

ABSTRAK

ANALISIS LOGAM BERAT TIMBAL (Pb) DAN KADMIUM (Cd) PADA MAKRO ALGA *Ulva* sp., *Sargassum* sp. DAN *Gracilaria* sp. DI PERAIRAN ANYER-PANIMBANG

Oleh

TESSA MEILAN SARI

Karakteristik dari logam berat sendiri adalah bersifat toksik dan sulit untuk didegradasi. Logam berat yang masuk ke perairan akan mengendap di sedimen dan dapat terakumulasi pada biota perairan yang hidup di dasar perairan. Wilayah pesisir perairan Anyer-Panimbang memiliki potensi sumber daya alam yang melimpah seperti makro alga, sehingga dari adanya pencemaran logam berat ini makro alga dapat terdampak langsung. Penelitian ini bertujuan untuk mengevaluasi tingkat pencemaran logam berat timbal dan kadmium di perairan Anyer-Panimbang dengan menentukan jenis makro alga *Ulva* sp., *Sargassum* sp. dan *Gracilaria* sp. yang memiliki kemampuan bioakumulasi tertinggi terhadap logam berat timbal dan kadmium. Analisis kadar logam berat timbal dan kadmium dilakukan dengan pengambilan sampel makro alga pada tujuh stasiun penelitian secara *random sampling* dan dilakukan pengujian konsentrasi logam berat menggunakan metode AAS (*atomic absorption spectrophotometry*). Hasil Analisa didapatkan nilai konsentrasi Pb tertinggi ditemukan pada *Sargassum* sp. (1,5653 mg/kg), diikuti oleh *Gracilaria* sp. (0,5849 mg/kg), dan *Ulva* sp. (0,6179 mg/kg). Untuk Cd, nilai tertinggi juga terdapat pada *Sargassum* sp. (0,3121 mg/kg), kemudian *Ulva* sp. (0,3816 mg/kg), dan *Gracilaria* sp. (0,3704 mg/kg). Berdasarkan penelitian yang telah dilaksanakan didapatkan kesimpulan bahwa *Sargassum* sp. merupakan makro alga dengan kemampuan bioakumulasi tertinggi terhadap timbal dan kadmium di perairan Anyer-Panimbang, sehingga sangat potensial untuk dijadikan bioindikator pencemaran logam berat.

Kata Kunci: Kadmium, Makro Alga, Pencemaran, Timbal

ABSTRACT

ANALYSIS OF HEAVY METALS LEAD (Pb) AND CADMIUM (Cd) IN MACROALGAE *Ulva* sp., *Sargassum* sp. AND *Gracilaria* sp. IN THE WATERS OF ANYER-PANIMBANG

By

TESSA MEILAN SARI

The characteristics of heavy metals themselves are toxic and difficult to degrade. Heavy metals that enter the waters will settle in sediment and can accumulate in aquatic biota that live on the bottom of the water. The coastal area of the waters of Anyer-Panimbang has the potential for abundant natural resources such as macro algae, so that from this heavy metal pollution, makro algae can be directly affected. This study was aimed to evaluate the level of heavy metal pollution of lead and cadmium in the waters of Anyer-Panimbang by determining the macro types of algae *Ulva* sp., *Sargassum* sp. and *Gracilaria* sp. which has the highest bioaccumulation ability against heavy metals lead and cadmium. Analysis of heavy metal levels of lead and cadmium was carried out by sampling macro algae at seven research stations by *random sampling* and heavy metal concentration testing was carried out using AAS (*atomic absorption spectrophotometry*) method. The results of the analysis obtained the highest Pb concentration value found in *Sargassum* sp. (1.5653 mg/kg), followed by *Gracilaria* sp. (0.5849 mg/kg), and *Ulva* sp. (0.6179 mg/kg). For Cd, the highest value is also found in *Sargassum* sp. (0.3121 mg/kg), then *Ulva* sp. (0.3816 mg/kg), and *Gracilaria* sp. (0.3704 mg/kg). Based on the research that has been carried out, it is concluded that *Sargassum* sp. is an algae with the highest bioaccumulation ability of lead and cadmium in the waters of Anyer-Panimbang, so it has great potential to be used as a bioindicators for heavy metal pollution.

Keywords: Cadmium, Lead, Macro Algae, Pollution