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Preliminary Study of Phytoremediation for Sulphide Treatment using *Scirpus grossus*

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Abstract

Objectives: Phytoremediation is known as one of the green solutions to remove toxic contaminants from waste using plants. In this phytoremediation study, the synthetic Spent Sulfidic Caustic (SSC) was introduced to *Scirpus grossus plant*. The survival of the plant was observed physically and the percentage of sulphide removal from SSC was analyzed. **Methods/Statistical Analysis:** Methodology were comprised of initial growth of *Scirpus grossus*, the growth of *Scirpus grossus* after induced with synthetic SSC and preparation of synthetic SSC including analysis of pH, Chemical Oxygen Demand (COD) and sulphide content. **Findings:** The physical observation on the plants showed that after five weeks of exposure, the withered leaves were detected in all sulphide concentration with the highest percentage recorded as 44.00% corresponded to the sulphide concentration of 4.24 mg/L. The analysis for sulphide concentration revealed the concentration of the sulphide reduced and meets the minimun concentration (<0.5 mg/L) as required in Standard A and B of Environmental Quality Act (Industrial Effluents) 2009. **Application/Improvements:** Phytoremediation process is possible for sulphide removal using *Scirpus grossus* plant.

Keywords: Phytoremediation, *Scirpus grossus*, sulphide