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ABSTRACT BOOK



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Study of the phenolic composition of *Ruta graveolens* L. of Ukrainian origin

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Background: *Ruta graveolens* L. has a wide range of ethnopharmacological applications that are confirmed and further explored by modern evidence-based research. In the western regions of Ukraine, the plant has traditionally been used as an anti-inflammatory agent, including herbal baths for the treatment of skin diseases in infants [1]. In Lithuanian local medicine, its use has been documented for the treatment of abdominal pain, nervous and cardiovascular disorders, as well as as an abortifacient [2]. Based on these traditional applications, modern studies investigate the anticancer, neuroprotective, and antimicrobial potential of rue.

Aim: To evaluate the content of phenolic compounds in rue as one of the key groups of biologically active compounds potentially responsible for the plant's therapeutic properties.

Methods: The aerial parts of *Ruta graveolens* were collected at the I. Franko Botanical Garden in 2023. The quantitative determination of total phenolic compounds was performed in methanolic extracts using spectrophotometry on a Halo DB-20 UV–Vis spectrophotometer at 760 nm, employing the Folin–Ciocalteu reagent [3].

Results: The content of phenolic compounds showed a clear dependence on the vegetation phase. A moderately high level was observed during mass budding and the beginning of flowering. The maximum accumulation occurred during mass flowering, with levels approximately 1.2 times higher than in the budding phase, indicating intensified biosynthesis during the active reproductive development stage. During mass fruiting, the content decreased by more than twofold, followed by a secondary increase after fruiting to values comparable to the maximum.

Conclusions: The results demonstrate a phenological pattern of phenolic compound accumulation in *Ruta graveolens*. Considering the established role of phenolic compounds in anti-inflammatory and potential antitumor activities, the mass flowering stage is identified as the optimal phase for harvesting plant material rich in biologically active compounds.

References

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