ABSTRAK

Aktivitas antropogenik seperti pelabuhan niaga, wisata air, dan industri kilang minyak di sekitar perairan Sungai Donan berpotensi menyebabkan pencemaran logam Hg di sedimen yang berbahaya bagi ekosistem. Merkuri (Hg) adalah logam berat yang memiliki tingkat toksisitas tertinggi dibandingkan logam lainnya. Penelitian ini bertujuan untuk menganalisis status pencemaran logam Hg di Sungai Donan serta pengaruh fraksi sedimen dan bahan organik terhadap konsentrasi logam Hg di sedimen. Pengambilan sampel sedimen di lakukan di tiga stasiun yang mewakili karakteristik wilayah berbeda. Analisis konsentrasi logam Hg dilakukan menggunakan metode CVAAS. Hasil penelitian menunjukkan konsentrasi rata-rata logam Hg di sedimen Sungai Donan ialah 0,219 mg/kg, dengan konsentrasi tertinggi ditemukan di Stasiun 3 yang merupakan daerah pembuangan limbah industri kilang minyak, yaitu sebesar 0,47 mg/kg. Berdasarkan nilai rata-rata CF dan I-geo sebesar 3,643 dan 1,154, Sungai Donan diindikasikan sebagai tercemar sedang. Analisis korelasi menunjukkan bahwa bahan organik berpengaruh signifikan terhadap konsentrasi logam Hg di sedimen, namun sebaliknya untuk fraksi sedimen menunjukkan bahwa semakin banyak fraksi halus sedimen maka konsentrasi logam Hg di sedimen Sungai Donan semakin menurun.

Kata kunci: Bahan organik, merkuri, pencemaran laut, sedimen.

ABSTRACT

Anthropogenic activities such as commercial ports, water tourism, and the oil refinery industry around the waters of the Donan River have the potential to cause Hg metal pollution in sediments that are harmful for the ecosystem. Mercury (Hg) is a heavy metal that has the highest level of toxicity compared to other metals. This study aims to analyze the status of Hg metal pollution in the Donan River and the influence of sediment grain size and organic matter on the concentration of Hg metal in sediments. Sediment samples were taken at three stations, which representing different regional characteristics. Analysis of Hg metal concentration was conducted using the CVAAS method. The results of the study showed that the average concentration of Hg metal in the Donan River sediment was 0,219 mg/kg, with the highest concentration found at Station 3 which is an oil refinery industrial waste disposal area, which amounted to 0,47 mg/kg. Based on the average Cf and I-geo values of 3,643 and 1,154, Donan River is indicated as moderately polluted. Correlation analysis showed that organic matter has a significant effect on the concentration of Hg metal in sediment, otherwise for grain size which showed that the more fine fraction of sediment, the concentration of Hg metal in Donan River sediment decreased.

Keywords: *Organic matter, mercury, ocean pollution, sediment.*