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BOTANICAL REVIEW ON PLANTS USED FOR THEIR DIGESTIVE PROPERTIES; CINNAMON, LONG PEPPER AND AMLA

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ABSTRACT
The traditional system of health management based on the drugs obtained from natural sources and drugs of plant sources play major role in this regard. The plant based drugs helps to treat many diseases including digestive impairment or indigestion. There are many plants which are traditionally known for their digestive actions; Cinnamon, Long pepper and Amla are some of them. These plants used to cure abnormality in digesting, dyspepsia, belching or flatulence and upset stomach, etc. Present article explored botanical review on plants used for digestive problems w.s.r. to descriptions of Cinnamon, Long pepper and Amla.

KEYWORDS: *Botany, Plant, Cinnamon, Long pepper, Amla.*

INTRODUCTION

The traditional science of medicines provides several natural drugs based on the plant sources for different therapeutic purpose. There are many plants used for curing problems related to the digestive system, these plants includes; Cinnamon, Long pepper and Amla. Here we are exploring botanical review on these plants with their therapeutic importance. These plants possess specific properties as depicted in **Figure 1** therefore helps in digestion and cure digestive ailments.

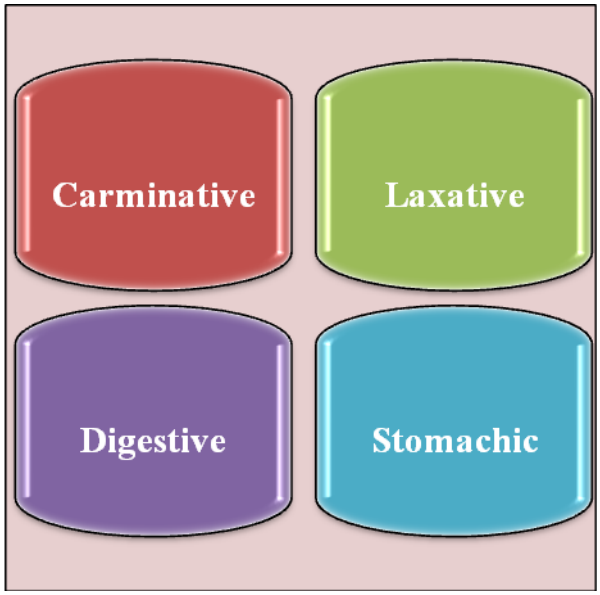

Figure 1: Properties of Cinnamon, Long pepper and Amla that helps to cure digestive problems.

CINNAMON

Cinnamon is evergreen trees belonging to the genus *Cinnamomum*, botanical name is Cinnamomum, this name derives from the Arabic term "amomon", that means "fragrant spice plant". Some types of cinnamon also referred cassia while its other names in different languages are; Dalchini (Hindi), Canela (Spanish), Rougui (Chinese), Cannelle (French), Zimt (German) and Qarfa (Arabic).

Cinnamon (Ceylon) possesses yellowish brown colour, reddish brown colour (Indonesian) and darker brown (Chinese). Dried bark posses cylindrical quills and used as sticks. Ceylon cinnamon sticks having multilayered and fragile nature while Indonesian sticks possess single thick layer and less fragile as compared to Indonesian sticks. Cinnamon offers spicy, woody, sweet, astringent and bitter taste.

Cinnamon is tree with branches that grows in later stage, after cutting, new branches regenerate and typical tree can be harvested for longer period of time. The outer bark first scraped off and then inner bark stripped, laid in the sun to curls into cylindrical quills.

The bark of plant mainly used for therapeutic purposes, it is used for its aroma and fragrance in food stuffs and medicinal products. The chief constituents of cinnamon are cinnamaldehyde which is responsible for fragrance and various biological activities. Cinnamon bark contains catechins and procyanidins. Chemically it also contains cinnamate, cinnamic acid, essential oils, eugenol, L-borneol, E-nerolidol, α-terpineol and terpinolene, etc.

Traditionally it is used as flavoring agent, improves health of the colon, and thereby provides health benefits in metabolic activities. Cinnamon also used as coagulant to prevents bleeding, improves process of tissue regeneration, possess antimicrobial, antifungal, antioxidant, anti-inflammatory, antitermitic, insecticidal, anticancer and digestive properties.[1-4]

LONG PEPPER

Kingdom:	Plantae
Division:	Magnoliophyta
Class:	Magnoliopsida
Order:	Piperales
Family:	Piperaceae
Genus:	*Piper*
Species:	*Longum*
Botanical name	*Piper longum*

Distribution

Long pepper is native to Indo-Malaya region, growing in the tropical rainforests of India. Long pepper also grows in hills of West Bengal, Madhya Pradesh, Maharashtra, Eastern Uttar Pradesh, Kerala, Tamil Nadu and Karnataka. It found in the forests of Andaman, Nicobar and Andhra Pradesh, etc.

The plant requires hot and humid condition with partial shaded atmosphere can be cultivated in laterite soils containing high organic matter and water holding capacity. Light and porous soil considered most suitable for its cultivation.

Long pepper can be propagated through stem/vine cuttings at beginning during rainy season, can also be propagated through terminal stem cuttings of one year old plant.

Morphological Characteristics

- The fruit is slender, dark green when immature and turned to blackish-green after their maturation.
- Tree is branched.
- Leaves are 4-8 cm long and 5 cm wide; lower leaves are ovate with big lobes at base, while upper leaves are green, cordate with petiole.
- The shoots are drooping.
- Flowers are arranged in erect spikes and female spikes are 1.25-2.00 cm long. Male spikes are slender and 2.5-7.5 cm long.

Principal Constituents

The fruit contains piperine, methyl piperine, piperettine, asarinine, piperundecalidine, piperlonguminine, pergumidiene, brachystamide-B, retrofractamide A, N-isobutyl decadienamide, brachystine, pipercide, brachyamide-A, longamide, piperine, piperlongumine, piperderidine, cinnamoyl-piperidine, piperlonguminine and guineesine, etc.

Therapeutic uses

- Plant root is used as carminative, liver tonic and stomachic therefore recommended as digestive drug to treat diseases related to the digestive system.
- Fruits used as diuretic, digestive and carminative agent.
- Plant is also useful to treat inflammation of the liver.
- Helps in joints pain, cure snake bite and scorpion bite.
- Plant is useful for dyspepsia, anorexia, asthma, abdominal pain and fever.[5,6]

AMLA

- ✓ Kingdom Plantae
- ✓ Division Spermatophyta
- ✓ Subdivision Angiospermae
- ✓ Class Dicotyledonae
- ✓ Family Euphorbiaceae
- ✓ Genus Emblica
- ✓ Species *Emblicaofficinalis*

The Amla traditional plant used for nutritional and medicinal benefits, plant also known as Amalaki, Amluki, Amla, Amlati, Aunlah, Avala, Amlika, Anuli, Anvula, Aungra and Daula, etc. It is a natural antioxidant since it possesses "Vitamin C" in huge amount.

Distribution

The plant is distributed throughout tropical and subtropical India, in deciduous forests, region of Himalaya, Nagpur, Bihar, west Bengal and Karnataka, etc.

Morphology

It is small or moderate size tree with grey bark and yellow flowers. The leaves are linear-oblong with rounded base and acute apex, set along branchlets. The greenish-yellowflowers in axillary fascicles, tender fruits are green, globose, indented at base and fleshy shining. The stem present with lobed, splitting into segments, the skin is thin and translucent. Ripe fruits possess astringent, acidic and bitter taste. The mesocarp of fruit is edible while endocarp forms hard stone that encages seeds.

Chemical Composition

Plant fruit contains gallic acid, malic acid, mucic acid, putrajivain A, elacocarpusin, mucic acid, tannins like emblicanin A and B, pedunculagin, methyl gallate, corilagin, furosin, quercetin, phyllantine, phyllantidine and "Vitamin C". Minerals, protein, glutamic acid, aspartic acid, alanine and proline, etc. also present in plant.

Therapeutic Importance

It offers antibacterial, anti-fungal, antioxidant, antiviral and anti-stress activity. It improves immunity, fight

against hypertension, diabetes, cough and cold, helps to treat inflammatory conditions. It also used for bleeding disorders, to improves stamina and physical strength, etc. The bark used for gonorrhea, diarrhea, myalgia and jaundice. The flowers are good for conjunctivitis, dyspepsia, diarrhea, dysentery and inflammation. Fruits offer carminative, digestive, stomachic and laxative properties therefore helps in digestive ailments. Plant is considered good for anemia, hepatic disorders, jaundice, diarrhea, haemorrhages, menorrhagia, cardiac disorders, leucorrhoea and asthma, etc.[7-10]

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