

# A Review on a Champion Spice

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**Abstract:** Cloves are aromatic flower buds of the *Syzygium aromaticum* tree of the *Myrtaceae* family. They grow naturally in Indonesia's Marc Islands (or Maluku Islands) in and are commonly used as spices. Cloves are available all year round as the harvest times vary from country to country. Cloves are used as antioxidants, helps protect against cancer, kills bacteria, helps liver health, regulates blood sugar levels, and helps many other health problems. The clove tree is an evergreen tree that grows to a height of 8 to 12 meters and has large leaves and purple flowers in clusters at the ends. Cloves contain an essential oil extract called eugenol. It accounts for 72-90%. Cloves are volatile oils. Zanzibar and Pemba are currently the world's largest producers of cloves. . A drop of clove oil is 400 times more powerful as an anti-oxidant than wolf berries or blueberries. it possess antioxidant, anti-fungal, anti-viral, anti-microbial, anti-diabetic, anti-inflammatory, antithrombotic, anesthetic, pain reliving and insect repellent proper .A new application of clove as larvicidal agent is an interesting strategy to combat dengue which is a serious health problem in Brazil and other tropical countries.

**Keywords:** Syzygium aromaticum, Spice, Volatile, Antioxidant, Laung

## I. INTRODUCTION

Clove was first introduced to India around 1800 AD by the East India company in its 'spice garden' in Courtallam, Tamil Nadu. Induced by the success of its introduction, cultivation of clove was extended during the period after 1850 AD to Nilgiris (Burliar), southern region of the erstwhile Travancore State and the slopes of Western Ghats. The important clove growing districts in India now are Nilgiris, Tirunelveli, Kanyakumari, Nagercoil and Ramanathapuram districts of Tamil Nadu; Kozhikode, Kottayam, Kollam and Thiruvananthapuram districts of Kerala and South Kanara district of Karnataka. A drop of clove oil is 400 times more powerful as an anti-oxidant than wolf berries or blueberries. Health benefits from the use of clove have been known over the centuries. It is beneficial as a home remedy in curing several ailments / diseases. In addition to its culinary uses, the clove buds have an abundance of medicinal and recreational uses. Several reports document the antibacterial, antiviral, anticarcinogenic, and antifungal activity of several aromatic herbs, including cinnamon, oregano, cloves, thyme, and mint. However, cloves have received a lot of attention due to their powerful antibacterial and antioxidant effects alongside other spices [9].



The effective role of cloves in the control of various degenerative diseases is due to the presence of high concentrations of various chemical components with antioxidant activity [10,11]. Clove Essential Oil (CEO) is traditionally used to treat burns and wounds, as a dental pain reliever, and for the treatment of dental infections and toothaches. In addition to its use has been documented in a variety of industrial applications and is widely used as a cleaning agent for perfumes, soaps, and histological work [12]. Clove is an Indian and Chinese herbal medicine used as a warming and stimulant [7].

Eugenol and clove oil have been documented to have a potent effect on fatty liver and dyslipidemia by a different mechanism of action <sup>[17]</sup>.

**Synonyms:** Clovos, Caryophyllus, Lavang, Laung, Grambu, Grampus, Krambu.

**Biological Source:** It consist of a dried flower bud of *Eugenia caryophyllus*.

**Botanical Classification**

<b>Kingdom</b>	Plantae
<b>Sub Kingdom</b>	Tracheobionta
<b>Super Division</b>	Spermatophyta
<b>Division</b>	Magnoliophyta
<b>Class</b>	Magnoliopsida
<b>Subclass</b>	Rosidae
<b>Order</b>	Myrtales
<b>Family</b>	Myrtaceae
<b>Genus</b>	<i>Syzygium</i>
<b>Species</b>	<i>aromaticum</i>

**International Name**

- Arabic: Kabshqarunfil, Kabshqaranful
- Bulgarian: Karamfil
- Chinese: Dingxiang
- Dutch: Kruidnagel
- Danish: Nellike
- French: Giroflier, Cloudegirofle
- English: cloves, cloves
- Greek: Garifaro
- Georgian: Mikaki, Mikusaki
- Hungarian: Szegfu
- Indonesian: Cengke, Cengkeh
- Italian: Chiodo di garofano
- Japanese: Jirohula, Clove, Klob
- Korean: Jeonghyang
- Latvian: Krustnaglinas
- Nepali: Lwaang
- Norwegian: Nerik
- Portuguese: Cravo de India
- Persian: Mikhak
- Pashto: Kara
- Russian: Gvozdika, Pazhitnikgrecheski, Shambala, Pazhitnikcennoj
- Spanish: Clavo, Clavo de olor.

**II. DESCRIPTION**

Cloves are the aromatic dried buds of a tree (*Eugenia caryophyllata* also sometimes *Syzygium aromaticum*) used as a spice in virtually all the world's cuisine. The term 'Clove' is derived from the French word 'Clou' and the English word 'Clout', both meaning 'nail'- from the likeness of the flower bud of the Clove tree to a broadheaded nail. The

Clove tree is an evergreen tree, which grows to a height ranging from 8-12m, having large square leaves and sanguine flowers in numerous groups of terminal clusters. The flower buds are at first of a pale color and gradually become green, after which they develop into a bright red, when they are ready for collecting.

### III. PHARMACOLOGICAL ACTIVITIES

#### 3.1 Anti-Microbial Activity

Cloves represent one of the Mother Nature's premier antiseptic. Clove oil was found to be more effective than sodium propionate (standard food preservative) against some food borne microbes. Clove oil was found to be very effective against Staphylococcus species. Amongst the fungi, Aspergillus niger was found to be highly sensitive to the clove oil. Essential oil of clove, dispersed (0.4% v/v) in a concentrated sugar solution, had a germicidal effect against various bacteria (S. Aureus, Pneumoniae, Pseudomonas aeruginosa, Clostridium perfringens, E.coli) and Candida albicans. Clove is also included in Dr Huda Clark's protocol for elimination of parasites from the digestive system. It has been found that a 0.05% solution of eugenol is sufficient to kill bacillus tuberculosis. Clove oil showed antimicrobial activity against some human pathogenic bacteria resistant to certain antibiotics.<sup>[14]</sup> Clove oil and its main component eugenol show considerable antifungal activity against Candida Aspergillus and dermatophyte species. It also shows activity against clinically relevant fungi including fluconazole-resistant strains.<sup>[15]</sup>

#### 3.2 Anti-Cancer Activity

Anti-Cancer Activity-To maintain protection from cancer, eugenol in clove has strong anti-cancer properties and helps control lung cancer, breast cancer, and ovarian cancer in the early stages, so more cloves Please eat Carnations also reduced the abnormal accumulation of cells in specific areas of lung tissue and suppressed the growth of precancerous cells by more than 85 percent.<sup>[15]</sup>

In another in vitro study, researchers found that clove oil stopped the growth of several cancer cell lines, including but not limited to breast, cervical, and colon cancers. Clove extract also increased cell death in colon cancer cell lines and interfered with cell division.<sup>[16]</sup>

#### 3.3 Antifungal Activity

-This study shows that clove oil and eugenol have significant antifungal activity against clinically relevant fungi, including the fluconazole resistant strain, in the treatment of fungal infections. It deserves further investigation of clinical use. A study showed that clove essential oils are fast and effective in killing fungal infections.<sup>[17]</sup>

#### Uses

1. Syzygium aromaticum Clove oil (Laung) is applied for toothache, dental caries and pyorrhea.
2. General treatments for headaches, sore throats, dental and respiratory illnesses, digestive illnesses in traditional medicine Australia and Asian countries.
3. Hot water extract of clove plants Proliferation of S. mutans (Uju DE2011).
4. Clove oil shows Actinobacillus actinomycetemcomitans, Capnocytophaga gingivalis, Fusobacterium nucleatum, Porphyromonas gingivalis, Prevotella intermedia, Prevotella melaninogenica, Staphylococcus aureus, Pseudomonas aeruginosa. The antibacterial effect observed with clove oil suggests its use Auxiliary for periodontal treatment. Oral ingestion of clove suppresses the overgrowth of C. albicans in the gastrointestinal tract, including the buccal cavity.
5. Clove oil in the form of clove paste in the treatment of stomatitis acts as a biocide that is also active against invading bacteria, fungi and even invading larvae.
6. Eugenia has properties such as anti-inflammatory, analgesia, antipyretic, antifungal and is used for treatment of gastric ulcer. Important anti The inflammatory activity is 0.025 ml / kg.
7. At low concentrations it acts as an antioxidant and anti-inflammatory agent, its high concentration acts as an antioxidant and is due to increased tissue formation. Harmful free radicals antioxidants are usually thought to neutralize the free radicals of the lipid chain by contributing to the atoms of hydrogen from the phenolic hydroxyl group. This converts the phenolic group into a stable free radical and no further initiation or propagation. Oxidation of Lipids.

**IV. CONCLUSION**

Clove is a medically important drug, antifungal, antiviral, antibacterial, anti-inflammatory, antithrombotic, antifever, analgesic, antispasmodic, antifungal, pesticide, It has various uses such as anti-inflammatory properties. This oil is used to treat health conditions such as toothache, indigestion, cough, asthma, headache, stress and blood problems. Cloves are used to treat various health conditions including intestinal parasites, migraine headaches, colds, impotence, and gastrointestinal problems such as nausea, vomiting, diarrhea, and gas. Researcher has ample room to develop an effective formulation containing cloves.

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