Extraction and comparison of chemical constituents of the essential oils isolated from leaf and stem of

*Thymus pubescens* Boiss. & Kotschy ex Celak

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**ABSTRACT**

A comparison of the chemical composition of the essential oils obtained from the leaf and stems of *Thymus pubescens* Boiss. & Kotschy ex Celak were carried out. The oils were obtained by Hydrodistillation and were analyzed by GC and GC/MS. Seventeen constituents representing 93.1% of the essential oil of leaves and two components of the stems oil have been identified. The oil from leaf was characterized by higher amount of thymol (35.5%), linalool (21.7%), geraniol (9.0%) and γ-terpinene (3.5%). In the oil of *T. pubescens* stems, thymol (84.6%) and linalool (10.1%) were only detected as the predominant compounds. In the both sample oils, the oxygenated monoterpenes compounds predominated over sesquiterpenes.

**KEYWORDS**

*Thymus pubescens*; Labiatae; Essential oil composition; Thymol; Linalool.

**INTRODUCTION**

*Thymus* is one of the genuses in Labiatae (Syn: Lamiaceae) family. It is represented in Iran by fourteen species including 4 endemics[1]. Some species of *Thymus* are used since ancient times in folk medicine for their antiseptic, antibacterial, energetic, antitension, antidistension, anticough, sedative, antirheumatic, antiparasite and fungicidal properties. The essence of those plants have used in the food, medicinal, cosmetic and trade industries[2].

The extract of the leaves of lemon thyme, especially the oil, are strongly antiseptic, deodorant and disinfectant[3]. And it is used in aromatherapy to treat asthma and other respiratory complaints, especially in children. The leaves are dried and used in potpourri and herbal pillows[4]. Lemon thyme is also recommended for use in teas and salad dressings[5]. Thyme oil has a disinfecting effect, is good for controlling infections of the oral and pharyngeal cavity and has found use as an expectorant[6]. Genus *Thymus* is a taxonomically complex group of plants.

**RESULTS AND DISCUSSION**

The chemical compositions and those percentages of the oils of *Thymus pubescens* leave and stems are listed in TABLE 1. As it shown, the volatile oil of leaf (17 compounds, 93.1%) contained five monoterpenic hydrocarbons (9.6%), eleven oxygenated monoterpenes (81.0%) and one sesquiterpene hydrocarbons (2.5%).
Short Communication

on the antimicrobial activity of the essential oils of thyme in order to identify the responsible compounds[8].

Thymol and carvacrol, which is the main component of Thymus genus essential oils, have been considered as a biocidal, resulting in bacterial membrane perturbations that lead to leakage of intracellular ATP and potassium ions and ultimately cell death[9]. The highest content of thymol as major component was observed in both samples.

REFERENCES