DYNAMICS OF PHYSICAL AND CHEMICAL PARAMETERS OF THE SAVA RIVER NEAR ŠABAC, SERBIA

Milan Glišić[1], Ljiljana Tanasić[1], Suzana Knežević[1], Jelena Tanasić[2]

[1]*Unite for Agricultural and Business Studies and Tourism, Academy of Applied Studies Šabac, Vojvode Putnika 56, 15000 Šabac, Serbia*
[2]*Faculty of Technology Novi Sad, University of Novi Sad, Bulevar Cara Lazara 1, 21102 Novi Sad, Serbia*
e-mail: milan11glisic@gmail.com

Abstract

To understand the quality dynamics of surface water, it is necessary to know the patterns according to which physical and chemical water parameters change in a function of time – daily, seasonally, and annually. For this research, water monitoring data from the Sava River near Šabac during the period from 2015 to 2019 (from June 1st to August 31st during a year and from 7:30 a.m. to 1:15 p.m. during a day) were used. The sampling was carried out at a distance of 20 meters from the coast and a depth of 0.5 m. Determination of physical and chemical parameters (temperature, pH value, electrical conductivity, suspended matter, turbidity, dissolved oxygen, oxygen saturation, ammonium ions, and nitrogen compounds) was performed using standardized methods. To determine the influence of the sampling time (time during the day, day of the year, and year) on the values of physicochemical factors, correlation and regression analyses, as well as the Eta-squared test according to Cohen in the SPSS program, were performed. According to the obtained results, the temperature shows a weak but significant positive correlation with the sampling hour during the day ($r = 0.31$, $p = 0.03$, $\eta^2 = 0.24$), water turbidity shows a weak but statistically significant negative correlation with the sampling date ($r = 0.35$, $p = 0.02$, $\eta^2 = 0.11$), and dissolved oxygen concentration shows a weak but statistically significant negative correlation with the year of sampling ($r = -0.3$, $p = 0.04$, $\eta^2 = 0.44$). The other physicochemical parameters do not show a high correlation with the time, date, and year of sampling, which indicates that for most of the parameters there is no clear trend or pattern of their dynamics when it comes to the periods in which sampling was carried out.