

INVESTIGATION THE POSSIBILITY OF CHLORELLA VULGARIS USE FOR TREATMENT OF HIGHLY MINERALIZED MINE WASTEWATER

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Introduction

Mining operations can negatively impact water supplies, often with long-lasting effects. The fundamental issue involves contamination of nearby rivers, lakes, and aquifers by what comes out of a coal mine—usually highly mineralized water

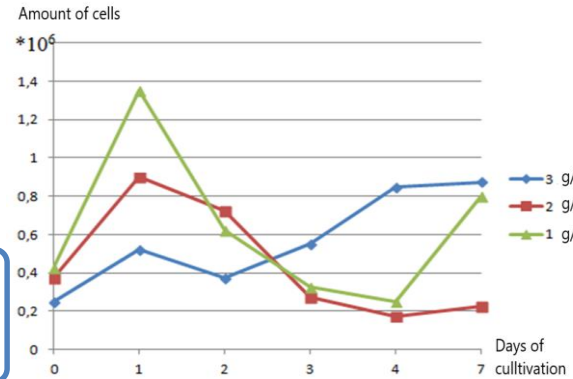
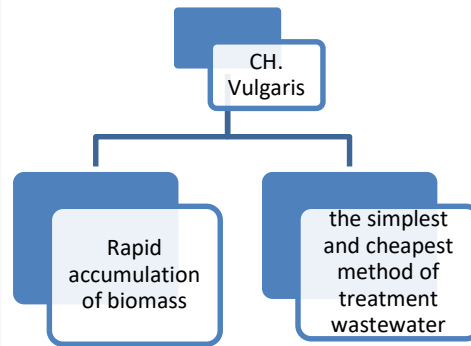


Figure 1 – Growth of Ch. Vulgaris on highly mineralized environment

Technological solution

At the stage of wastewater treatment, after the stage of biological treatment recommended to add about of 400 thousand cells/ml Ch. Vulgaris for 1 day.

Objectives of research

Analyze the effects of different mineral concentrations on viability of Chlorella Vulgaris

Substantiate biotechnological methods for treatment of highly mineralized mine wastewater

Methods

- NaCl and ZnSO₄ were selected for the research at a sample: 1:1
- Three solutions were created with different mineral concentrations (3 g/l , 2 g/l , 1 g/l).

Conclusion

- All samples showed high adaptive potential.
- Highly mineral concentrations have shown significant variation between samples. The environment with the highest mineralization is the most favorable for microalgae.