

CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF THE *LEVISTICUM OFFICINALE* W.D.J. KOCH ESSENTIAL OIL

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Abstract. The chemical composition of industrially obtained *Levisticum officinale* W.D.J. Koch (lovage) essential oil of Moldavan origin was analysed by means of chromatographic (GC-MS) and spectral (IR, ¹H and ¹³C NMR) methods. According to gas chromatography-mass spectroscopy analysis of studied essential oil thirty two known and two unknown constituents were identified. The main components of *L. officinale* essential oil are monoterpenic hydrocarbons which make up to 53.50% of the total number of components. As well, *L. officinale* essential oil is characterized by a high content of oxygenated monoterpenes (alcohols, cetones and esters) which reaches up to 33.60%. For the first time the presence of 6-butyl-1,4-cycloheptadiene (0.56%) and cumarine-7-formyl-1,4-methyl (0.15%) in lovage essential oil is reported. Antibacterial and antifungal activities of mentioned oil were evaluated *in vitro* on five strains of microorganisms. It was found that lovage volatile oil (*L. officinale*) exhibits high antibacterial and antifungal properties in the range of concentrations 0.015-0.030%.

Keywords: *Levisticum officinale*, essential oil, GC-MS analysis, antibacterial activity, antifungal activity.