

**PENGARUH CEKAMAN MERKURI TERHADAP AKTIVITAS NITRAT
REDUKTASE DAN PERTUMBUHAN MELATI AIR (*Aquarius palifolius*
(Nees & Mart.) Christenh. & Byng)**

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INTISARI

Logam berat merkuri merupakan salah satu kontaminan yang dapat menyebabkan dampak negatif pada lingkungan. Fitoremediasi termasuk metode yang dapat digunakan dalam mengatasi permasalahan tersebut. Penelitian ini menggunakan tanaman melati air (*Aquarius palifolius*), dimana berdasarkan penelitian sebelumnya memiliki potensi sebagai agen bioremediasi. Konsentrasi cekaman merkuri yang berbeda terhadap tanaman akan mempengaruhi aktivitas produktivitas dan pertumbuhan tanaman. Tujuan penelitian ini yaitu mengetahui pengaruh cekaman merkuri terhadap aktivitas nitrat reduktase yang berperan dalam produktivitas tanaman, mengetahui pengaruh cekaman merkuri terhadap parameter pertumbuhan meliputi laju pertumbuhan tinggi tanaman, panjang daun dan jumlah daun. Konsentrasi yang digunakan pada penelitian ini yaitu 0 ppm, 14 ppm, 16 ppm, 18 ppm, dan 20 ppm. Masing-masing perlakuan dilakukan sebanyak 3 kali ulangan. Parameter yang diukur dalam penelitian ini yaitu aktivitas nitrat reduktase, laju pertumbuhan tinggi tanaman, panjang daun, jumlah daun, serta parameter lingkungan. Pada penelitian ini aktivitas nitrat reduktase diukur dengan metode spektrofometri dan pengukuran laju pertumbuhan dilakukan dengan pengamatan selama 15 hari. Hasil penelitian menunjukkan bahwa perlakuan cekaman merkuri menyebabkan penurunan pada nilai aktivitas nitrat reduktase di daun sebesar 9,5-13,5% dan panjang daun *A. palifolius* sebesar 50-65%. Sementara itu, Perlakuan cekaman merkuri tidak berpengaruh terhadap laju pertumbuhan tinggi tanaman dan jumlah daun.

KATA KUNCI: Logam berat, melati air, merkuri, nitrat reduktase, pertumbuhan

**EFFECT OF MERCURY STRESS ON THE ACTIVITY NITRATE
REDUCTASE AND GROWTH OF WATER JASMINE (*Aquarius palifolius*
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ABSTRACT

Mercury is one of the contaminants that can cause negative impacts on the environment. Phytoremediation is a method that can be used to overcome these problems. This research uses water jasmine (*Aquarius palifolius*), which based on previous research has potential as a bioremediation agent. Different concentrations of mercury stress on plants will affect productivity activity and plant growth. The purpose of this study is to determine the effect of mercury stress on nitrate reductase activity that plays a role in plant productivity, determine the effect of mercury stress on growth parameters including plant height growth rate, leaf length and number of leaves. The concentrations used in this study were 0 ppm, 14 ppm, 16 ppm, 18 ppm, and 20 ppm. Each treatment was carried out as many as 3 replicates. The parameters measured in this study were nitrate reductase activity, plant height growth rate, leaf length, number of leaves, and environmental parameters. In this study, nitrate reductase activity was measured by spectrophometric method and the measurement of growth rate was done by observation for 15 days. The results showed that mercury stress treatment caused a decrease in the value of nitrate reductase activity in leaves by 9.5-13.5% and the length of *A. palifolius* leaves by 50-65%. Meanwhile, mercury stress treatment did not affect the growth rate of plant height and number of leaves.

KEY WORDS: Heavy metals, water jasmine, mercury, nitrate reductase, growth