COMPARATIVE ANALYSES OF CHEMICAL CONSTITUENTS FROM *Juniperus sabina* AND *Juniperus communis* FRUITS

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Background: *Juniperus sabina* L. and *Juniperus communis* L. *J.* are valuable plants due to their hardiness and usefulness, serving both ecological (landscape maintenance) and practical purposes (ornamental use, essential oil production, biological activity of their secondary metabolites). The fruits of these plants vary significantly in weight, chemical composition, and antioxidant activity depending on the growing location and year of harvest.
The aim of this study was to compare some morphological properties, chemical constituents and antioxidant activity of the fruits of two juniper species: *J. sabina* L. and *J. communis* L. growing in the Republic of Moldova and the Republic of Armenia.
Materials and methods: The juniper fruits were collected from Chisinau region of the Republic of Moldova and from three regions of Armenia: Yerevan, Kotayk and Tavush. The total phenolic content of juniper fruits was determined in gallic acid equivalent (GAE) using the Folin-Ciocalteu procedure. Antioxidant activity of fruit extracts was evaluated by DPPH method, and expressed in Trolox equivalent antioxidant capacity (TEAC).
Results: The weight of 100 *Juniperus sabina* fruits was 1.3–1.5 times greater than that of *Juniperus communis* fruits grown in the Republic of Moldova. The weight of 100 *Juniperus communis* fruits from Kotayk was 3.6–3.9 times greater than that of fruits grown in Tavush and 2.7–2.9 times greater than those from Yerevan.
The total phenolic content of juniper fruits was strongly influenced by species, ripening stage (first or second year), and extraction procedure. In hydroalcoholic extracts, total phenolic content ranged widely from 7.7 to 56.2 mg GAE/g dry residue. Comparative analysis showed that fruits from the Yerevan floristic region had a 1.5-fold higher total phenolic content than fruits from the Tavush and Kotayk regions.
The antioxidant activity of fruit extracts ranged from 15.32 to 103.12 mg TEAC/g dry residue. The fruit extract demonstrated the high antioxidant activity that was directly correlated (Pearson correlation 0.8020) with the total phenolic content. However, no correlation was found between the total phenolic content, antioxidant activity, and the weight of 100 fruits.
Conclusions: The study demonstrates that both species and geographic origin significantly influence the morphological traits and bioactive composition of juniper fruits.
Keywords: juniper berry, weight, total phenolic content, antioxidant activity

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