RINGKASAN

Cemaran logam berat saat ini telah banyak ditemukan di lingkungan. Di perairan keberadaan logam berat salah satunya disebabkan oleh aktivitas Penambangan emas tanpa izin (PETI). Pencemaran logam berat akibat PETI berdampak pada sedimen sungai dan biota yang hidup di dalamnya. Sungai Batang Masumai merupakan salah satu sungai yang berada di Kabupaten Merangin yang telah berpotensi tercemar logam berat merkuri dan timbal akibat aktivitas PETI. Penelitian ini bertujuan untuk mengetahui kandungan logam berat merkuri dan timbal pada sedimen dan melihat tingkat pencemarannya berdasarkan Indeks Geoakumulasi (Igeo) serta kandungan logam berat merkuri dan timbal pada siput sedot *(Sulcospira testudinaria*) dan melihat Faktor Biokonsentrasi (BCF). Metode penelitian ini dilakukan dengan metode *grab sampling* untuk memperoleh data kuantitatif. Selanjutnya mendestruksi basah semua sampel dan menggunakan instrumen *Inductively Coupled Plasma* (ICP). Penelitian dilakukan dengan mengambil langsung sampel di lokasi penelitian untuk selanjutnya dianalisis di Laboratorium Air Universitas Andalas.

Rata-rata kandungan logam berat merkuri pada sedimen Sungai Batang Masumai di hulu sebesar 0,341 mg/kg, sementara di tengah sebesar 0,494 mg/kg dan di hilir sebesar 0,647 mg/kg. Sementara itu rata-rata kandungan logam berat timbal di hulu sebesar 0,789 mg/kg, di tengah sebesar 0,883 mg/kg dan di hilir sebesar 0,959 mg/kg. Berdasarkan nilai Indeks Geoakumulasi (Igeo), logam berat merkuri dan timbal pada sedimen Sungai Batang Masumai termasuk kategori tercemar ringan (0<Igeo<1). Kondisi ini menunjukkan bahwa perlu adanya penanggulangan agar kondisi Sungai tidak semakin tercemar. Rata-rata konsentrasi logam berat merkuri pada siput sedot *(Sulcospira testudinaria)* adalah 0,057 mg/kg dan kandungan logam berat timbal adalah 0,042 mg/kg. Berdasarkan nilai Faktor Biokonsentrasi (BCF) maka siput sedot yang berada di Sungai Batang Masumai termasuk kategori akumulatif rendah (BCF < 100). Jika dibandingkan dengan baku mutu menurut BPOM Nomor 9 Tahun 2022, dapat disimpulkan bahwa siput sedot di Sungai Batang Masumai masih termasuk kategori aman, yaitu tidak melebihi batas cemaran logam berat pada pangan, yaitu pada logam berat merkuri 0,5 mg/kg dan timbal 1,0 mg/kg. Walaupun hasil analisis masih belum melebihi batas cemaran logam berat pada pangan, masyarakat disarankan tidak terlalu sering mengkonsumsi siput sedot karena kandungan logam berat merkuri dan timbal di dalamnya.

Kata Kunci : PETI, Logam berat merkuri, Logam berat timbal, Sedimen, Siput Sedot, Sungai Batang Masumai

SUMMARY

Heavy metal pollution is now widely found in the envionment. In waters, the presence of heavy metals is one of the causes of Unlicensed Gold Mining (PETI) activities. Heavy metal pollution due to PETI has an impact on river sediments and the biota that live in them. The Batang Masumai River is one of the rivers in Merangin Regency which has the potential to be polluted by the heavy metals mercury and lead due to PETI activities. This study aims to determine the content of heavy metals mercury and lead in sediments and see the level of pollution based on the Geoaccumulation Index (Igeo) and the content of heavy metals mercury and lead in sucking snails (Sulcospira testudinaria) and look at the Bioconcentration Factor (BCF). This research method was carried out by grab sampling method to obtain quantitative data. Then wet destroyed all samples and used an Inductively Coupled Plasma (ICP) instrument. The research was carried out by taking samples directly at the research location for further analysis at the Andalas University Water Laboratory.

The average content of heavy metal mercury in the sediments of the Batang Masumai River in the upstream was 0.341 mg/kg, while in the middle it was 0.494 mg/kg and in the downstream it was 0.647 mg/kg. Meanwhile, the average lead content in the upstream was 0.789 mg/kg, in the middle was 0.883 mg/kg, and downstream was 0.959 mg/kg. Based on the value of the Geoaccumulation Index (Igeo), the heavy metals mercury and lead in the Batang Masumai River sediments are classified as lightly polluted (0<Igeo<1). This condition indicates that there is a need for countermeasures so that the condition of the river is not increasingly polluted. The average concentration of the heavy metal mercury in the sucking snail (Sulcospira testudinaria) was 0.057 mg/kg and the heavy metal lead content was 0.042 mg/kg. Based on the value of the Bioconcentration Factor (BCF), the sucking snails in the Batang Masumai River are in the low accumulative category (BCF < 100). When compared with the quality standards according to BPOM Number 9 of 2022, it can be concluded that sucking snails in the Batang Masumai River are still in the safe category, that is, they do not exceed the limit for heavy metal contamination in food, namely 0.5 mg/kg of heavy metal mercury and 1 mg/kg of lead. .0 mg/kg. Although the results of the analysis still do not exceed the limit for heavy metal contamination in food, it is recommended that people not consume sucking snails too often because of the heavy metals mercury and lead in them.

Keywords *: Unlicensed gold mining, Heavy metal mercury, Heavy metal lead, Sediment, Sucking snail, Batang Masumai River*