

Short communication: Anatomical changes in the roots, rhizomes and leaves of seagrass (*Cymodocea serrulata*) in response to lead

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Section

Articles

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DWI ROSALINA

Department of Marine Engineering, Politeknik Kelautan dan Perikanan Bone. Jl. Sungai Musi, Palette, Bone 92719, South Sulawesi, Indonesia

ENDANG YULI HERAWATI

Department of Water Resources Management, Faculty of Fisheries and Marine Sciences. Universitas Brawijaya. Jl. Veteran, Malang 65145, East Java, Indonesia

MUHAMMAD MUSA

Department of Water Resources Management, Faculty of Fisheries and Marine Sciences. Universitas Brawijaya. Jl. Veteran, Malang 65145, East Java, Indonesia

DINI SOFARINI

Department of Water Resources Management, Faculty of Fisheries and Marine Sciences, Universitas Lambung Mangkurat. Jl. A. Yani Km 36, Banjarbaru 70124, South Kalimantan, Indonesia

YENNY RISJANI

Department of Water Resources Management, Faculty of Fisheries and Marine Sciences. Universitas Brawijaya. Jl. Veteran, Malang 65145, East Java, Indonesia

Abstract

Abstract. Rosalina D, Herawati EY, Musa M, Sofarini D, Risjani Y.

2019. Short communication: Anatomical changes in the roots, rhizomes, and leaves of seagrass (*Cymodocea serrulata*) in response to lead. *Biodiversitas* 20: 2583-2588. Runoff of heavy metals as a result of urban and industrial development is a potential threat for seagrass populations in the coast. The objectives of this study were to study the anatomical changes in the tissues of roots, rhizomes, and leaves of seagrass *Cymodocea serrulata* in response to treatment with different concentrations of lead (Pb) for different time durations. This experiment used heavy metal Pb from a solution of $Pb(NO_3)_2$ with a concentration of 0 ppm, 5 ppm, 10 ppm, and 15 ppm and the treatment period extended up to 4 weeks with 3 replications. Analysis of changes in anatomical features showed that exodermis and endodermis cells in the roots thickened as lead concentration increased. The air spaces in the root cortex and rhizome also widened. Thickening of cell walls occurred in the epidermis and endodermis of rhizome. Likewise, in the leaves, thickening occurred in the upper and lower cuticle and also the upper and lower epidermis. In general, changes in anatomical features of root, rhizome, and leaves were observed in response to increasing lead concentrations. The results showed that *C. serrulata* developed some level of tolerance to heavy metals, especially lead.