

Analisis pengaruh pemberian logam berat pb cd cu terhadap pertumbuhan melastoma malabathricum l = Effect of heavy metals pb cd cu treatment on plant growth in melastoma malabathricum l

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Abstrak

Telah dilakukan penelitian yang bertujuan untuk mengetahui pengaruh pemberian logam berat Pb, Cd dan Cu dalam medium terhadap pertumbuhan *Melastoma malabathricum* L. serta kemampuannya mengakumulasi logam berat tersebut di akar, batang dan daun. Empat puluh delapan stek batang dibagi ke dalam 10 kelompok perlakuan, yaitu kelompok kontrol, kelompok medium yang diberi 25, 50, 75 M PbCl₂; 20, 100, 200 M CdCl₂; 10, 45, dan 130 M CuCl₂. Pengamatan parameter pertumbuhan meliputi tinggi tanaman, panjang akar, dan jumlah daun. Pengamatan dilakukan setiap 2 hari sekali selama 1 bulan dan diakhiri dengan pengukuran kadar logam berat dalam akar, batang dan daun. Hasil penelitian menunjukkan perlakuan pemberian 25 M PbCl₂, 50 M PbCl₂ dan 75 M PbCl₂ tidak berpengaruh terhadap pertumbuhan *M. malabathricum*, karena tanaman tersebut dapat tetap tumbuh normal, sehingga tergolong tanaman yang toleran terhadap Pb. Penghambatan pertumbuhan *M. malabathricum* terjadi pada perlakuan 20, 100, 200 M CdCl₂, 45 M CuCl₂, dan 130 M CuCl₂, namun pertumbuhan meningkat pada medium yang diberi 10 M CuCl₂. Hasil pengujian kadar logam berat memperlihatkan Pb, Cd dan Cu lebih banyak terakumulasi dalam jaringan akar dibandingkan dengan batang dan daun. Dalam hal ini, *M. malabathricum* tidak dapat digolongkan sebagai tanaman hiperakumulator ketiga logam tersebut.

*This research is aimed to know the impact of heavy metal (Pb, Cd, Cu) in the medium on the growth and performance of *Melastoma malabathricum* and also its ability in accumulating heavy metals in roots, stems and leaves. Fourty eight of stems are grouped into ten treatments which are control, medium with 25, 50, 75 M PbCl₂; 20, 100, 200 M CdCl₂; 10, 45 and 130 M CuCl₂. The observation of growth parameter includes height of plants, length of roots and the amount of leaves produced. The research was done once in two days for one month and ended with measurement of heavy metal content in roots, stems and leaves. The result showed that treatment with 25, 50 and 75 M PbCl₂ did not affect the growth of *M. malabathricum*. This is because those plant can still grow normally, so it is categorized as a plant that tolerant to Pb. The inhibition on the growth of *M. malabathricum* occured in treatment of 20, 100, 200 M CdCl₂; 45, and 130 M CuCl₂. However, the growth of plant increase in the medium that were given 10 M CuCl₂. Based on heavy metal measurement, Pb, Cd, Cu were more accumulated in the root tissue compared to stem and leaves. In this case, *M. malabathricum* can not be categorized as hyperaccumulator plant of those metals.*