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## THE ROLE OF CARDAMOM OIL IN ORAL HEALTH

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**ABSTRACT:** Cardamom is a seed pod, known since antiquity for its culinary and medicinal properties. The spice is native to the evergreen rain forest of southern India and now grown in only a few tropical countries. Cardamom has also been found to regulate inflammatory and immune activities and may be useful for cancer prevention. Cardamom extracts are effective against oral pathogenic bacteria like *Streptococcus mutans* and *Candida albicans*. Most people use cardamom as a spice and are largely unaware of its numerous health benefits. This article briefs the various health benefits of cardamom.

**Keywords:** Cardamom, Spice, Medicinal Properties, Oral Pathogens

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**INTRODUCTION:** Medicinal properties of various plant extract are widely explored to act as an alternative to synthetic antimicrobial agents. Cardamom also referred to as “queen of spices” due to its pleasant aroma and taste has a history as old as the human race. Cardamom is native to the evergreen forests of India.

Some of the health benefits of this peppery, citrusy spice are now making their way into modern studies <sup>1</sup>. Cardamom oil is extracted from *Elettaria cardamomum* of the Zingiberaceae family and is also known as cardamomi, cardomum and Mysore cardamom <sup>2</sup>.

### Scientific Classification of Cardamom:

**Botanical Name:** *Elettaria cardamomum*

Kingdom: Plantae  
Order: Zingiberales  
Family: Zingiberaceae, the ginger family  
Genera: *Elettaria*, *Amomum*

**Other Names:** Cardamom, cardamon, true cardamom, green cardamom, elaichi, choti.

**Cardamom- A Profile:** The plant grows in a thick clump of up to 20 leafy shoots. It can reach a height of between 2 to almost 6 m. A perennial, reed-like herb which grows up to 10 feet high, with long, silky and blade-shaped leaves. Its long sheathing stems bear small, usually yellow, flowers with purple tips, followed by ovoid fruit. The fruit is about half an inch long, turning gray when ripe <sup>3</sup>.

**Leaves** - dark green, long and sword-shaped. The underside is paler and may have a covering of tiny hairs.

**Flowers** - on a long flowering stalk which can grow to more than 1 m long. They are both male and female and are pale green. One of the petals is white and streaked with violet.

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FIG. 1: LEAVES OF CARDAMOM



FIG. 2: FLOWER OF CARDAMOM

**Fruits** - pale green to yellow and elongated oval-shape. Each fruit has 3 chambers filled with small aromatic seeds, each about 3 mm long. The fruits and seeds dry to a straw brown color and are widely used as flavorings <sup>4</sup>.



FIG. 3: FLOWER OF CARDAMOM

**Extraction:** The essential oil of Cardamom is extracted by steam distillation from the seeds of the fruit gathered just before they are ripe. The yield is 1-5%.

**Chemical Composition:** The main chemical components of cardamom oil are  $\alpha$ -pinene,  $\beta$ -

pinene, sabinene, myrcene,  $\alpha$ -phellandrene, limonene, 1,8-cineole,  $\gamma$ -terpinene, p-cymene, terpinolene, linalool, linalyl acetate, terpinen-4-oil,  $\alpha$ -terpineol,  $\alpha$ -terpineol acetate, citronellol, nerol, geraniol, methyl eugenol, and trans-nerolidol.

**Types of Cardamom:** Green cardamoms are the 'true' dried cardamom fruits and are sweetly fragrant with a slightly pungent flavour. Brown or black varieties of cardamom are larger, coarser in flavour and scent and tend to be used more in meat dishes and pickles. These 'false' cardamoms are found in South Asia, China, Nepal, Indonesia, and Africa.

**Uses:**

**In Oral Health:**

**Bad Breath:** Cardamom is one of the most effective remedies against halitosis. Simply chewing on the seeds eliminates bad odours. Cardamom is even used in some chewing gums because of its effectiveness, billed as a sure fire cure to the most offensive breath <sup>5,6</sup>.

**Anti-cariou:** Cardamom is widely used in South Asia to fight tooth and gum decay and disease. It can also be used to help soothe a sore throat and relieve hoarseness of voice <sup>7</sup>.

**Antiseptic and Antimicrobial:** Cardamom essential oil has very strong antiseptic and antimicrobial properties, which are safe as well. If used as a mouth wash by adding a few drops of this oil in water, it disinfects the oral cavity of all germs. <sup>8</sup> Gargling with an infusion of cardamom cures pharyngitis [inflammation of the mucous membrane of the pharynx], sore throat, relaxes uvula [the fleshy conical portion at the back of the tongue], and hoarseness during the infective stage of influenza. Gargling with this infusion daily can also be useful in averting bouts of flu.

**Systemic Uses:**

**Digestive and Stomachic:** It is the essential oil in cardamom that makes it such a good digestive. This oil boosts digestion by stimulating the whole digestive system. It is also stomachic, which means that it keeps the stomach healthy and functioning properly. It helps maintain the proper secretion of gastric juices, acids, and bile in the stomach. It also protects the stomach from infections.

**Stimulant:** Cardamom essential oil stimulates your entire system. This stimulating effect also boosts your spirits in cases of depression or fatigue. It also stimulates the secretion of various enzymes and hormones, gastric juices, peristaltic motion, circulation, and excretion, thus maintaining proper metabolic action throughout the body<sup>9</sup>.

**Warming:** Cardamom oil has a warming effect. This means that it heats the body, promotes sweating, helps clear congestion and coughs, while also relieving symptoms of the common cold. It also provides relief from headaches that result from illness and can be used to cure diarrhea caused by extreme cold.

**Diuretic:** It promotes urination, which helps people lose weight, lowers blood pressure, removes toxins, and cleans calcium and urea deposits from the kidneys.

**Aphrodisiac:** Cardamom oil has an arousing effect that can help cure sexual weakness, erectile dysfunctions, impotence, loss of libido, and frigidity.

#### **Other Uses:**

**Flavouring:** Cardamom is widely used as a flavouring for savoury and sweet dishes in South Asia, and the antibacterial properties of its oil are exploited as a food preservative. The dried fruits and seeds of cardamom are used to add a unique taste to rice, meat, vegetables, and other savoury dishes. Whole and ground cardamom seeds are added to flavour coffee, tea, confectionery, and baked goods.

It is highly valued in Kashmir as an essential ingredient of the drink kahwa, which is fragrant and sweet Kashmiri black tea. Cardamom oleoresin has similar applications to the essential oil. It is mainly used to flavour meat products with a short shelf life, such as sausages<sup>10</sup>.

**Cancer Prevention:** Cardamom contains IC3 (indole-3-carbinol) and DIM(diindolylmethane). These phytochemicals are well-known cancer fighters, helping to specifically ward off hormone-responding cancers like breast cancer, ovarian cancer, and prostate cancer. Early research suggests that consuming cardamom regularly may help with preventing these forms of cancer. In addition to

these specific medicinal uses, cardamom contains an abundance of antioxidants, which protect the body against aging and stress and fight common sicknesses and bodily strife. In rat studies, cardamom has been shown to increase glutathione, an antioxidant enzyme found naturally in our bodies.

**Ayurvedic Medicine:** In Ayurvedic medicine, cardamom is used to treat disorders of the stomach and urinary system, asthma, bronchitis, and heart problems. When mixed with neem and camphor, cardamom is used as a nasal preparation to treat colds. An infusion of cardamom can be used as a gargle to relieve sore throats, which has led to its use in cough sweets<sup>11</sup>.

**Preservative:** Because the oil has antibacterial activity, it has been added to foods as a preservative at low levels. It is used in low quantities, so it doesn't taint the flavour of the food<sup>12</sup>.

**Cosmetics and Chewing Gum:** Cardamom oil is also used in cosmetics because of its cooling properties, and it is pale to a colorless liquid that can be easily incorporated into different solutions. The taste is warm and spicy and can be used as a flavour to chewing gum.

**Other Benefits:** Cardamom oil helps to neutralize the effects of tobacco, insect bites, and even the ingestion of mild poisons. Furthermore, it can clear the bowels, cure colic, remove bad breath, heal oral infections, and alleviate the pain of toothaches<sup>13</sup>.

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