Kemampuan isolat bakteri dari sedimen situ sebagai agen bioremendiasi ion logam timbal (Pb) di perairan

---

Abstrak

Heavy metals pollution in lakes has been generally occurred which is mainly attributed to the intensive anthropogenic activities surround them. The aim of this study was to obtain bacterial isolates for Pb bioremoval in waste water treatment system as well as Pb contaminated lakes water. Sediment samples were taken from Situ Cipondoh and Situ Pamulang in 3 December 2008. Bacteria were grown in Nutrient Agent (NA) medium containing Pb ions varied in 10, 25 and 50 mg/L concentration. Bacterial growth was observed in 24-48 hours. Graphite Furnace Atomic Absorption Spectrophotometer (GrAAS) was used to determine remaining Pb ion content in medium and in bacterial biomass after extraction digestions process using aqua regia and hydrogen peroxide 30 percent solutions mixtures at 121~&#65533;C and 15 Psig for 30 minutes. Recovery value using Certified Refence Material SRM-NIST-1515. Apple leaves measurement was 99.8 percent. The results show that bacterial isolates originated from situ Cipondoh and SituPamulang sediments were bot able to grow in medium containing 50 mg Pb/L, however bacterial isolated of situ Pamulang sediment can survive in medium containing 10 and 25 mgPb/L respectively in bacterial isolate of OP1N10, OP2N10, OP1N25, OP2N25, OP1N50 and OP2N50. Bacterial isolate from situ Pamulang grown medium (100 percent) possessed by OP1N10 isolate. The highest accumulation of Pb in bacterial cells (22.75 ~kg/g dry weight) found in OP1N25 isolate.