

Removal of glyphosate from water: applying coupled Sequencing Batch Reactor (SBR)-adsorption method

ABSTRACT

Wastewater discharged from Glyphosate manufacturing is a major environmental concern due to its complicated treatment process. In this study, the performance of a sequencing batch reactor (MSBR)-adsorption process treating Glyphosate wastewater was investigated. Operation results from SBR process showed that effluent's chemical oxygen demand (COD) removal efficiency, total suspended solids (TSS) and total phosphorus (TP) were 40 %, 105 mgL⁻¹ and 55 mgL⁻¹, respectively. However, the result of TP concentration did not meet the discharge limitation. The SBR effluent was then undergone an adsorption process using palm kernel shell-based activated carbon (PKS-AC). Minimum adsorbent dosage of 7 gL⁻¹ was needed to further reduce TP concentration to discharge limitation of 2 mgL⁻¹.

Keyword: Glyphosate; Biodegradation; Sequencing batch reactor (SBR); Adsorption; Palm kernel shell