

**PERTUMBUHAN *Hydrilla verticillata* (L. f) Royle SEBAGAI AGEN
FITOREMEDIASI LOGAM TIMBAL (Pb) PADA AIR LIMBAH IPAL
SEWON BANTUL**

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INTISARI

Air merupakan komponen yang mempunyai peran penting bagi keberlangsungan makhluk hidup, namun kasus pencemaran air belum mendapat perhatian khusus dari masyarakat. Salah satu bentuk dari pencemaran air adalah pencemaran logam berat di perairan. Penelitian Pertumbuhan *Hydrilla verticillata* sebagai agen fitoremediasi logam Timbal (Pb) di IPAL Sewon, Bantul bertujuan untuk mengetahui kemampuan *Hydrilla verticillata* dapat digunakan sebagai agen fitoremediasi pada air limbah IPAL, mengetahui massa *Hydrilla verticillata* yang berbeda akan mempengaruhi kandungan Pb pada media air, serta mengetahui kadar logam timbal (Pb) yang dapat diserap oleh *Hydrilla verticillata* pada air limbah IPAL. Penelitian ini terdiri atas beberapa tahap, diantaranya pengambilan sampel air IPAL Sewon, aklimatisasi *Hydrilla verticillata* menggunakan aquades, pengamatan tumbuhan yang dilakukan selama 15 hari dengan mengamati pertumbuhan dan mengukur parameter fisiko-kimia, serta analisis data menggunakan uji regresi. Hasil penelitian menunjukkan bahwa selama 15 hari pengamatan, kadar logam Timbal (Pb) mampu turun pada perlakuan P1 sebesar 9,6 µg/L, P2 sebesar 9,3 µg/L dan pada perlakuan P3 sebesar 6,0 µg/L, dengan nilai efisiensi kemampuan *Hydrilla verticillata* pada perlakuan P1 adalah $3,03 \pm 0,583\%$, perlakuan P2 sebesar $6,73 \pm 0,337\%$ dan perlakuan P3 sebesar $11,78 \pm 0,891\%$. Nilai biomassa terbesar diperoleh dari perlakuan kontrol sebesar $84,8 \pm 0,3206\%$, serta pada perlakuan air limbah nilai biomassa terbesar terdapat pada P3 sebesar $83,4 \pm 0,3250\%$. *Hydrilla verticillata* mampu menyerap logam Timbal (Pb) dari perlakuan kontrol sebesar 0,37mg/kg, sedangkan pada perlakuan sampel air limbah tertinggi pada P3 sebesar 9,85 mg/kg.

Kata kunci : Air limbah, Fitoremediasi, *Hydrilla verticillata*, Logam Berat, Timbal (Pb)

GROWTH *Hydrilla verticillata* (L. f) Royle AS A PHYTOREMEDIATION AGENT OF LEAD METAL (Pb) IN WWTP (IPAL) SEWON, BANTUL

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ABSTRACT

Water is a component that plays an important role in the survival of living things, but cases of water pollution have not received special attention from the public. One form of water pollution is heavy metal pollution in waters. Growth Research *Hydrilla verticillata* as a phytoremediation agent for Lead (Pb) metal contained in Sewon WWTP, Bantul aims to determine its capabilities *Hydrilla verticillata* can be used as a phytoremediation agent in WWTP wastewater, knowing the mass *Hydrilla verticillata* differences will affect the Pb content in the water media, as well as knowing the levels of lead metal (Pb) that can be absorbed by *Hydrilla verticillata* in IPAL wastewater. This research consisted of several stages, including taking water samples from the Sewon IPAL, acclimatization *Hydrilla verticillata* using distilled water, plant observations were carried out for 15 days by observing growth and measuring physico-chemical parameters, as well as data analysis using regression tests. The results of the research showed that during 15 days of observation, lead (Pb) metal levels were able to decrease in treatment P1 by 9.6 µg/L, P2 by 9.3 µg/L and in treatment P3 by 6.0 µg/L, with a value capability efficiency *Hydrilla verticillata* in treatment P1 it was $3.03 \pm 0.583\%$, treatment P2 was $6.73 \pm 0.337\%$ and treatment P3 was $11.78 \pm 0.891\%$. The largest biomass value was obtained from the control treatment at $84.8 \pm 0.3206\%$, and in the wastewater treatment the largest biomass value was found at P3 at $83.4 \pm 0.3250\%$. *Hydrilla verticillata* able to absorb lead (Pb) metal from the control treatment of 0.37 mg/kg, while in the wastewater sample treatment the highest was P3 at 9.85 mg/kg.

Keywords: Wastewater, Phytoremediation, *Hydrilla verticillata*, Heavy Metals, Lead (Pb)