## ABSTRAK

**Adzka Da'iyah Umri, NIM 4191220008 (2024). Analisis Daun Pohon Glodokan (*Pholyalthia longifolia* Sonn.) Terhadap Kandungan Unsur Timbal (Pb) Bahan Pencemaran Udara dari Gas Buang Kendaraan Bermotor di Belawan.**

Penelitian ini bertujuan untuk mengetahui keberadaan, jumlah, dan kesesuaian kandungan unsur timbal (Pb) pada daun pohon glodokan tiang (*Polyalthia longifolia* Sonn.) sebagai indikator pencemaran udara dari gas buang kendaraan bermotor di Belawan, Kota Medan, dengan Baku Mutu Lingkungan yang berlaku. Penelitian dilaksanakan pada tiga titik lokasi dengan tingkat kepadatan lalu lintas berbeda, yaitu kawasan industri, jalan tol, dan permukiman. Sampel daun diambil menggunakan teknik *purposive sampling*, kemudian dianalisis kandungan Pb-nya menggunakan metode *Atomic Absorption Spectrophotometry* (AAS) di Laboratorium Balai Laboratorium Kesehatan Daerah Medan. Selain kandungan Pb, penelitian ini juga mengamati morfologi daun, luas permukaan daun, serta struktur dan jumlah stomata pada ketiga lokasi sebagai data pendukung. Hasil penelitian menunjukkan bahwa kandungan Pb pada daun glodokan tiang di ketiga lokasi berada di bawah batas deteksi alat AAS, yaitu < 0,00170 mg/kg, jauh di bawah nilai ambang batas yang ditetapkan dalam Peraturan Pemerintah Nomor 41 Tahun 1999 tentang Pengendalian Pencemaran Udara (0,02 mg/24 jam). Morfologi, luas daun, dan jumlah stomata menunjukkan variasi yang sejalan dengan tingkat kepadatan lalu lintas, namun belum berkorelasi signifikan terhadap tingkat akumulasi Pb karena konsentrasi Pb di seluruh lokasi tergolong rendah. Dapat disimpulkan bahwa kualitas udara di lokasi penelitian, ditinjau dari parameter Pb pada daun glodokan tiang, masih tergolong aman, dan tanaman glodokan tiang berpotensi sebagai tanaman peneduh jalan yang mendukung kualitas udara di kawasan Belawan.



**Kata kunci :** Timbal (Pb), (*Polyalthia longifolia* Sonn.), Belawan.



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## ABSTRACT

**Adzka Da'iyah Umri, NIM 4191220008 (2024). Analysis of Glodokan Tree Leaves (*Polyalthia longifolia* Sonn.) on Lead (Pb) Content as an Air Pollutant from Motor Vehicle Exhaust in Belawan.**

This study aims to determine the presence, amount, and compliance of lead (Pb) content in the leaves of the false ashoka tree (Polyalthia longifolia Sonn.) as an indicator of air pollution from motor vehicle exhaust in Belawan, Medan City, compared with the applicable Environmental Quality Standard. The research was conducted at three locations with different traffic density levels, namely an industrial area, a toll road, and a residential area. Leaf samples were collected using a purposive sampling technique and analyzed for Pb content using Atomic Absorption Spectrophotometry (AAS) at the Medan Regional Health Laboratory. In addition to Pb content, this study also observed leaf morphology, leaf surface area, and stomatal structure and density at the three locations as supporting data. The results showed that the Pb content in the leaves at all three locations was below the detection limit of the AAS instrument, namely < 0.00170 mg/kg, far below the threshold set in Government Regulation Number 41 of 1999 concerning Air Pollution Control (0.02 mg/24 hours). Leaf morphology, leaf area, and stomatal density varied in line with traffic density levels, but showed no significant correlation with Pb accumulation, as Pb concentrations were low at all locations. It can be concluded that air quality at the research locations, based on the Pb parameter in the leaves, remains within a safe category, and that the false ashoka tree has potential as a roadside shade tree that supports air quality in the Belawan area.



**Keywords:** Lead (Pb), *Polyalthia longifolia* Sonn., Belawan.



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