Chapter

Essential Oils High in 1,8-Cineole of Mediterranean Flavoring Plants: Health Benefits

Sílvia Macedo Arantes, Ana Teresa Caldeira and Maria Rosário Martins

Abstract

Aromatic flavoring plants are important ingredients of the Mediterranean diet, one of the healthiest and most sustainable dietary forms, often associated with greater longevity as well as contributing to the reduction of some chronic pathologies with high mortality and morbidity. Their essential oils (EOs) are increasingly used as therapeutic agents and food supplements, due to their antioxidants, anti-inflammatory or anti-tumoral properties. The Health benefits of essential oils are closely related with their chemical constituents. The 1,8-cineole, a naturally cyclic oxygenated monoterpene, has been attributed several biological properties such as antioxidants, anti-inflammatory or antitumoral. Nevertheless, the EO properties are attributed not only to their main components but also to the synergistic effect of minor components. This review chapter focused on the chemical composition and antioxidant and anti-inflammatory potential of EOs of flavoring Lamiaceae plants, with high content in 1,8-cineole, including chemotypes of genera *Lavandula*, *Calamintha*, *Rosmarinus,* and *Thymus*, often used in the Mediterranean diet.

Keywords: natural products, 1,8-cineole, antioxidants, anti-inflammatory properties

1. Introduction

Aromatic plants are increasingly used as therapeutic agents and as food supplements, along with industrial synthesis products. The World Health Organization (WHO) estimates that more than 80% of the world population uses products based on plant extracts and/or their active components for various purposes, including health care and phytotherapy [1–3].

Essential oils (EOs) are volatile compounds, products of secondary metabolic processes of aromatic plants and despite being practically insoluble in water, can be carried away by water vapor. They are largely obtained by water distillation or using steam distillation, from different parts of the plant, including the whole plant or just the wood, roots, leaves or flowers [4, 5]. Other processes to obtain oils from plants include expression, solvent extraction, CO_2 extraction, maceration, cold pressure extraction [6]. Indeed, the species, the plant geographical conditions, and

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