

# Gautam Buddha university

## Cinnamon<sub>(Dalchini)</sub>

19/BFT/004

products and spices tec.

Name- Chanchal

roll no. –

course – plantation

## Topic

- Introduction
- Chemical composition
- Chemistry of the volatiles
- Enzymes synthesis of flavor identical
- Quality control

## Introduction

### Cinnamon

- The genus *Cinnamomum*.
- family : Lauraceae consists of 250 species of trees and shrubs distributed in Southeast , Asia , China and Australia.
- Sri Lanka is major cinnamon producing country in the world and it controls 60% of the world cinnamon trade.
- Cinnamon is a small evergreen tree 10 -15m tall.
- Cinnamon is a valuable spice that is obtained from the bark of an evergreen tree(*Cinnamomum zeylanicum*).
- In many instances, very little distinction is made between the bark of *Cinnamomum verum* and *Cinnamomum cassia* (Chinese cinnamon).
- *C.verum* provides cinnamon bark of the finest quality and oil of cinnamon Whereas *C.cassia* provides cassia bark and oil of cassia.

## Chemical compositions

### cinnamon bark contains

- Moisture 9.9%
- Protein 4.65%
- Fat (ether extract) 2.2%
- Fibre 20.3%
- Carbohydrates 59.55%
- Total ash 3.55%
- Calcium 1.6%
- Phosphorus 0.05%
- iron 0.04%
- Sodium 0.01%
- Potassium 0.4%
- Vitamin (mg/100g) B1 0.14; B2 0.21; C39.8; niacin 1.9; A175 I.U.

It has a calorie value( food energy) of 355/100g. It also contains up to 4% volatile oil.

Cinnamon possesses a delicate ,spicy, aroma, which is attributed to its volatile

oil.

Volatiles components are present in all parts including root bark, fruits, flower ,twigs and branches.

The major component of leaf is Eugenol, while that of bark is cinnamonaldehyde.

- Leaf oil : contained 0.24-3.0% volatile oil.

The principal component of leaf oil, namely, eugenol, varies from 65 to 92%

- Bark oil: the volatile oil content in cinnamon bark varies from 0.4 to 2.8%

The commercial sample contained 75% cinnamaldehyde, 5% cinnamyl acetate, 3.3% caryophyllene, 2.4% linalool and 2.2%

## Production of quills

There are a number of stages in the production of quills

- Peeling : the rough outer bark is first scraped off with a special knife. Then the scraped portion is polished with a brass rod to facilitate easy peeling.
- Rolling : the bark slips are piled up in small enclosures made by sticks. Then they are covered with dry leaves and mat to preserve the moisture for the next day's operation and also to enhance slight fermentation.
- Piping : the outer skin is scraped off with a small curved knife . The scraped slips are graded according to thickness . the graded slips are trimmed end are cut and pressed over pipes. Then they are allowed to dry.

- **Drying** : the quills are arranged in parallel lines in the shade for drying as direct exposure to the sun at this stage would result in warping. The dried quills are yellowish brown in color.  
The quills are bleached by sulfur treatment for about 8 hour ( if necessary).
- **Grading**: The quality of cinnamon is judged by the thickness of the bark , the  
the appearance, and the aroma flavor.

classification	Description	measurements
Quills	Alba	Less than 6mm diameter
	continental	Less than 16mm diameter
	Mexican	Less than 19 mm diameter
	Hamburg	Less than 32 mm diameter

**Grinding** : The heat of grinding is very destructive to the volatile oil content. The cryogenic grinding, does retain more volatiles and it is good in the case of the cinnamon.

**Packaging** : Quills is packed into the moisture proof polypropylene bags for sale.

The sealing machine can be used to seal the bag.

**Storage**. cinnamon should be store in a cool, dry place. Excessive heat will

volatilise and dissipate its aromatic essential oils, and high humidity will tend to cake it.

**Quality specifications**: The American spice trade association (ASTA) has suggested moisture level to be at 14% for all Cinnamomum species. Most good quality cinnamon should have ash and acid insoluble ash levels less than 5% and 1% respectively.

## Main uses in the food industry

- A large proportion of the total usage of cinnamon is for culinary purpose.
- It can be bought as whole sticks , used to flavor rice and meat dishes, but recipes can also call for ground cinnamon .
- Cinnamon being more delicate is mostly used in dessert dishes.
- Hot apple cider just does not the same without a cinnamon sticks.
- In Indian cuisine, it is used in curries and it is main ingredient in garam masala.
- Cinnamon ticks are used in beverages, boiled beef , pickles, chutneys and ketchup.



*Thank You!*