

Unlocking the Full Potential of Clove (*Syzygium aromaticum*) Spice: An Overview of Extraction Techniques, Bioactivity, and Future Opportunities in the Food and Beverage Industry

ABSTRACT

This review article provides an overview of the bioactive compounds of clove, their health benefits, and their potential application in food and beverages. Cloves are rich in phenolic compounds, mainly eugenol, which exhibit antioxidant, anti-inflammatory, antimicrobial, antifungal, and wound-healing properties. Traditional methods of clove extraction, such as Soxhlet and maceration, have limitations. Green extraction methods, such as ultrasound-assisted extraction, pressurised liquid extraction, and microwave-assisted extraction, have shown promising results. The potential application of clove extract in various food and beverage products are also discussed. Finally, future perspectives and challenges for clove extraction are highlighted. Overall, the review highlights the potential of clove extract as a natural source of bioactive compounds for various applications in the food and beverage industry