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ABSTRAK

Ekosistem mangrove merupakan kawasan pesisir yang memiliki fungsi ekologis penting dalam menjaga kestabilan lingkungan dan keanekaragaman hayati. Namun, aktivitas antropogenik seperti budidaya perikanan intensif berpotensi menghasilkan limbah cair yang mengandung amonia, yang dapat berdampak buruk terhadap kesehatan mangrove. Penelitian ini bertujuan untuk menganalisis pengaruh limbah cair amonia terhadap indeks kesehatan mangrove di Desa Tengket, Kecamatan Arosbaya, Kabupaten Bangkalan. Metode yang digunakan adalah deskriptif kuantitatif dengan pendekatan survei lapangan, pengambilan sampel air laut, dan pengukuran parameter vegetasi mangrove yang meliputi diameter batang, tutupan kanopi, dan jumlah pancang. Konsentrasi amonia diuji menggunakan metode spektrofotometri berdasarkan SNI 06-6989.30-2005, sedangkan indeks kesehatan mangrove dihitung menggunakan rumus Mangrove Health Index (MHI). Hasil penelitian menunjukkan konsentrasi amonia tertinggi sebesar 0,254 mg/L dan terendah sebesar 0,0348 mg/L, yang masih berada di bawah batas baku mutu yang ditetapkan (0,3 mg/L). Nilai rata-rata indeks kesehatan mangrove di ketiga stasiun berada pada kategori sedang, yaitu berkisar antara 49,57% hingga 61,25%. Uji regresi linier sederhana menunjukkan adanya hubungan negatif antara konsentrasi amonia dan indeks kesehatan mangrove dengan nilai signifikansi $<0,05$. Hal ini mengindikasikan bahwa peningkatan konsentrasi amonia, meskipun belum melampaui ambang baku mutu, tetap berpotensi menurunkan kesehatan ekosistem mangrove. Dengan demikian, pengelolaan limbah cair dari aktivitas tambak secara berkelanjutan perlu diperhatikan untuk menjaga kualitas lingkungan dan mempertahankan fungsi ekologis mangrove.

Kata Kunci: *Limbah Cair Amonia, Indeks Kesehatan Mangrove, DesaTengket*

Muhammad Royhan Muallif. NIM 210341100003. Analysis of the Effect of Ammonia Liquid Waste on Mangrove Health Index in Tengket Village, Arosbaya District, Bangkalan Regency. Supervisor by **Jihannuma Adibiah Nurdini, S.T., M.T.**

ABSTRACT

Mangrove ecosystem is a coastal area that has an important ecological function in maintaining environmental stability and biodiversity. However, anthropogenic activities such as intensive fisheries cultivation have the potential to produce liquid waste containing ammonia, which can have a negative impact on mangrove health. This study aims to analyze the effect of ammonia liquid waste on the mangrove health index in Tengket Village, Arosbaya District, Bangkalan Regency. The method used is descriptive quantitative with a field survey approach, seawater sampling, and measurement of mangrove vegetation parameters including stem diameter, canopy cover, and number of stakes. Ammonia levels were tested using the spectrophotometric method based on SNI 06-6989.30-2005, while the mangrove health index was calculated using the Mangrove Health Index (MHI) formula. The results showed the highest ammonia levels were 0.254 mg/L and the lowest were 0.0348 mg/L, which were still below the established quality standard limit (0.3 mg/L). The average value of the mangrove health index at the three stations was in the moderate category, ranging from 49.57% to 61.25%. A simple linear regression test showed a negative relationship between ammonia levels and the mangrove health index with a significance value of <0.05 . This indicates that increasing ammonia levels, although not exceeding the quality standard threshold, still have the potential to reduce the health of the mangrove ecosystem. Thus, sustainable management of liquid waste from pond activities needs to be considered to maintain environmental quality and maintain the ecological function of mangroves.

Keywords: *Ammonia Liquid Waste, Mangrove Health Index, Tengket Village.*