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A Review on Cinnamon species

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Abstract

Cinnamon is a spice obtained from the inner bark of several tree species from the genus Cinnamomum. Cinnamon is used mainly as an aromatic condiment and flavouring additive in a wide variety of cuisines, sweet and savoury dishes, breakfast cereals, snack foods, tea and traditional foods. There are four major types of cinnamon. Darker-colored cassia cinnamon is the one most commonly sold in the United States. It's grown in southeastern Asia. Ceylon cinnamon, also known as true cinnamon, is frequently used in other countries. Cinnamon usually causes no side effects. But heavy use could irritate your mouth and lips, causing sores. Some people are allergic to it. It might cause redness and irritation if you put it on your skin. Thus cinnamon of- Fers an array of different oils with diverse characteristics, Each of which determines its' value to the different indus-Tries. For example the root which has camphor as the Main constitute, has minimal commercial value unlike the Leaf and bark.

Key Words- Cinnamomum zeylanicum, True cinnamon, Health benefits, Indian spice.

Introduction

Cinnamomum zeylanicum Blume (Family Lauraceae) which Is popularly known as cinnamon is classified in the botanical Division Magnoliophyta, class Magnoliopsida. Generally in India, Cinnamomum zeylanicum is cultivated in south India. But it originates from the island of SriLanka (formerly called Ceylon), south east of India [1].

The aroma and flavour of cinnamon derive from its essential oil and principal component, cinnamaldehyde, as well as numerous other constituents including eugenol. Only a few Cinnamomum species are grown commercially for spice. Cinnamomum verum is sometimes considered to be "true cinnamon", but most cinnamon in international commerce is derived from the related species Cinnamomum cassia, also referred to as "cassia" [2]. In 2018, Indonesia and China produced 70% of the world's supply of cinnamon, Indonesia producing nearly 40% and China 30% [3].

Biological source –Dried inner bark of the shoots of coppiced trees of *Cinnamomum zeylanicum.*

Botanical Classification

Kingdom – Plantae

Sub kingdom - Tracheophytes

Super division - Angiosperms

Division - Magnoliids

Class - Magnoliopsida

Order – Laurales

Family - Lauraceae

Genus - Cinnamomum

Species - C. verum

History & Origin

Cinnamon is native to Sri Lanka (formerly Ceylon), the neighbouring Malabar Coast of India, and Myanmar (Burma) and is also cultivated in South America and the West Indies. The spice, consisting of the dried inner bark, is brown in colour and has a delicately fragrant aroma and a warm sweet flavour. Cinnamon has been known from remote antiquity [4]. It was imported to Egypt as early as 2000 BC, but those who reported that it had come from China had confused it with cinnamon cassia, a related species. In Ancient Egypt, cinnamon was used to embalm mummies. From the Ptolemaic Kingdom onward, Ancient Egyptian recipes for kyphi, an aromatic used for burning, included cinnamon and cassia. The gifts of Hellenistic rulers to temples sometimes included cassia and cinnamon. During the 1500s, Ferdinand Magellan was searching for spices on behalf of Spain, and in the Philippines found Cinnamomum mindanaense, which was closely related to C. zeylanicum, the cinnamon found in Sri Lanka [2,5].

Types of Cinnamon

1. **INDONESIAN CINNAMON**

It is also known as Korintje cinnamon. Around 70% of North America uses Cassia Cinnamon. Indonesia is the chief supplier of Cassia Cinnamon. This is because it is much cheaper than Ceylon Cinnamon which tends to be expensive because of the hand crafted process needed to harvest it and roll it in multiple thin layers. Cassia Cinnamon is a hard bark that is spicy, smells pretty strong and sometimes bitter [6].

2. **SAIGON CINNAMON**

This is another Cinnamon which has gained in popularity recently. Originating in Vietnam this cinnamon admittedly makes a good first impression in terms of sheer aroma and taste. It tends to be even more spicy and strong and sweet at the same time. It's a little more expensive than Cassia Cinnamon but has the highest levels of Coumarin, also known as Vietnamese Cassia cinnamon. Extra spicy yet sweeter in taste, Contains high level of Coumarin at around 8% [1,7] .

3. **CHINESE CINNAMON**

The quality of Chinese cinnamon is not great. While part of the Cassia Cinnamon family it tends to be more pungent, less sweet and slightly bitter. Possibly because of the soil conditions. Cinnamon quality can vary depending on soil conditions. Most Chinese Cinnamon probably stays in China, used in many of the Chinese medications for coughs, phlegm and other illnesses [8].

4. **CEYLON CINNAMON**

Ceylon Cinnamon grows best in sandy soil. The tree grows to about 49 feet in its natural state but is cut earlier for commercial purposes. It has a thin bark. The leaves are shiny and leathery on top and dull on the underside. The flowers are white with an oval sized fruit which becomes bluish with white spots when ripe. The leaves when crushed are spicy and hot to taste while peeling away the outer bark of the tree yields a very strong cinnamon smell, also called as True cinnamon, Also known as Mexican cinnamon, because Mexico is biggest importer of Ceylon cinnamon from Sri Lanka. Made of thin, fragile layers rolled into a quill-like shape. Has a mild, subtle sweet taste with fragrant smell, Light brown in color [5,9].

Cinnamon Composition

Ground cinnamon is composed of around 11% water, 81% carbohydrates (including 53% dietary fiber), 4% protein, and 1% fat. In a 100 gram reference amount, ground cinnamon is a rich source of calcium (100% of the Daily Value (DV)), iron (64% DV), and vitamin K (30% DV). Cinnamon consists of a variety of resinous compounds, including cinnamaldehyde, cinnamate, cinnamic acid, and numerous essential oils. Cinnamon leaf oil contains high concentrations of eugenol (Ceylon type 80-88%; Seychelles type 87-96%); it also contains many of the major constituents present in cinnamon bark oil (e.g., cinnamaldehyde, cinnamyl acetate, eugenol acetate, and benzaldehyde) as well as other minor compounds, including humulene [6-10].

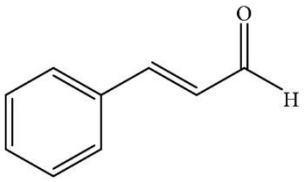

Fig- Cinnamaldehyde

Cultivation of Cinnamon

Cinnamon is naturally seen in the forests of Western Ghats and commercially cultivated in Kerala, Karnataka and Tamil Nadu. Being a hardy plant, Cinnamon is adapted to a wide range of climatic conditions. It grows well at an altitude of about 1,000m and an annual rainfall of 200–250cm is ideal for its cultivation. The stems must be processed immediately after harvesting while the inner bark is still wet. The cut stems are processed by scraping off the outer bark, then beating the branch evenly with a hammer to loosen the inner bark, which is then pried off in long rolls. Only 0.5 mm (0.02 in) of the inner bark is used the outer, woody portion is discarded, leaving metre-long cinnamon strips that curl into rolls ("quills") on drying [11]. The processed bark dries completely in four to six hours, provided it is in a well-ventilated and relatively warm environment. Once dry, the bark is cut into 5 to 10 cm (2 to 4 in) lengths for sale [5,12].

Health Benefits

1. It has anti-viral, anti-bacterial and anti-fungal properties

Cinnamon is thought to have many medicinal and soothing properties, and is used frequently in Chinese herbal medicine. The distinctive smell and flavour of cinnamon comes from the essential oils contained in the bark, called cinnamaldehyde. Cinnamaldehyde displays anti-viral, anti-bacterial and anti-fungal properties [13].

2. Contains antioxidants with anti-inflammatory effects

Cinnamon also contains large amounts of polyphenol antioxidants. Antioxidants can help protect the body from disease and are found in fruits, vegetables, herbs and spices. The antioxidants in cinnamon have been found to have anti-inflammatory effects.It helps your body fight infections and repair tissue damage [14].

3. Its prebiotic properties may improve gut health

Some spices, including cinnamon, have prebiotic properties that promote the growth of beneficial bacteria and help suppress the growth of pathogenic bacteria. Therefore, including spices regularly in your diet may help improve gut health. Cinnamon is also a useful source of manganese and contains small amounts of calcium and fibre [8].

4. Reduces blood pressure

There is some evidence to suggest that the consumption of cinnamon is associated with a short-term reduction in blood pressure. Although the evidence is hopeful, it would be premature to recommend cinnamon for blood pressure control until a comprehensive randomised controlled trial (RCT) involving a larger number of patients has been carried out. More recent studies have, to date, shown less promising findings [12,15].

5. Lowers blood sugar and risk of type 2 diabetes

It has been suggested that cinnamon can have a moderate effect in improving glycaemic control and supporting the management of type 2 diabetes. However, conclusions are mixed, and larger randomised

controlled trials are needed in well-defined population groups using standardised interventions in order to definitively determine the efficacy of using cinnamon in subjects with diabetes. However, a small amount used at breakfast or in baking will not do any harm, and can be eaten as part of a balanced diet.The effective dose is typically 1–6 grams or around 0.5–2 teaspoons of cinnamon per day [16] .

Fig- Health benefits of cinnamon

6. Relieves digestive discomfort

Cinnamon extract has been used to alleviate gastrointestinal problems in both Eastern and Western medicine for years. It has been described as a carminative, renowned for its digestive, anti-microbial and anti-inflammatory properties. In traditional Ayurvedic medicine, cinnamon bark oil is used for treating flatulence and digestive imbalance. It is believed that the warmth of cinnamon increases blood flow and improves blood oxygen levels to help fight off illness. To alleviate digestive symptoms, cinnamon is taken as part of a hot drink (much like a tea). In this instance, it's easier to use ground cinnamon rather than trying to grate cinnamon sticks yourself [10,16].

7. Cinnamon Is Loaded With Antioxidants

Antioxidants protect your body from oxidative damage caused by free radicals. Cinnamon is loaded with powerful antioxidants, such as polyphenols. a study that compared the antioxidant activity of 26 spices, cinnamon wound up as the clear winner, even outranking "superfoods" like garlic and oregano. In fact, it is so powerful that cinnamon can be used as a natural food preservative [17].

Side Effects & Rick

1. Body heat
2. Antiobiotic Conflict.
3. Increased Heart Rate
4. Skin Irritation
5. Allergies
6. Blood Thinner
7. Reduce blood sugar level
8. Problem for Pregnant women
9. Liver damage
10. Mouth sores [4-8].

Conclusion

Cinnamon has been used as a spice for flavoring foods and as a natural traditional remedy in many cultures throughout the world. From the findings of various studies, it can be concluded that cinnamon possess many specific functional properties such as antioxidant, anti-inflammatory, antimicrobial, and acaricidal activities, in addition to its medicinal values in relieving and treating a number of serious illnesses such as diabetes, hyper lipidemia, gastrointestinal disorders, AD, and cancer.

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