ABSTRAK

Pesisir merupakan wilayah pertemuan antara darat dan laut. Wilayah Pesisir Pekalongan merupakan bagian dari Pesisir utara Jawa Tengah dan banyak masyarakat sekitar yang melakukan aktivitas di wilayah tersebut. Aktivitas-aktivitas manusia tersebut akan memengaruhi proses dinamika wilayah kepesisiran seperti berpengaruh terhadap kadar mikronutrien di perairan. Mikronutrien dapat berupa unsur logam yang bersifat esensial bagi makhluk hidup seperti besi (Fe), tembaga (Cu), dan seng (Zn). Penelitian ini bertujuan untuk menganalisis kadar, pola distribusi, serta dinamika biogeokimia mikronutrien logam Fe, Cu, dan Zn pada musim barat di wilayah Pesisir Pekalongan, Jawa Tengah. Metode analisis yang digunakan yaitu menggunakan Spektrofotometer Serapan Atom (SSA). Kadar Fe di Sungai Mrican berkisar antara 0,0092 – 0,6295 mg/L, Sungai Pencongan berkisar antara 0,0101 – 0,0945 mg/L, dan Pantai Wonokerto berkisar antara 0,2937 – 0,5937 mg/L. Kadar Cu di Sungai Mrican berkisar antara 0,0328 – 0,1665 mg/L, Sungai Pencongan berkisar antara 0,1710 – 0,2458 mg/L, dan Pantai Wonokerto berkisar antara 0,0675 – 0,2820 mg/L. Kadar Zn di Sungai Mrican berkisar antara 0,0207 – 0,0642 mg/L, Sungai Pencongan berkisar antara 0,0226 – 0,1222 mg/L, dan Pantai Wonokerto berkisar antara 0,0308 – 0,1571 mg/L. Kadar Fe, Cu, dan Zn di wilayah Pesisir Pekalongan memiliki pola distribusi berbeda-beda yang dipengaruhi oleh sumber masing-masing dan juga faktor lingkungan yang memengaruhinya seperti arus, curah hujan, pasang surut, adsorbsi dan absorbsi. Namun, semua logam memiliki nilai tinggi pada titik-titik stasiun yang berada di dekat laut. Sementara itu, kondisi tinggi rendahnya kadar Fe, Cu, dan Zn di wilayah Pesisir Pekalongan juga dipengaruhi oleh berbagai faktor seperti arus, curah hujan, bahan organik, tumbuhan hiperakumulator, serta parameter fisikokimia berupa temperatur, pH, DO, dan salinitas.

Kata kunci: logam, kadar, distribusi, faktor lingkungan, kualitas perairan

ABSTRACT

Coastal areas are the meeting point between land and sea. The Pekalongan coastal area is part of the northern coast of Central Java and many local people carry out activities in the area. These human activities will affect the dynamics of the coastal area, such as affecting micronutrient levels in the waters. Micronutrients can be in the form of metal elements that are essential for living things such as iron (Fe), copper (Cu), and zinc (Zn). This study aims to analyze the levels, distribution patterns, and biogeochemical dynamics of metal micronutrients Fe, Cu, and Zn in the western season in the Pekalongan Coastal region, Central Java. The analytical method used was Atomic Absorption Spectrophotometer (AAS). Fe levels in Mrican River ranged from 0,0092 – 0,6295 mg/L, Pencongan River ranged from 0,0101 – 0,0945 mg/L, and Wonokerto Beach ranged from 0,2937 – 0,5937 mg/L. Cu levels in Mrican River ranged from 0,0328 – 0,1665 mg/L, Pencongan River ranged from 0,1710 – 0,2458 mg/L, and Wonokerto Beach ranged from 0,0675 – 0,2820 mg/L. Zn levels in Mrican River ranged from 0,0207 – 0,0642 mg/L, Pencongan River ranged from 0,0226 – 0,1222 mg/L, and Wonokerto Beach ranged from 0,0308 – 0,1571 mg/L. The levels of Fe, Cu, and Zn in the Pekalongan Coastal region have different distribution patterns that are influenced by their respective sources and also environmental factors that affect them such as currents, rainfall, tides, adsorption and absorption. However, all metals have high values at station points near the sea. Meanwhile, the high and low levels of Fe, Cu and Zn in the Pekalongan coastal area are also influenced by various factors such as currents, rainfall, organic matter, hyperaccumulator plants, and physicochemical parameters such as temperature, pH, DO, and salinity.

Keywords: *metals, levels, distribution, environmental factors, water quality*