

ABSTRAK

Segara Anakan bagian timur merupakan wilayah pesisir yang rentan terhadap pencemaran logam berat akibat aktivitas pelayaran, industri, dan permukiman di sekitarnya. Penelitian ini bertujuan untuk mengetahui tingkat pencemaran logam berat Pb dan Cd serta daya serapnya oleh *Rhizophora mucronata*. Metode penelitian menggunakan metode survei dan analisis Pb dan Cd menggunakan metode *Atomic Absorption Spectrophotometry* (AAS). Hasil analisis menunjukkan bahwa konsentrasi Pb dalam sedimen berkisar antara 8,94–14,88 mg·kg⁻¹ dan Cd berkisar antara 1,10–3,25 mg·kg⁻¹, yang menunjukkan bahwa konsentrasi Pb masih berada pada kisaran alami, sedangkan konsentrasi Cd telah melebihi kisaran alami di lingkungan. Akumulasi logam berat pada jaringan tanaman lebih tinggi ditemukan pada akar dibandingkan daun. Nilai faktor biokonsentrasi (BCF) untuk Pb dan Cd seluruhnya < 1, masing-masing berkisar antara 0,45–0,91 dan 0,62–0,97, sedangkan nilai faktor translokasi (TF) juga < 1, menunjukkan bahwa logam lebih banyak tertahan di akar. Variabel pendukung seperti bahan organik dan fraksi pasir berkorelasi positif terhadap akumulasi logam. Hasil penelitian ini menegaskan bahwa *R. mucronata* mampu mengakumulasi logam Pb dan Cd dan berperan sebagai fitostabilisator, serta berpotensi menjadi indikator biologis pencemaran logam berat di kawasan pesisir.

Kata Kunci: daya serap; ekosistem mangrove; mangrove *Rhizophora mucronata*, sedimen mangrove; Pb dan Cd; Segara Anakan

ABSTRACT

The eastern part of Segara Anakan is a coastal area vulnerable to heavy metal pollution due to surrounding shipping, industrial, and residential activities. This study aims to determine the contamination levels of heavy metals Pb and Cd and their absorption capacity by *Rhizophora mucronata*. The research employed a survey method, and Pb and Cd were analyzed using Atomic Absorption Spectroscopy (AAS). The results showed that Pb concentrations in sediments ranged from 8.94–14.88 mg·kg⁻¹ and Cd from 1.10–3.25 mg·kg⁻¹, indicating that Pb concentrations remain within the natural range, whereas Cd concentrations have exceeded the natural range in the environment. Heavy metal accumulation in plant tissues was higher in roots than in leaves. The bioconcentration factor (BCF) values for Pb and Cd were all < 1, ranging from 0.45–0.91 and 0.62–0.97, respectively, while translocation factor (TF) values were also < 1, indicating that metals were predominantly retained in the roots. Supporting variables such as organic matter and sand fraction showed a positive correlation with metal accumulation. These findings confirm that *R. mucronata* is capable of accumulating Pb and Cd and acts as a phytostabilizer, with potential as a biological indicator of heavy metal pollution in coastal areas.

Keywords: mangrove ecosystem; mangrove *Rhizophora mucronata*; mangrove sediment; Pb and Cd; Segara Anakan; uptake capacity

