

INVESTIGATION OF METALS REMOVAL WITH *CHLORELLA ESP-6* MICROALGAE IN METAL SECTOR WASTEWATER

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ABSTRACT

In this study, with microalgae the biodegradability of metals were investigated in the metal industry wastewater. The wastewater used in the study were supplied from a company which is engaged in metal preparation, processing, galvanizing operations in province Kocaeli of Turkey. Wastewater samples were diluted 0%-10%-20% by volume in the laboratory. *Chlorella Esp-6* were sown as a solid culture in the diluted wastewater samples. Then, the removal of Zn, Fe, Mg, Ca, Al, Na and K metals was observed. During the cultivation of microalgae, samples were taken from the wastewater samples on the 1st, 7th and 24th days. The removal was observed to have the highest efficiency at different dilution rates on 1st day and 24th day of the study. Removal efficiencies of Zn (20% dilution, 24th day), Fe (20% dilution, 24th day), Mg (10% dilution, 24th day), Ca (20% dilution, 1st day), Al (10% dilution 24th day), Na (0% dilution, 1st day) and K (20% dilution, 24th day) were calculated as 97.51%, 97.12%, 70.69%, 99.06%, 87.20%, 90.05%, 37.46%, respectively. Based on the calculated results, it has been observed that removal of metal with microalgae in metal sector wastewater can be applied as an alternative treatment method.

Keywords: Wastewater Treatment, Metal Removal, Metal Industry, Microalgae