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EVALUATION OF DISSOLVED OXYGEN AND ORGANIC SUBSTANCES CONCENTRATIONS IN WATER OF THE NATURE RESERVE ALUVIUM ŽITAVY

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ABSTRACT

In 2006 concentrations of dissolved oxygen and organic substances were evaluated in water in the Nature Reserve Aluvium Žitavy (indirect method based on their oxidation by $K_2Cr_2O_7$ was used). The results are represented in mg $O_2.dm^{-3}$. Taking of samples was realized from 6 sampling sites in regular month intervals. Based on obtained data and according to the STN 75 7221 (Water quality – The classification of the water surface quality) water in individual sampling sites was ranked into the classes of the water surface quality.

From data it follows that the concentrations of dissolved oxygen and organic substances in the Nature Reserve Aluvium Žitavy changed in dependence on sampling sites and time. The highest mean concentrations of dissolved oxygen in dependence on sampling time were ascertained in spring months and the lowest concentrations in summer months. They ranged from 1,57 mg $O_2.dm^{-3}$ (July) to 8,98 mg $O_2.dm^{-3}$ (March). The fall dissolved oxygen values can be related to successive increase of water temperature, thus good conditions were created for decomposition of organic matter by microorganisms in water and sediments in which they use dissolved oxygen. In dependence on sampling place the highest mean concentration of dissolved oxygen was in sampling site No. 4 (5,99 mg $O_2.dm^{-3}$) which is situated in the narrowest place in the NR. The lowest value was in sampling site No. 2 (3,61 mg $O_2.dm^{-3}$) which is typical wetland ecosystem. High mean values of $CHSK_{Cr}$ in dependence on sampling time were determined in summer months and low values in winter moths. Dependence of $CHSK_{Cr}$ values on sampling site was also manifested. The lowest mean value was ascertained in sampling site No. 4 (59,5 mg.dm^{-3}) and the highest value in sampling site No. 5 (97,08 mg.dm^{-3}) which is also typical wetland. Based on the results and according to the STN 75 7221 we ranked water in all sampling sites into the 5th class of the water surface quality (very strong polluted water).

Key words: dissolved oxygen, chemical oxygen demand, organic substances, surface water quality, wetland