

**KOMPARATIVNE METODE ANALIZE KOMERCIJALNE „VODA VODE” U CILJU  
OCENE NJENE BIOLOŠKE VREDNOSTI  
COMPARATIVE METHODS OF ANALYSIS OF COMMERCIAL "VODA VODA" TO  
ASSESS ITS BIOLOGICAL VALUE**

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***Rezime***

Voda je materija koja je danas proučavana različitim alatima i metodama, ali njeno ponašanje i funkcija još uvek ostaju nedostižni. Sa molekularnog aspekta, voda nije homogena struktura, već dinamička ravnoteža između promenljivih delova sklopova različitih oligomera i polimernih vrsta. Struktura i same molekularne jedinice zavise od temperature, pritiska i sastava vode. Promene u strukturi žive vode dovode do promene njenih svojstava. U ovom radu izvršena je kvantitativna analiza jedne komercijalne vode i njena komparacija sa ultra čistom vodom, kao i komparacija svojstava te vode na izvoru, neposredno posle mikrofiltracije i gotovog flaširanog proizvoda. Za istraživanje u radu korištene su metode optomagnetne spektroskopije OMS zasnovane na reflektansi interakcije svetlost-materija, optomagnetna imaging spektroskopija OMIS zasnovana na bazi paramagnetnih i dijamagnetnih stanja vode kao i metoda zasnovana na merenju remanentne magnetizacije vode RM metoda. Istraživanjem je potvrđeno da ispitivana voda pokazuje visoku zastupljenost slobodnih molekula vode i slabo vezane vode koja se organizuje oko prisutnih jona. Povećan broj slobodnih molekula i dinamika veze ukazuje na dobru bioraspoloživost ove vode a time i na hidrataciju ćelija i povećanje njene biološke vrednosti za ćelijske funkcije u organizmu.

***Ključne reči:*** voda, oligomer, molekul, spektroskopija, reflektansa, magnetizacija, biološka vrednost

Water is a matter that has been studied today with various tools and methods, but its behavior and function still remain unattainable. From the molecular point of view, water is not a homogeneous structure, but rather a dynamic equilibrium between the changing parts of assemblies of different oligomers and polymer species. The structure and the molecular units themselves depend from the temperature, pressure and composition of the water. Changes in the structure of living water lead to changes in its properties. In this paper, a quantitative analysis of a commercial water and its comparison with ultrapure water was performed, as well as a comparison of the properties of that water at the source, immediately after microfiltration and the finished bottled product. For research in the paper, the methods of optomagnetic spectroscopy OMS based on the reflectance of light-matter interaction, optomagnetic imaging spectroscopy OMIS based on the paramagnetic and diamagnetic states of water, as well as the method based on measuring the remanent magnetization of water RM method were used. The research confirmed that the tested water shows a high proportion of free water molecules and weakly bound water that is organized around the present ions. The increased number of free molecules and bond dynamics indicate good bioavailability of this water and thus cell hydration and an increase in its biological value for cellular functions. in the organism.

**Key words:** water, oligomer, molecule, spectroscopy, reflectance, magnetization, biological value