

LEMON BALM (*MELISSA OFFICINALIS* L.) AND ITS VARIETY “CITRONELLA” IN LOW LAND REGION OF CARPATIAN-UKRAINE

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Lemon balm (*Melissa officinalis* L.) is a native of the eastern Mediterranean region southward to Israel and Syria and eastward through the Crimea, the Caucasus, and northern Iran to Tien Shan and Pamir. It appears to have been naturalized in the Central Europe including the Carpathian Ukraine and Eastern Slovakia. Lemon balm is currently one of the most economically important aromatic and medicinal crops. This herb is cultivated in Australia, Europe, Morocco, Algeria, Peru, Cuba, Mexico, the U.S., Puerto Rico, Canada and temperate parts of Asia, as a minor medicinal, culinary, honey and ornamental plant. Lemon balm oil composition is depended upon taxon, origin, soil and climatic growing conditions, used harvest and isolation methods and effective weed protection.

The purpose of this paper has been to study the chemical characterization and antimicrobial activity of essential oils *Melissa officinalis* L. variety of “Citronella” in the conditions of cultivation in low land region of Carpatian-Ukraine

The variety “Citronella” is used for herb production. Essential oil from balm parts (herb and leaves) was isolated by distillation with boiled water. Hydro-distillation lasted for 4 hours, sample weights were 10 g of dry drug matter. The modified distillation apparatus of Coocking& Middleton were used. Identification and evaluation of balm essential oil were carried out by means of chosen analytic methods. HPLC-DAD analysis. Final balm extract was analyzed directly on Dionex UltiMate 3000 system. The an alysis of balm essential oil was carried out using a gas chromatograph Varian 3090, connected to MS Saturn 2100T integrator. Antimicrobial tests of the balm essential oil was determined using disk diffusion test (with disc diameter of 6 mm). The quantitative and qualitative characteristics of balm essential oil (0.05-0.12 % v/w) and its composition show very high content of α -citrale/geranial/ (44 %), β -citrale /neral/ (29 %) and citronellal (9 %). Rosmarinic acid can be extracted from leaves and its content determinates maximum 1.7 ± 0.1 %. Balm essential oil shows low antimicrobial and high antifungal activity. Composition of natural substances dependes upon balm taxon, origin, soil and climatic growing conditions, used harvest and isolation methods and effective weed protection.

Antibacterial effect of the oil showed the low activity against all bacterial strains. Our results confirmed higher activity of EOs on Gram-positive bacteria than against Gram-negative The balm essential oil show high antimitotic effect especially on *C.glabrata* clinic strain.

Thus, studies have shown that *Melissa officinalis* L. variety of “Citronella” in the conditions of cultivation in low land region of Carpatian-Ukraine according to

biochemical characteristics and microbiological properties corresponds to world analogues and presents both valuable plant materials.