

PROFIL KONSENTRASI LOGAM BERAT NON ESENSIAL (As, Cd, Hg, Pb, Ti) DAN PENILAIAN RISIKO KESEHATANNYA PADA KOMODITAS IKAN LAUT DARI PASAR IKAN REJOMULYO, SEMARANG

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INTISARI

Penelitian terkait profil konsentrasi logam berat non esensial beserta penilaian risiko kesehatannya pada komoditas ikan laut yang dijual di Pasar Ikan Rejomulyo, Semarang telah dilakukan. Tujuan dari penelitian ini adalah untuk menentukan konsentrasi logam berat non esensial (As, Cd, Hg, Pb dan Ti), mengetahui korelasi antara konsentrasi logam berat non esensial dengan morfometri (panjang dan berat) ikan, serta melakukan penilaian risiko kesehatan melalui penentuan *Maximum Weekly Intake* (MWI), *Maximum Tolerable Intake* (MTI), dan Batas Aman Konsumsi (BAK). Penentuan logam berat non esensial As, Cd, Ti, dan Pb dilakukan menggunakan instrumen ICP-MS, sedangkan logam Hg dianalisis dengan *mercury analyzer*. Terdapat delapan spesies ikan yang dianalisis dalam penelitian ini yaitu selar bentong (*Selar crumenophthalmus*), selar tetengkek (*Megalaspis cordyla*), layang (*Decapterus sp.*), kembung (*Rastrelliger sp.*), ekor kuning (*Caesionidae cuning*), belanak (*Moolgarda seheli*), barakuda (*Sphyrna barracuda*), dan bandeng (*Chanos chanos*). Sampel dipisahkan terlebih dahulu antara daging dengan bagian lainnya lalu dihilangkan kadar airnya menggunakan metode oven dengan suhu 60 °C selama 24 jam. Sampel yang telah dihilangkan kadar airnya kemudian didestruksi menggunakan *microwave digester*.

Hasil konsentrasi yang diperoleh digunakan untuk mengetahui korelasi antara logam dengan morfometri ikan dan untuk analisis MWI, MTI, dan BAK. Berdasarkan hasil analisis terdapat beberapa spesies yang mengandung logam berat non esensial melebihi baku mutu yang telah ditentukan yaitu konsentrasi As pada semua spesies ikan kecuali bandeng. Hasil analisis tidak menunjukkan adanya spesies ikan yang memiliki kandungan Pb, Cd, dan Hg yang melebihi batas aman yang telah ditetapkan. Terdapat korelasi positif sangat kuat antara logam Hg dengan berat total pada spesies ikan layang dan korelasi negatif sangat kuat antara logam As dengan berat total pada spesies ikan bandeng.

Kata kunci: korelasi, logam berat non esensial, pasar ikan rejomulyo

**CONCENTRATION PROFILE OF NON-ESSENTIAL HEAVY METALS
(As, Cd, Hg, Pb, Ti) AND THEIR HEALTH RISK ASSESSMENT ON
MARINE FISHES COMMODITY FROM REJOMULYO FISH MARKET,
SEMARANG**

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ABSTRACT

Research on the concentration profile of non-essential heavy metals and their health risk assessment on marine fish commodities sold at the Rejomulyo Fish Market, Semarang, has been conducted. This study aimed to determine the concentration of non-essential heavy metals (As, Cd, Hg, Pb, and Ti), to determine the correlation between the concentration of non-essential heavy metals and the morphometry (length and weight) of fish, and to conduct a health risk assessment by determining the Maximum Weekly Intake (MWI), Maximum Tolerable Intake (MTI), and Safe Consumption Limit (BAK). Determination of non-essential heavy metals As, Cd, Ti, and Pb was analyzed using the ICP-MS instrument, while Hg was analyzed using a mercury analyzer. This study was analyzed eight fish species: bigeye scad (*Selar crumenophthalmus*), torpedo scad (*Megalaspis cordyla*), shortfin scad (*Decapterus sp.*), mackerel (*Rastrelliger sp.*), redbelly yellowtail fulisier (*Caesionidae cuning*), bluespot mullet (*Moolgarda seheli*), barracuda (*Sphyraena barracuda*), and milkfish (*Chanos chanos*). First, sample was separated between the meat and other parts and then removed the moisture content using the oven method at 60 °C for 24 hours. After that, samples were destructed using a microwave digester.

The concentration results were used to determine the correlation between metals and fish morphometry and to measure the analysis of MWI, MTI, and BAK. Based on the results of the analysis, there were several species containing essential metals exceeding the predetermined quality standards, namely the concentration of As in all fish species except milkfish. The results of the analysis did not show any fish species that had Pb, Cd, and Hg content that exceeded the safe limit that had been set. There is a strong positive correlation between Hg metal and the total weight of the fish species mackerel and a very strong negative correlation between As metal and the total weight of the fish species milkfish.

Keywords: correlation, non-essential metal, Rejomulyo fish market