ABSTRAK

KAJIAN KANDUNGAN DAN BIOKONSENTRASI LOGAM BERAT TIMBAL (Pb), MERKURI (Hg), DAN KADMIUM (Cd) PADA KERANG HIJAU *Perna viridis* (Linnaeus, 1758) DENGAN UKURAN DAN UMUR YANG BERBEDA DI PULAU PASARAN

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Kerusakan ekosistem pesisir saat ini semakin meningkat, salah satunya diakibatkan oleh pencemaran logam berat. Hal tersebut memberikan efek negatif pada lingkungan karena sulit terdegradasi, mengalami bioakumulasi dan biomagnifikasi, serta bersifat toksik ketika melewati batas tertentu yang kemudian dapat diserap oleh biota perairan terutama kerang-kerang, termasuk kerang hijau (*Perna viridis*). Penelitian ini bertujuan untuk mengevaluasi kandungan dan biokonsentrasi logam berat (Pb, Hg, dan Cd) pada kerang hijau (*Perna viridis l*) dengan ukuran dan umur yang berbeda di Pulau Pasaran. Pengambilan sampel kerang hijau dilakukan dengan 2 ulangan, menggunakan kerang hijau berumur 3, 5, 7 hingga 9 bulan. Konsentrasi logam berat dianalisis menggunakan *atomic absorption spectrofotometry* (AAS). Hasil penelitian menunjukkan bahwa ada pengaruh kandungan logam berat terhadap umur dan ukuran kerang hijau (*Perna viridis*) yang berbeda. Variasi kandungan logam berat teramati pada umur dan ukuran yang berbeda dimana variasi kandungan logam berat Pb tertinggi pada umur 9 bulan (8,0-10,0 cm), sedangkan logam berat Hg dan Cd pada umur 3 bulan (1,5-3,0 cm). Kandungan biokonsenterasi tertinggi logam berat Pb dan Hg diperoleh pada saat daging kerang hijau berumur 9 bulan, sedangkan biokonsentrasi tertinggi logam berat Cd di daging kerang hijau pada umur relatif lebih muda (3 bulan). Adapun pola hubungan antara umur dan ukuran kerang hijau terhadap kandungan logam berat Pb digambarkan melalui kurva polinomial linier, sedangkan Hg dan Cd digambarkan melalui kurva polinomial kuadratik.

Kata kunci: kerang hijau, biokonsentrasi, logam berat, Pulau Pasaran, ukuran, umur.

ABSTRACT

STUDY OF CONTENT AND BIOCONCENTRATION OF HEAVY METALS OF LEAD (Pb), MERCURY (Hg), AND CADMIUM (Cd) IN GREEN MUSSELS *Perna viridis* (Linnaeus, 1758) BASED ON DIFFERENT SIZES AND AGES IN PASARAN ISLAND

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Coastal ecosystems damage has currently increased, one of the causes by heavy metal pollution. This condition has a negative effect on the ecosystem since it is difficult to degrade, undergoes bioaccumulation and biomagnification, as well as toxic when it exceeds certain limit, which can then absorbed by aquatic biota particularly shellfish, such as the green mussels (*Perna viridis*). Therefore, this study aimed to evaluated heavy metals content and the bioconcentration of lead (Pb), mercury (Hg), and cadmium (Cd) in green mussels Perna viridis (Linnaeus, 1758) based on different sizes and ages Pasaran Island. The study was conducted on Pasaran Island, Lampung, Indonesia, and used green mussels aged 3, 5, 7 to 9 months as samples, with 2 replications. Heavy metal concentrations were analyzed using atomic absorption spectrofotometry (AAS). The result showed that variations in heavy metal content were observed at different ages and sizes where the variation in heavy metal content Pb was highest at 9 months of age (8.0-10.0 cm), while heavy metals Hg and Cd were at 3 months of age (1.5-3, 0 cm). The highest bioconcentrations of heavy metals Pb and Hg were obtained when green mussel meat was 9 months old, while the highest bioconcentration of heavy metal Cd was observed in green mussel meat at a relatively younger age (3 months). The pattern of relationship between age and size of green mussels with content of heavy metal Pb is described by means of a linear polynomial curve, while Hg and Cd are described by means of a quadratic polynomial curve.

Key words: green mussels, bioconcentration, heavy metal, Pasaran Island, size, age.