The potential of extended aeration system for sago effluent treatment

ABSTRACT

Abstract: Problem statement: Sago effluent contains large amount of organic material which has a potential to cause water pollution. In order to reduce this problem, an experiment was conducted to remove organic material from sago effluent using lab scale of Extended Aeration (EA) system. Approach: The EA system consisted of the combination of physical and biological treatment unit. For Physical Treatment Unit (PTU), the sago effluent was filtered using 710 μm mesh size filter. For Biological Treatment Unit (BTU), the effluent were mixed and aerated with activated sago sludge for 48 h. The treatment efficiency with respect to Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Total Suspended Solid (TSS) removal were evaluated and compared with regulatory requirement by Department of Environment, Malaysia. Results: The result showed, the EA system could reduce BOD, COD and TSS up to 84, 87.8 and 73% respectively, however it did not comply with the regulatory requirement. Conclusion: This study suggested the EA system have potential to be apply on sago effluent, however it should be integrated with additional treatment unit to achieve the effluent quality standard.

Keyword: Sago effluent, EA, BOD, COD, TSS