complexion to have a younger appearance. Another ancient story says that anyone who takes Cinnamon with toads' brain can walk on water for seven years! Maybe Simon Peter had consumed as little when he tried to walk on water! It further states that they will also look young forever and will never die! But who can find so many toad's brains?

Patients suffering attacks of asthma will benefit from a soothing hot cup of cinnamon tea. The many uses of Ceylon Cinnamon mentioned are as a cure for diabetes, a remedy for fever, and the alleviation of stress and boosting of energy and wellbeing.

Physicians in medieval times were aware of the curative properties of the spice and used it in the treatment of coughs, sore throats and hoarseness. In addition, they highly valued Cinnamon as a preservative when there was no means of preservation of meats other than by natural methods.

They highly recommended it to preserve meat because of the inhibiting effect of the phenols it contained. It could restrain bacteria from spoiling meats. Its powerful aroma could effectively mask the offending odour of old flesh.

Value Comparison

More Precious than Gold and Silver

The Elder Pliny wrote, in the 1st century A.D., that they could compare the value of 350 grams of Cinnamon to the weight of over five kilograms of silver.

After Nero, the Roman Emperor, murdered his wife, out of remorse, he ordered a year's supply of Cinnamon burnt at her funeral, an act for which they later chastised him.

In ancient times, Ceylon cinnamon was once a closely guarded trade secret of the Arabs, who wanted to keep the source known to them alone to maintain lucrative trade links with the Romans and Greeks. So they used a devious and dangerous route, similar to the silk route, to get their precious merchandise across to their markets.

For many centuries, the trading seafarer Arabs, skilled in artfully disguising the growing location, conducted a brisk trade solely to protect their business from their trading partners in Europe and other countries.

These merchants made a mint of money trading these precious spices, as they considered the spices to be several times more valuable than the value of gold and silver. Little wonder the early traders wanted to keep the growing location secret.

In their efforts to guard the whereabouts of the source of Cinnamon, the Arabs would invent many mystical myths and weave them around delightful and farfetched legends to impress and augment the mysticism of this rare spice. Herodotus III wrote one such tale. It told of a giant Phoenix who gathered these precious sticks from a distant land to build its nest. When cinnamon gatherers sighted this mythical bird, they would place heavy chunks of meat in places for it to see, and the bird would carry it off to its nest with difficulty. But, the tale

continued to say, as the nest could not withstand the weight of the meat, it would fall apart, and they then gathered the sticks.

But why was Ceylon Cinnamon so much in demand? It is special even today.

They used Cinnamon as currency and was precious enough to wage many fierce battles, laws enacted, and if anyone breached any of these, it was punishable by death. A Dutch historian once wrote, "Cinnamon was the "rich bride Helen" for whom the Netherlands and Portuguese had for so many years contended."

However, no matter how carefully they kept the secret, it soon came to be known, and Ceylon cinnamon became the one cause of many fierce battles and why the Island fell into the hands of foreign invading countries. Soon after, they introduced Ceylon Cinnamon to other nearby countries, and those with similar soil and climatic conditions started cultivating it.

Discovery of Source – The Arrival of the Portuguese

Once its source became known by the European Nations, they fought many fierce wars among these foreign invaders to gain autonomy, particularly during the 16th and 18th centuries. Because of these invasions, the Island fell into the hands of the Portuguese when they arrived in 1505. And they fought many wars to gain control of the country.

Dutch Influence

Throughout the many wars, the kingdom of Kandy remained independent.

The Dutch had gradually gained increased power over the Portuguese. And the King of Kandy sought their help in 1636. Then, in 1637, the

King of Kandy received a Dutch envoy. However, when the Portuguese attempted to capture Kandy in 1638, the Dutch crushed them in battle at Gannoruwa.

The Dutch agreed to capture the Portuguese-held ports in the coastal towns of Ceylon in return for their expenses. They continued to capture certain Portuguese -held ports from 1638 to 1640 but kept them, as they claimed their costs had remained unpaid.

However, the two foreign powers made peace in 1640. But they resumed their war in 1652, with Kandy allying with the Dutch once again. The Dutch attacked Colombo and successfully captured it in 1656 but refused to hand over the city to Kandy. Finally, in 1658, they captured Jaffna, which crushed the Portuguese totally, and there ended the Portuguese rule of the Island. The Dutch, by then, had extended their control over the Island and were successful in capturing the Eastern coastal port of Trincomalee in 1665. Throughout this time, Kandy stayed independent but remained uneasily vigilant until 1760, when the Dutch won the war over them. Then, they forced Kandy into accepting a humiliating treaty to recognise Dutch sovereignty of the entire Island's coastline, including the parts that formerly belonged to Kandy.

In 1770, the Dutch East India Company set up commercially viable groves of Cinnamon and systematically planted, soon after the Dutch conquered the coastal areas. They enacted strict Cinnamon laws punishable by death to anyone who breached those laws. The Dutch gave way to the British in 1796, when the British annexed Jaffna and Colombo, and that put an end to the Dutch rule in Ceylon.

Ceylon Comes under British Rule

In 1815, the British Army invaded Kandy and met with hardly any resistance. They took the king captive and exiled him to India. Finally, the country came to be ruled by the British, who introduced trial by jury, built a network of roads, and, in 1833, introduced new

reforms, including the administration with English as the official language. They abolished slavery in 1844.

Introduction of Coffee and Tea

They gave prominence to tea by clearing vast acres of mountainous jungle lands in the Island's central highlands and lower hills after coffee had been a failure in 1870 because of the slow spread of a fungus called *hemileia vastratrix*, also referred to as the coffee blight. Tea then replaced the coffee plantations in the late 19th century. Soon, a flourishing tea industry took centre stage, while the cinnamon cultivation and trade took a back seat simply owing to the vastness of acreage covered by tea.

When the primary produce of Ceylon had been tea, rubber and coconut, spices could only come fourth. The tropical climate and the two monsoonal rainfalls Ceylon enjoys are ideal for the cultivation of most spices. Cinnamon, cardamom, cloves, black pepper, nutmeg and mace are the primary group of spice crops grown in Sri Lanka.

The Ceylon Cinnamon Industry Continues

However, the resilient Ceylon cinnamon industry continued despite many obstacles. Sri Lanka is still the leading producer and supplier of Ceylon Cinnamon's best and choicest grades to the world markets. As a result, Sri Lanka enjoys four-fifths of the world's demand for Cinnamon.

Climate

The sunny climate, fertile soil, and moisture kept by four seasons of rainfall, two inter-monsoonal and two monsoonal, made it the ideal environment for the growth of healthy cinnamon trees.

Sunshine plays a vital role in Cinnamon growing, ranging from direct sunlight to partial shade and over-watering avoided. The cinnamon tree is an Asian tropical evergreen plant and does not tolerate chilly weather.

The soil should be well-drained but moist, and the trees should remain undisturbed while growing. They grow Cinnamon in individual containers before transplanting it to its final positions.

Growing Cinnamon is not easy. It's a tree that would normally grow to a height of sixty feet. Instead, it is continuously cut back to a suitable size to make it easy for harvesting.

The cinnamon tree may grow undisturbed for two years before they cut it down to a stump. Then, they use the resulting young shoots that sprout from it for the processing of Cinnamon. At this stage, the bark will be pliable and soft. Next, they extract the spice from the sweet-scented inner bark of the tree's branches.

The soil has a vital role to play in the growing of Cinnamon. In Ceylon, the best quality of Cinnamon comes from Negombo. Here the ground is soft, white and sandy.

The other areas are the coastal belt of Galle, Matara, and Hambantota. Besides Ratnapura and the hills of Kandy, Haputale and regions of the Sinharaja forest are the highest areas where the conditions are most favourable in Ceylon for the cultivation of Cinnamon. Ceylon cinnamon is an indigenous spice in Sri Lanka.

The cultivation of Cinnamon has faced many problems in the last two decades. Even though the cultivated extent has remained constant, a decreased yield shown is because of the many external factors at play.

The Matara District conducted A case study in 1997 as this district is the highest producer of Ceylon cinnamon. It revealed many problems faced by cinnamon growers. The poor basic economic infrastructure,

high costs of production, lack of skilled and seasonal workers, and reduced labour productivity highlighted the key points.

Smallholders held the acreage under cultivation. But, at most times, they lacked the means of funding to maintain the efficient maintenance of the processing of Cinnamon.

Of the total acreage, they cultivate only a small percentage with true Cinnamon. A mix of cinnamon varieties covers the balance. The crops don't get fertilised, as it is too expensive. The lack of knowledge of the many aspects of the product and understanding its market are reasons preventing the cultivators from producing top quality Cinnamon.

Small-scale farmers cultivate over 80% of Ceylon Cinnamon, most of whom are on the southern coastal belt of Sri Lanka.

Interestingly, in this network, as with all other Ceylon Cinnamon producers, one third, sometimes up to one half of the revenue gets shared with the cinnamon peelers who do the actual work to produce the finest quality cinnamon. This sharing model is unique to the Ceylon Cinnamon industry in Sri Lanka.

It creates a great sense of ownership at work, and this works as a vital motivating factor for the peelers to work with a keen eye on quality to produce high-quality Cinnamon. It undoubtedly helps to create more value in the end product. It is a recognisable factor that a Cinnamon peeler with an eye for quality and minimum wastage is an asset unto himself and the grower.

For instance, fine-grade Cinnamon, which requires an extra effort (compared to coarse-grade Cinnamon) and additional labour time, fetch a premium price, and the benefits of the sale cascade down to the cinnamon peelers' level and their families.

Uses of Ceylon Cinnamon

Cinnamon's primary use is as a spice, also used as an aromatic and a taste enhancer. Customarily, the oil and bark are used to fight microorganisms, treat diarrhoea and other gastrointestinal and dysmenorrhoeal disorders of microcirculation. However, evidence to support these uses is limited. Research has focused on anti-inflammatory, antioxidant, and antimicrobial activity; even though there is much talk that Cinnamon can manage diabetes, there is no definite evidence to support it. Cinnamon administered as a dosage of only 1 to 1.5 g/day in diabetic studies yielded records of no adverse effects.

The essential oil of the plant is known for its activity against various microorganisms and fungi.

No contraindications or interactions have been identified or documented as yet. However, it can trigger allergic reactions, while some experience skin irritation when exposed heavily to the spice.

The sensory quality of Ceylon cinnamon lies in its powerful aroma and strong taste, which is very much more refined than Cassia. It is pleasant, sweet, warm, but barely bitter or pungent. However, Ceylon cinnamon's fresh taste is absent in Cassia and other types of Cinnamon.

Ceylon cinnamon has an advantage over Cassia, as it does not have the blood-thinning chemical Coumarin, which is associated with hepatotoxicity and liver damage. Thus, it may only have very minute traces that are not harmful for human consumption, if at all.

Cinnamon Essential Oil

Cinnamon essential oil's main constituents got from the bark, leaves, and roots are:

- Cinnamon bark: the two dominating trace compositions are eugenol (4-(1-propene-3-yl)-2-methoxy-phenol, 5 to 10%) and phenylpropanoids cinnamaldehyde (3-phenyl-acrolein, 65 to 75%) (Max. 4%), while other phenylpropanoids (safrole, cinnamic acid, Coumarin [max. 0.6%] esters), mono- and sesquiterpenes, even though occurring only in traces, influences the taste of Cinnamon significantly. Another relevant trace component that enhances the quality is 2-heptanone (methyl-n-amyl-ketone). The content of slime in the bark is as low as (3%).
- Cinnamon leaves: (1%) can be extracted from the leaves that consist chiefly of eugenol (70 to 95%) and can be a substitute for cloves. Smaller quantities (1 to 5%) of cinnamaldehyde, benzyl benzoate, linalool, and β -caryophyllene are also present.
- Cinnamon root bark: camphor (60%) is the dominating extract from the root bark, which is a wholly different composition than what we found previously in the bark and leaves.

Medicinal Benefits of Ceylon Cinnamon

- The properties of Ceylon cinnamon's medicinal benefits and values are many. In medieval times, they considered Cinnamon to have many curative uses, and ancient doctors believed it could cure a common cold, snakebites, freckles, and kidney troubles, among many other ailments.
- Cinnamon used as a warming substance comes mainly from the oil of the inner bark and its leaves. It is a natural analgesic and has been helpful in the treatment of rheumatism and arthritis. Cinnamon as tea is also an antioxidant and stress reliever, benefitting the human body.
- For digestive disorders, Cinnamon is an excellent herbal remedy. Reports show that Cinnamon breaks down fats, which results in weight loss. Lack of appetite, stomach ulcers, vomiting, and diarrhoea are common disorders that Cinnamon

can treat. Cinnamon, being a carminative, also helps relieve abdominal discomfort caused by intestinal gases.

- Cinnamon contains the properties of being antiseptic. It prevents the growth of bacteria and fungi. Studies have shown that cinnamon use has restricted the development of urinary tract infections and other fungal ailments that cause common skin problems, including head lice infestation.
- Many brands of toothpaste and mouthwash have used Cinnamon as an active ingredient. As a result, frequent use of oral products containing Cinnamon will cause fewer cavities, gum disease, throat infections, and bad breath.
- For diabetic sufferers, Cinnamon will be a boon. Researchers at the United States Department of Agriculture have found that Cinnamon can reduce the need for insulin. The recommended dose is 1/8 to 1/4 tsp. of cinnamon powder per meal. In addition, with recommended doses of Cinnamon, the control of cholesterol levels is possible.

Harvesting Periods

Usually, the harvesting of mature Cinnamon bark gets done twice a year, immediately after the monsoonal rains of May to January. The bark peels off easily owing to the increase in sap content and the suppleness of the stalks.

Processing of the bark should begin immediately after harvest while it is still moist. Then, the peelers leave the bark to dry in a well-ventilated and dry area. When the drying process gets underway, they should take care to do it in the best conditions. Less than that will cause insect pests to infiltrate the bark, which will cause the loss of its premium quality and the hardest part in processing - the sweat of its labour wasted.

Traditional Harvesting Method

Traditionally, the grower is separate from the peeler. Peeling the Cinnamon is a highly skilled job, and they pass the technique down from generation to generation. However, the quality of the cinnamon sticks lies chiefly in the hands of the peeler. Only their deft and careful peeling techniques can remove the inner bark in one piece with no external damage. Because of these reasons, these skilled peelers can demand as much as half the price of the Cinnamon. An entire family undertakes the peeling, with each member assigned a particular task.

After the coppicing of the branches, they carry it to the peeling shed and leave them separately for processing into oil and immediately the bark removed for processing. At no stage are the branches allowed to dry before being peeled.

Traditional Tools Still in Use and The Art of Extracting the Spice

The traditional peelers use a tedious process to extract this age-old and valuable spice, Ceylon Cinnamon.

After tamping with a small wooden mallet, to allow the inner bark to come loose, they scrape off the visible outer bark using a specially fashioned curved knife. The following process involves a unique tool to lever out the inner bark in two complete pieces, deftly prising off the hard-core wood. Next, they make a longitudinal cut on the stick from end to end, and a special sharply pointed knife worked between it and the core wood until there is a gap of about half an inch. Next, a similar slit made on the opposite side and the process repeated. They then remove the bark in two halves. They then place these, one within the other, until they form 106.7 cm long quills. After that, these quills are air-dried in well-ventilated indoor areas. However, they don't recommend sun-drying since the bark will warp and lose its colour.

These tools are the same tools handed down from generation to generation together with the technique. Cinnamon peelers do not get involved in the spice's growing.

The traditional peelers belong to the Salagama caste in Sri Lanka. The job itself can be very tiring, and various restrictions and taboos have caused the peelers to be isolated from the higher social strata and the caste system. Because of these restrictions and other economic reasons, these traditional peelers are presently moving away from the industry, searching for greener pastures.

However, there's good news for the industry by introducing mechanisation, allowing more benefits to the worker with better working conditions and increased worker efficiency. It has also improved the quality of the product tremendously. The product is cleaner, and the new process improves the overall quality of the quills.

They did not allow women and disabled persons to work as peelers. However, the mechanisation of the processes has opened new doors for this segment of society.

Ceylon Cinnamon vs. Cassia



Fig 3 *Ceylon Cinnamon* (Image courtesy of Tropica Nurseries) &
Fig 4 *Cassia Cinnamon* on right (Image courtesy of Canva.com)

Of the Cinnamon cultivated as economic crops, Chinese Cinnamon or Cassia is the coarser and stronger flavoured variety than Ceylon Cinnamon. These edible Cinnamon varieties are among the many Asian evergreen trees belonging to the genus *Cinnamomum*. In the native languages of Ceylon, Cinnamon is known as "*Kurundu*" in Sinhalese and "*Kuruwa*" in Tamil.

Cassia Cinnamon, known as *Cinnamomum aromaticum* or *Cinnamomum Cassia*, belongs to the LAURACEAE family. While Cassia, is found growing in Burma, it is also common in China known as Chinese Cinnamon. Its origins are from Southern China, with subspecies found widely across southern and eastern Asia.

The rough-textured thicker sticks that are of a dark reddish-brown, identifies Cassia. It is cheaper and low in quality, and the form primarily available around the world. Although belonging to the same Cinnamon family, Cassia has a stronger, sharper flavour and aroma, better suited for savoury foods than true Cinnamon.

Ceylon cinnamon, whose flavour and aroma is subtle and refined, could be used for sweet and savoury dishes.

They extract Cassia from the dried bark of the stem or branches of the *Cinnamomum Cassia* tree. The most common forms of Cassia are the quills that form a double scroll and strips.

Ceylon Cinnamon is a lighter tan colour, papery delicate and brittle, and the bark coils into a single spiralled quill.

Since Chinese Cinnamon and Ceylon cinnamon flavours are almost the same, it isn't easy to differentiate between them in powdered form.

Ceylon cinnamon has a far lesser proportion of the chemical cinnamaldehyde, which is responsible for the strong spicy cinnamon flavour of Cassia. As a result, the Cinnamon flavour of Ceylon Cinnamon is more subtle and could have a bouquet of citrus, sweet floral and clove aromas.

We should observe care when using Cassia bark because, unlike true Cinnamon, it has a significant amount of a blood-thinning compound known as Coumarin.

The choice of Ceylon cinnamon vs Cassia depends on one's taste. Like the Americans, if the option is for the stronger flavour, then the obvious choice would be Cassia. On the other hand, Ceylon Cinnamon would be the obvious choice for those who prefer a more delicate flavour and wish for a hint in their hot chocolate.

Chemistry

The principal elements of the essential oil from the leaves and branches of the Cinnamon are 65% to 80% cinnamaldehyde and lesser percentages of other phenols and terpenes. It includes trans-cinnamic acid, eugenol, hydroxycinnamaldehyde, cinnamyl alcohol,

o-methoxycinnamaldehyde, and its acetate, limonene, tannins, alpha-terpineol, oligomeric procyanidins, mucilage and trace quantities of Coumarin.

In composition, *C. verum* differs from *C. cassia* in the content of eugenol and Coumarin. Coumarin can only be found in the cassia varieties (0.45%).

Different materials and techniques used in the spice's extraction can alter the chemical composition, affecting the proposed medicinal or experimental effects.

Why Ceylon Cinnamon

Although remaining untested, it is said to be an effective insect repellent. In addition, the chemical compounds found in the oil of the cinnamon leaf is said to be effective against the growth of mosquito larva. Recent studies have shown that the cinnamon bark is also a natural snake repellent, and it's not without its many medical uses.

It is recommended to chew on sticks of Cinnamon to curtail the urge for tobacco.

It also regards Cinnamon as a food preservative because of the compounds it contains that aids in retarding the growth of bacteria, especially in the curing process of raw meats. Cinnamon has had its share of sensuous usages too. In the Holy Bible, the book of *Proverbs* states that the 'Lover's bed is perfumed with myrrh, aloes, and cinnamon.' The book *Song of Solomon* has a song describing the beloved of Solomon. It states that "cinnamon scents her garments like the smell of Lebanon." Even today, with aromatherapy and scented candles being elevated to new levels, Cinnamon oil is used to create the fragrance of Cinnamon for romantic moments. It is seen to be much in demand.

Cinnamon is a multi-faceted spice, and the benefits to the human body are many. The choices for usage are varied too. Cinnamon is on the top of the "must-have" list for many things and many reasons.

Grades of Ceylon Cinnamon

Cinnamon Grades / Forms

- Cinnamon Bale Form
 - Alba, C5 Special, C5, C4, C3, M5, M4, H1, H2, H3.
- Cinnamon Cut Form
 - Alba, C5 Special, C4, C3, M5, M4, H1, H2, off-cuts.
- Cinnamon Quillings
 - Super Fine Quillings, Quillings No.1, Quillings FAQ.
- Cinnamon Powder
 - Super Fine, Medium. (Differs according to Mesh sizes.)
- Essential Oils
 - Cinnamon Bark Oil
 - Cinnamon Leaf Oil
- Cinnamon Chips

Cinnamon Grades

The grading of Ceylon Cinnamon is based entirely on the diameter of the quills. Also, the number of quills to a kilogram and the extent of foxing. Its hue is pale reddish-brown and characterised by a sweet and delicate flavour and proven to be the safest Cinnamon in the world, having a lower level of Coumarin (0.017g/ Kg) than other Cassia varieties.

The grading system of Ceylon Cinnamon in Sri Lanka divides it into four categories, namely Alba, Continental, Mexican and Hamburg.

Alba: less than 6 mm (0.24 in) in diameter

Continental: less than 16 mm (0.63 in) in diameter

Mexican: less than 19 mm (0.75 in) in diameter

Hamburg: less than 32 mm (1.3 in) in diameter

These groups get further subdivided into specific groups of M000, H1, and H2, among others.

A good quality cinnamon bundle will be of uniform quality, thickness, and colour. In addition, the whole bundle of quills should feel firm to the touch. To allow for easy handling, Cinnamon bundles are of a standard weight of 45 Kilos

Alba: The crème de la crème is the chief top grade of Cinnamon, this delicate, slim and exotic type is the most exquisite.

C5 Special: The texture, colour, and shape of this type ensure that this is one of the best sellers for Continental Cinnamon.

C5 - Boasting a high demand, this gold-coloured type is both aromatic and spicy.

C4 - More yellow than golden, they consider this type of Cinnamon to be a fine choice.

M5 - Rugged and rustic, these thin Cinnamon sticks are brownish yet authentic in their texture and zest.

M4 - Fine, because they are sectioned off and selected type of Cinnamon in multiple markets.

H1 - This is indubitably the finest in the Hamburg range since more delicate portions of the bark are used to produce this type.

H2 - Golden in colour, thicker in diameter, less refined but still original with its texture, this is an excellent and versatile grade of Cinnamon.

Forms

They are of varied sizes, 8 cm, 12 cm, 15cms, and 18 cm lengths upon customer requirements. The weight of each package too will depend on customer specifications. The packaging can either be in corrugated cartons or wooden boxes as per customer requirements.

Coarse cuts are unpeeled Cinnamon bark with bits of outer bark got by heating or scraping the shoots.

Ground cinnamon is where the cinnamon bark is presented in powder form. In quill form, it is easy to identify between Ceylon Cinnamon and Cassia Cinnamon, but when it is ground, it not possible to identify which is which. Customers of ground cinnamon may be wary of the Cinnamon forms.

Stem bark - Bale form/Cut form/ Powder form/ Quillings

Cinnamon leaves - Extracted into Cinnamon Leaf Oil.

Cinnamon bark–Cinnamon Bark Oil

Discarded core Cinnamon branches–Firewood and other craft products

Uncut Cinnamon takes the form of long uncut sticks of Cinnamon, packed in cylindrical bales of 23 kilos / 25 kilos each, depending on customer requirements. The packaging will be in poly liners and an outer wrapping of jute. It protects the unique flavour and fragrance of the famous Ceylon Cinnamon. However, the fragility of Cinnamon sticks makes them prone to breakage. Therefore, Cinnamon in bales

have a significant risk of breakage, and they should take care of when loading. The bales consist of quills about 1m long made up of 15-20 cm long pieces placed inside the other. The best way to stow bales is upright. Then, they fill the quills with cinnamon fragments to maintain their shape: the tighter the fill, the less the chance of breakage of the quills.

A good quality cinnamon bundle will be of uniform quality, thickness, and colour. Care must be taken not to stow heavy goods over the Cinnamon sticks. It is best to produce a quality product always towards building confidence because of the fear of adulteration. For packaging ground cinnamon, it is best to use polypropylene since polythene allows the flavour to diffuse.

It is best to transport Cinnamon in well-ventilated containers so that the heat will not cause breakage or warp the quills. It must ensure they protect the Cinnamon from moisture; otherwise, it could lead to fungal and mould formation. Cargo should be strapped well and stored without allowing for movement. On ships, the Cinnamon should not be stored near the top deck that will attract the sun's heat and dehydrate the quills of its oils. They should not keep it near the container's floor either to draw moisture, as then the cinnamaldehyde will turn into styrene, which is dangerous. Cinnamon, being highly odour-sensitive, should be kept away from other cargo with a strong odour.

Nutritional Value Per 100 g (3.5 oz.)

Energy	247 kJ (59 kcal)
Carbohydrates	80.6 g
Sugars	2.2 g
Dietary fibre	53.1 g
Fat	1.2 g
Protein	4 g

Vitamins	Quantity	
	%	DV
Vitamin A equiv.	2%	15 µg
Thiamine (B1)	2%	0.02 mg
Riboflavin (B2)	3%	0.04 mg
Niacin (B3)	9%	1.33 mg
Vitamin B6	12%	0.16 mg
Folate (B9)	2%	6 µg
Vitamin C	5%	3.8 mg
Vitamin E	15%	2.3 mg
Vitamin K	30%	31.2 µg

Minerals	Quantity	
	%	DV [†]
Calcium	100%	1002 mg
Iron	64%	8.3 mg
Magnesium	17%	60 mg
Phosphorus	9%	64 mg
Potassium	9%	431 mg
Sodium	1%	10 mg
Zinc	19%	1.8 mg

Other constituents	Quantity
Water	10.6 g

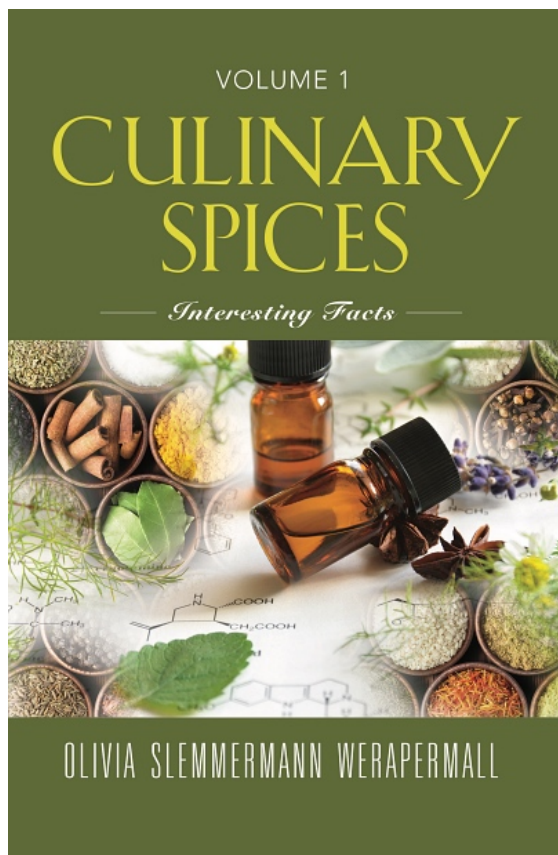
Units

µg = micrograms • mg = milligrams

IU = International units^{*}

Percentages are roughly approximated using US recommendations for adults

Source: USDA Nutrient Database



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