Kemampuan sistem lahan basah buatan menyisihkan kromium heksa valen (Cr (VI)) limbah cair industri pelapisan logam

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Abstrak

Electroplating industry is wastewater producer that contain heavy metal Cr(VI) with characterized as acid (low pH), toxic and carcinogenic. This experiment aimed to evaluated the performance of subsurface vertical up-flow type of constructed wetland in laboratory scale to immobilize Cr(VI) by using pyrite soil (FeS2), compost and also using two species of plants (Typha sp and Lepironia sp). The study was conducted during the six months from November 2008 &#65533; April 2009. The constructed wetland system tested has increased the pH to neutral and reduced Cr(VI) with the removal efficiency 94.68 percent in pond treatment A (Lepironia sp) with average inlet concentration of 14.7 mg/L and outlet 0.773 mg/L and 99.96 percent in pond treatment B (Typha sp) with concentrations of Cr (VI) on the outlet of 0.019 mg/L.Typha sp had better contribution in pyrite soil to rediced Cr(VI) as 0.019 mg/L and compliance with environmental quality standards (Kep-51/MENLH/10/1995). First order-plug flow model evaluated with k-value as 4.95 m/day and 8.08 m/day to treatment wetland of Lepironia sp and Typha sp. Cr(VI) accumulated are greatest in the stems of both plants test.