



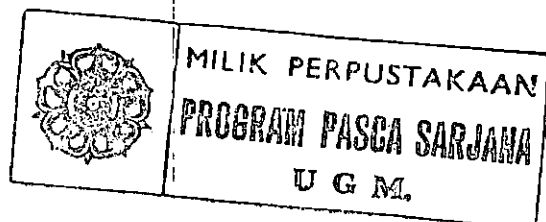
INTISARI

Penelitian ini dilakukan di perairan sungai Kaligarang yang bertujuan untuk mempelajari kandungan raksa (Hg) dalam gastropoda dan mempelajari efek kontaminasi Hg dalam gastropoda terhadap struktur komunitas gastropoda akibat pencemaran Hg.

Analisis konsentrasi Hg pada sampel air, sedimen dan gastropoda dilakukan dengan menggunakan metode Analisis Aktivasi Neutron (AAN), yaitu dengan cara: 1) Preparasi standar primer dan sekunder, 2) Preparasi sampel air, sedimen dan gastropoda, dan 3) Iradiasi dan pencacahan. Sampel standar primer dan sekunder diiradiasi di dalam reaktor atom Kartini Jogjakarta selama 12 jam pada posisi Lazy Susan (flux neutron berorde $1,05 \times 10^{11} \text{ n.cm}^{-2} \cdot \text{s}^{-1}$). Semua sampel dikeluarkan dari reaktor atom dan diamkan selama 22 hari hingga radionuklida dengan umur paruh pendek meluruh habis. Kemudian dilakukan pencacahan sampel. Pencacahan sampel dilakukan dengan spektrometer gamma salur ganda. Data dari hasil pencacahan dianalisis secara kuantitatif pada penentuan tenaga sinar- γ .

Konsentrasi Hg dalam cangkang dan jaringan lunak gastropoda diketahui bahwa Hg dalam jaringan lunak 3 kali lebih besar dibandingkan Hg yang terdapat di dalam cangkangnya. Rasio kandungan Hg pada gastropoda terendah dijumpai pada stasiun pengamatan 1 yaitu sebesar 16,025 mg/L sedangkan tertinggi dijumpai pada stasiun pengamatan 4 sebesar 41,6 mg/L. Berdasarkan analisis regresi korelasi didapatkan hasil sebagai berikut: Pengaruh Hg dalam air dan Hg dalam sedimen terhadap rasio kandungan Hg dalam gastropoda hanya sebesar 20,3 %, kemudian untuk pengaruh rasio kandungan Hg dalam gastropoda terhadap struktur komunitasnya di sungai Kaligarang diketahui bahwa: 1) pengaruh rasio kandungan Hg terhadap kerapatan hanya sebesar 4,4 %, berarti rasio kandungan Hg dalam gastropoda tidak berpengaruh terhadap kerapatan gastropoda. 2) pengaruh rasio kandungan Hg terhadap keanekaragaman gastropoda sebesar 0,1 % berarti rasio kandungan Hg dalam gastropoda tidak berpengaruh terhadap keanekaragaman gastropoda, dan 3) pengaruh rasio kandungan Hg terhadap pemerataan gastropoda sebesar 7,1 %, berarti rasio kandungan Hg dalam gastropoda tidak berpengaruh terhadap pemerataan gastropoda. Sehingga dapat disimpulkan bahwa rasio kandungan Hg dalam gastropoda tidak berpengaruh terhadap struktur komunitasnya.

Kata-kata Kunci : Raksa, Analisis Aktivasi Neutron, Gastropoda, Struktur Komunitas





ABSTRACT

The research was conducted in the Kaligarang river which aims both study of gastropod containing Hg and Hg contamination effect on gastropod to community structure of gastropod as a pollution impact of Hg.

Concentration of Hg analysis at the sample of water, sediment and gastropod was used Neutron Activation Analysis method (AAN), i.e.: 1) preparation of primary and secondary standard 2) preparation of water sample, sediment and gastropod 3) irradiation and counting. The sample of primary and secondary standard was irradiated in the atomic reactor of Kartini Jogjakarta for 12 hours at Lazy Susan position (neutron flux order $1.05 \times 10^{11} \text{ n.cm}^{-2} \cdot \text{s}^{-1}$). The whole of sample were then turned out from atomic reactor and kept for 22 hours. So, the radionuclide that short half time can be decayed completely and then it was done counting of sample. The counting of sample was used multi channel gamma spectrometer. The data resulted from counting was analyzed quantitatively on the determination of gamma ray (γ) energy.

Hg concentration in gastropod organ of mantle and tissues was known that Hg in the tissues have three times bigger than mantle. The lowest ratio of Hg contain in gastropod was found at the sampling site I: 16.025 mg/L while the highest was found at the sampling site IV: 41.6 mg/L. Based on the correlation of regression analysis was resulted that: The effect of Hg in the water and sediment to ratio of Hg contain in gastropod was only 20.3 % while for effect ratio of Hg contain in gastropod to its community structure at Kaligarang river was known that : 1) The ratio of Hg contain effect to density was only 4.4 %, it means that ratio of Hg contain was not effect to gastropod density, 2) The ratio of Hg contain effect to diversity was only 0.1 %, it means that ratio of Hg contain was not effect to gastropod diversity and 3) The ratio of Hg contain to gastropod equitability was only 7.1 % it means that ratio of Hg contain in gastropod was not effect to equitability. As the conclusion that ratio of Hg contain in gastropod was not effect to its community structure.

Key words: Mercury, Neutron Activation Analysis, Gastropod, Community Structure.