

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ
КАФЕДРА ФАРМАКОЛОГІЇ ТА МЕДИЧНОЇ РЕЦЕПТУРИ**



МАТЕРІАЛИ

**II науково-практичної інтернет-конференції
з міжнародною участю на тему «Сучасні аспекти досягнень
фундаментальних та прикладних медико-біологічних напрямків
медичної та фармацевтичної освіти та науки»**

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Сучасні аспекти досягнень фундаментальних та прикладних медико-біологічних напрямків медичної та фармацевтичної освіти та науки: матеріали II науково-практичної інтернет-конференції з міжнародною участю (ХНМУ, Харків, 17 листопада 2023 р.)/Міністерство охорони здоров'я України, Харк. нац. мед. ун-т. – Харків : ХНМУ, 2023. – 366 с.

Матеріали, наведені у збірці, висвітлюють сучасні напрямки та шляхи підвищення якості медичної та фармацевтичної освіти, результати фундаментальних та прикладних наукових досліджень потенційних та нових лікарських засобів, інноваційні підходи підвищення якості фармакотерапії з позиції доказової медицини та управлінські, економічні та організаційні аспекти охорони здоров'я.

Збірка розрахована для широкого кола наукових та практичних працівників медицини та фармації.

Section 2. Results of fundamental and applied scientific research of potential and new medicines.

FEASIBILITY OF STUDYING VOLATILE COMPOUNDS OF TANACETUM BALSAMITA L. LEAVES GROWN IN UKRAINE

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Introduction. In the context with the global, world-wide problem of antibiotic resistance, relevant of modern pharmaceutical technology is to expand the range of herbal medicines with antimicrobial action [1]. According to the studies of a different scientists, *Tanacetum balsamita* L. shows a high level of bactericidal and fungicidal activity. It is used in folk medicine for various medical purposes, such as pain relief, improvement of heart function, sedation, cramp relief, fight against inflammatory processes, bacteria and helminths, liver protection [2, 4, 7].

The chemical composition of *T. balsamita* contains various components, including essential oils, flavonoids, tannins, terpenes, and other compounds. The most studied among them are essential oils, the multicomponent composition of which has an antibacterial effect [2, 4, 7].

Objective. Analysis of literature data on the study of the qualitative composition and quantitative content of volatile compounds in the leaves of *T. balsamita*.

Materials and methods. bibliosemantic, analytical, comparative and generalizing methods.

Results and discussion. Balsam tansy (*T. balsamita*), also known as big maruna, balsam pyrethrum, costemari or balsam herb, is a perennial herbaceous plant of the Asteraceae family [7]. It originates from the Mediterranean and is common in various regions of Southeastern Europe, Southwest Asia, North and South America. It can reach from 35 to 80 cm in height and has moderate pubescence and its phytomass is formed by a significant number of leaves, especially in the lower part of the plant [3].

According to Turkish scientists, 45 components were identified in the dried aerial parts of *T. balsamita*. The main components of the essential oil were trans-chrysanthenol – 22.3 %, chrysanthenyl acetate – 19.7 %, linalool oxide – 11.5 %, camphor – 7.5 %, 1,8-cineole – 2.7 %, as well as camphor – 28.5 %, 1,8-cineole – 17.1 %, camphene – 7.1 %, isobornyl propionate – 5.4 %, carveol – 4.5 % and borneol – 3.5 % [5].

The data described in the joint work of Serbian, Slovak and Polish researchers on the essential oil of *T. balsamita* differed from the previously mentioned studies. The main component was carvone, derived from various plant organs, with a content of 54.2%, 52.1% and 47.7% (flowers, leaves and stems, respectively). In addition to carvone in the leaves, α -thujone (11.4%) is present in a significant amount in the class of monoterpene ketones (69.1%, 11 compounds). The amount of monoterpene ester 1,8-cineole (5.9%) and sesquiterpene hydrocarbon β -bisabolene (4.0%) was found in the sample with leaves 3 times higher than in the generative organs [4].

The analysis of the component composition of the essential oil extracted from the aerial part of *T. balsamita* from plants naturally growing in Tabriz, as identified by M. B. Hassanpouraghdam et al. (2009) showed the presence of 23 components, which

account for 96.83% of the total amount of essential oil. The leading class of identified compounds were oxygenated monoterpenes – 87.93%, the second class – sesquiterpene hydrocarbons – 6.66%. The main monoterpene constituents of the essential oil of the aerial part are carvone – 49.11%, α -thujone – 24.6%, β -thujone – 2.68% and 1,8-cineole – 2.59%. β -bisabolene – 4.44%, sesquiterpene hydrocarbon was also present in significant amounts [6].

We have compared the chemical composition of only a few countries on the same continent and can trace significant variations in the same components depending on the habitat and the dominance of different constituents in the essential oil of *T. balsamita*.

Conclusions. As shown by the studies of other scientists, the composition of volatile compounds in *T. balsamita* is highly dependent on the conditions of plant growth, so it would be quite important to conduct similar studies with raw materials of plants growing in Ukraine. That is why our further research will be related to the study of volatile compounds in the leaves of *T. balsamita* grown in Ukraine.

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