

A Comprehensive Review on Clove

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Abstract: Clove (*Syzygium aromaticum*) is one of the most valuable spices that have been used traditionally as food preservative and for many therapeutic purposes. Clove is native of Indonesia but it has also been cultured in several parts of the world including Pakistan. This plant represents one of the richest sources of phenolic constituents as eugenol, and eugenol acetate and possesses great potential for pharmaceutical, cosmetic, food and agricultural applications. This article includes main studies reporting the phytochemical profile and pharmacological activities of clove and eugenol. The antioxidant and antimicrobial activities of clove are higher than many fruits, vegetables and other spices. Toxicological studies are also mentioned. The different studies reviewed in current work authenticate the traditional use of clove as food preservative and medicinal plant. Clove is a native of Indonesia but is also cultivated in many coastal areas at higher altitudes around the world. Health benefits of clove have been proved from centuries in treatment of many ailments and disease. Clove also shows antimicrobial, antiviral, anti-inflammatory, hepatoprotective, anti-stress, antinociceptive, anesthetic activities. Larvicidal activity of clove in dengue is a new application. Commercially, clove has been used for volatile oil extraction in formulating medicinal, food and cosmetic products. Clove oil comprises of many phytoconstituents, eugenol being an important one of the phenolic compounds. In respect to the points mentioned, this report is one of its kind as an attempt has been made to compile knowledgeable data of clove together in this article. Pharmacological activities, botanical description, phytochemistry, toxicity studies and uses of clove have been discussed.

Keywords: Syzygium aromaticum, eugenol, antioxidant, Cloves, Laung

To conduct a comprehensive review of the existing literature on Clove (*Syzygium aromaticum*), encompassing its botanical characteristics, chemical composition, pharmacological properties, medicinal uses, and potential applications.

Objectives:-

1. Botanical and Chemical Characterization: To summarize the botanical features, chemical composition, and nutritional profile of Clove.
2. Pharmacological Properties: To review the pharmacological properties of Clove, including its antioxidant, anti-inflammatory, antimicrobial, and analgesic activities.
3. Medicinal Uses: To examine the traditional and modern medicinal uses of Clove, including its application in dental care, digestive health, and respiratory issues.
4. Potential Applications: To explore the potential applications of Clove in various industries, such as food, cosmetics, and pharmaceuticals.
5. Toxicity and Safety: To discuss the potential toxicity and safety concerns associated with Clove consumption and usage.
6. Future Research Directions: To identify gaps in current research and propose future research directions for Clove.
7. To incorporate clove in various cuisines and recipes, such as spice blends, desserts, stews, and beverages (e.g., chai, mulled wine), for its distinctive warm, sweet, and slightly spicy flavor profile

