

RINGKASAN

MAULIDIA ROHMA HARMI PERTIWI. Analisis Kandungan Logam Berat Timbal (Pb) pada Mangrove *Avicennia marina* di Pulau Sarinah, Kecamatan Jabon, Sidoarjo, Jawa Timur. Dosen Pembimbing Prayogo, S.Pi., MP. dan Dr. Adriana Monica Sahidu, Ir., M.Kes.

Perairan di Kecamatan Porong Sidoarjo merupakan salah satu kawasan pesisir di Jawa Timur yang terkena dampak dari pencemaran lingkungan berbahaya yang dikenal sebagai banjir lumpur panas Lapindo. Pencemaran tersebut terjadi pada tanggal 27 Mei 2004 yang berasal dari salah satu perusahaan minyak dan gas bernama PT. Lapindo Brantas. Sampai saat ini pembuangan lumpur lapindo masih dialirkan ke Muara Sungai Porong. Menurut Dahuri dan Arumsyah (1994), masuknya bahan pencemar ke dalam sungai atau perairan dapat menyebabkan penurunan kualitas perairan bahkan pencemaran polutan terhadap laut. Apabila polutan logam berat masuk ke dalam perairan maka akan menjadi ancaman yang serius bagi manusia dan makhluk hidup yang hidup di sekitar wilayah muara Sungai Porong.

Penelitian ini dilaksanakan pada bulan September 2018 di Pulau Sarinah Sidoarjo, Jawa Timur. Analisis konsentrasi logam berat timbal (Pb) dilakukan di Laboratorium Gizi Fakultas Kesehatan Masyarakat Universitas Airlangga, Surabaya. Pengambilan sampel di tiga stasiun dengan waktu setiap minggu selama tiga kali. Metode penelitian menggunakan metode survei yang dilakukan di kawasan perairan Pulau Sarinah. Sampel akar, daun mangrove, air dan sedimen diuji menggunakan alat *Atomic Absorption Spectrophotometry* (AAS). Parameter penunjang yang diamati pada penelitian ini berupa suhu, pH dan salinitas. Analisis data menggunakan perangkat program *Statistical Product and Service Solution* (SPSS) versi 20 untuk mengetahui korelasi.

Hasil kandungan kadar logam berat timbal (Pb) pada mangrove menunjukkan nilai rata-rata konsentrasi logam berat timbal (Pb) melampaui baku mutu dari Kementerian Negara Lingkungan Hidup No.51 tahun 2004 sebesar 0,008 ppm. Hasil BCF (*Bioconcentration factor*) akar di kawasan Pulau Sarinah yang bekisar 0,460 – 0,688. Nilai TF (*Translocation factor*) pada pulau Sarinah yang tinggi berkisar 0,543 – 0,6 menunjukkan logam berat lebih banyak di translokasikan pada daun. Sehingga nilai FTD negatif dan menunjukkan bahwa logam berat lebih banyak yang terbuang daripada terakumulasi.

SUMMARY

MAULIDIA ROHMA HARMI PERTIWI. Analysis of Heavy Metal Lead Content (Pb) in *Avicennia marina* Mangrove on Sarinah Island, Jabon Sub-District, Sidoarjo, East Java. Advisor Lecturer Prayogo, S.Pi., MP. and Dr. Adriana Monica Sahidu, Ir., M.Kes.

The waters in Porong Sidoarjo Subdistrict are one of the coastal areas in East Java which are affected by dangerous environmental pollution known as Lapindo hot mud floods. The pollution occurred on May 27, 2004, which came from an oil and gas company named PT. Lapindo Brantas. Until now, the disposal of Lapindo mud is still being channeled to the Porong River Estuary. According to Dahuri and Arumasyah (1994), the entry of pollutants into rivers or waters can cause a decrease in water quality and even pollution of pollutants against the sea. If the heavy metal pollutants enter into the waters it will be a serious threat to humans and living things that live around the estuary area of the Porong River.

This research was conducted in September 2018 in Sarinah Island, Sidoarjo, East Java. Analysis of the concentration of heavy metal lead (Pb) was carried out at the Nutrition Laboratory of the Public Health Faculty of Airlangga University, Surabaya. With sampling at three stations with three times a week. The research method uses survey methods carried out in the waters of Sarinah Island. Samples of roots, mangrove leaves, water and sediments were tested using Atomic Absorption Spectrophotometry (AAS). The supporting parameters observed in this study were temperature, pH and salinity. Data analysis used the Statistical Product and Service Solution (SPSS) program version 20 to find out the correlation.

The results of the content of heavy metal lead (Pb) in mangrove showed that the average value of lead heavy metal (Pb) concentration exceeded the quality standard of the Ministry of Environment No.51 of 2004 amounting to 0.008 ppm. Root BCF (Bioconcentration factor) results in the Sarinah Island region which ranges from 0.460 to 0.688. The TF value (Translocation factor) on the high Sarinah island ranged from 0.543 to 0.6 indicating that more heavy metals were translocated on the leaves. So the FTD value is negative and shows that heavy metals are more wasted than accumulated.