CHEMISTRY JOURNAL OF MOLDOVA. General, Industrial and Ecological Chemistry. 2024, 19(2), 45-51
ISSN (p) 1857-1727 ISSN (e) 2345-1688
http://cjm.ichem.md
https://doi.org/10.19261/cjm.2024.1219

CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF *MARRUBIUM DESERTI* DE NOÉ ESSENTIAL OIL

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Abstract. The main objectives of this study were to determine the chemical composition of the essential oil of *Marrubium deserti* de Noé (EOMD) from Bechar (Algeria), and to evaluate its physicochemical properties, antibacterial and antifungal activities. The yield of EOMD was 0.29±0.008%, with the main components being *α*-phellandrene (25.05%), *β*-pinene (14.05%), and *α*-pinene (12.83%). Both gram-negative and gram-positive bacteria were significantly inhibited by EOMD with inhibition zones ranging from 7.00±0.00 mm to 22±1.33 mm, and with minimum inhibitory concentrations (MICs) and minimum bactericidal concentration values ranging from 0.0022 to 0.014 v/v; likewise, intriguing antifungal activity against pathogen fungi was noticed with MICs and minimum fungicidal concentration values ranging from 0.00125 to 0.006 v/v. Furthermore, the studied essential oil demonstrated a total suppression of the sporulation and germination of spores at concentrations as from 0.002 v/v. These results emphasize the bactericidal and fungicidal characteristics of EOMD and their prospective usage as a substitute for synthetic bactericides and fungicides.

Keywords: chemical composition, essential oil, *Marrubium deserti* de Noé, antibacterial, antifungal.

Received: 16 August 2024/ Revised final: 11 October 2024/ Accepted: 15 October 2024