

ABSTRAK

Ekosistem mangrove di kawasan pesisir Segara Anakan Timur menghadapi tekanan pencemaran dari aktivitas industri, transportasi laut, dan tumpahan minyak, yang menyebabkan akumulasi senyawa hidrokarbon di lingkungan perairan. Penelitian ini bertujuan untuk menganalisis konsentrasi *Total Petroleum Hidrokarbon* (TPH) pada mangrove jenis *Sonneratia alba* dan *Sonneratia caseolaris* di kawasan Segara Anakan Timur, Kabupaten Cilacap. Konsentrasi TPH diukur pada akar, batang, daun, serta media lingkungan (air dan sedimen), dengan pendekatan evaluasi nilai *Translocation Factor* (TF) dan *Bioaccumulation Factor* (BAF). Sampel diambil dari tiga stasiun berdasarkan tingkat paparan pencemaran menggunakan metode *purposive sampling*. Analisis laboratorium dilakukan secara gravimetri berdasarkan US EPA-821-R-98-002 menggunakan alat *InfraCal TPH Analyzer*. Hasil menunjukkan bahwa Stasiun III (Kalipanas) memiliki kadar TPH tertinggi pada air dan sedimen. Akumulasi TPH tertinggi pada jaringan tanaman ditemukan pada *Sonneratia caseolaris*. Nilai $TF \leq 1$ pada kedua spesies menunjukkan peran sebagai fitostabilisator, yang menghambat translokasi polutan ke bagian atas tanaman. Sedangkan nilai $BAF \leq 1$ pada kedua spesies menunjukkan kedua spesies memiliki kemampuan bioakumulasi yang rendah terhadap polutan TPH.

Kata kunci: akumulasi, mangrove, *Sonneratia alba*, *Sonneratia caseolaris*, Segara Anakan, *Total Petroleum Hidrokarbon*.

ABSTRACT

The mangrove ecosystem in the eastern coastal area of Segara Anakan is under pollution pressure from industrial activities, marine transportation, and oil spills, leading to the accumulation of hydrocarbon compounds in the aquatic environment. This study aims to analyze the concentration of Total Petroleum Hydrocarbons (TPH) in two mangrove species, *Sonneratia alba* and *Sonneratia caseolaris*, in Segara Anakan Timur, Cilacap Regency. TPH concentrations were measured in roots, stems, leaves, and environmental media (water and sediment), using an evaluation approach through the calculation of Translocation Factor (TF) and Bioaccumulation Factor (BAF). Samples were collected from three stations with varying levels of pollution exposure using purposive sampling. Laboratory analysis was conducted gravimetrically following the US EPA-821-R-98-002 method using the InfraCal TPH Analyzer. The results showed that Station III (Kalipanas) had the highest TPH concentrations in water and sediment. The highest TPH accumulation in plant tissues was found in *Sonneratia caseolaris*. TF values ≤ 1 for both species indicate their role as phytostabilizers, inhibiting the translocation of pollutants to the upper parts of the plant. Meanwhile, BAF values ≤ 1 indicate that both species have a low bioaccumulation capacity for TPH pollutants.

Keywords: *accumulation, mangrove, Sonneratia alba, Sonneratia caseolaris, Segara Anakan, Total Petroleum Hydrocarbons.*