

KVANTITATIVNO ODREĐIVANJE REDUKUJUĆIH ŠEĆERA U HIDROLATIMA VRSTA IZ FAMILIJE LAMIACEAE: KORAK KA NJHOVOJ FUNKCIONALNOJ I TERAPEUTSKOJ PRIMENI

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Vodeni destilati ili kondenzati, poznati kao hidrolati, nusproizvodi su destilacije vodenom parom biljnog materijala. Predstavljaju vodenu fazu koja preostaje u aparatu za destilaciju nakon izdvajanja etarskog ulja. Hidrolati se, zbog svog hemijskog sastava, smatraju pogodnim za topikalnu i oralnu upotrebu [1, 2].

Cilj istraživanja je bio da se utvrdi sadržaj redukujućih šećera u hidrolatima dobijenim iz nadzemnih delova predstavnika familije Lamiaceae (*Hyssopus officinalis*, *Lavandula intermedia*, *Melissa officinalis*, *Origanum vulgare*, *Ocimum basilicum* i *Thymus vulgaris*). Analiza je sprovedena korišćenjem Dubois metode za kvantifikaciju redukujućih šećera [3], a rezultati su izraženi kao miligrami glukoernih ekvivalenata (GluE) po litru hidrolata, na osnovu kalibracione krive glukoze u opsegu od 0,1 do 1,0 mg/mL.

Kvantitativna procena sadržaja redukujućih šećera pokazala je vrednosti u rasponu od 125,12 ± 8,33 (*O. basilicum*) do 1047,13 ± 24,80 (*L. intermedia*) mg GluE/L hidrolata. Nisu uočene statistički značajne razlike u sadržaju redukujućih šećera između *H. officinalis* i sledećih vrsta: *O. basilicum*, *O. vulgare* i *T. vulgaris* ($p > 0,05$ i $p > 0,01$).

Kada se hidrolati koriste u čistom obliku u kozmetici ili su prisutni u značajnoj meri u hrani i pićima, a posebno sa stanovišta funkcionalne hrane, neophodno je kvantifikovati njihov sadržaj redukujućih šećera jer je to važno za osobe sa dijabetesom. Ovakva analiza do sada nije sprovedena, a važna je za karakterizaciju ove vredne sirovine, koja se ranije smatrala otpadnim proizvodom.

Literatura

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Zahvalnica

Ovo istraživanje je podržano od strane Ministarstva nauke, tehnološkog razvoja i inovacija Republike Srbije (broj ugovora: 451-03-137/2025-03/200113 i 451-03-136/2025-03/200113).

QUANTITATIVE DETERMINATION OF REDUCING SUGARS IN HYDROLATES OF LAMIACEAE SPECIES: A STEP TOWARDS THEIR FUNCTIONAL AND THERAPEUTIC UTILISATION

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Aqueous distillates or condensates, commonly known as hydrolates, are by-products of the steam distillation of plant materials. They represent the residual water phase that remains in the distillation apparatus after the essential oil has been separated. Due to their chemical composition, hydrolates are considered suitable for both topical and oral application [1, 2].

The aim of this study was to determine the content of reducing sugars in hydrolates obtained from the aerial parts of Lamiaceae species (*Hyssopus officinalis*, *Lavandula intermedia*, *Melissa officinalis*, *Origanum vulgare*, *Ocimum basilicum* and *Thymus vulgaris*). The analysis was performed according to the Dubois method for the quantification of reducing sugars [3], with results expressed as milligrammes of glucose equivalents (GluE) per litre of hydrolate based on a glucose calibration curve ranging from 0.1 to 1.0 mg/mL.

Quantitative evaluation of the reducing sugar content yielded values between 125.12 ± 31.22 (*O. basilicum*) and 1047.13 ± 8.33 (*L. intermedia*) mg GluE/L hydrolate. No statistically significant differences in the content of reducing sugars were found between *H. officinalis* and the following species: *O. basilicum*, *O. vulgare*, and *T. vulgaris* ($p > 0.05$ and $p > 0.01$).

When hydrolates are used in pure form in cosmetics or are present to a significant extent in food and beverages, it is essential from a functional food perspective to quantify their reducing sugar content, as this is important for people with diabetes mellitus. Such an analysis has not yet been carried out and is important for the characterisation of this valuable raw material, which was previously considered a waste product.

References

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Acknowledgements

This research was supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Grant No. 451-03-137/2025-03/200113 and No. 451-03-136/2025-03/200113).