

## ABSTRAK

### ANALISIS PARAMETER NITROGEN, FOSFOR, KALIUM TERHADAP KERAPATAN ECENG GONDOK DI DANAU KERINCI

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#### Abstrak

Danau Kerinci merupakan danau alami di Provinsi Jambi yang berperan penting sebagai sumber air, perikanan, dan pariwisata. Peningkatan aktivitas domestik dan pertanian di sekitar danau menyebabkan masuknya nutrisi, terutama nitrogen (N), fosfor (P), dan kalium (K), yang berpotensi memicu eutrofikasi dan pertumbuhan eceng gondok (*Eichhornia crassipes*). Penelitian ini bertujuan menganalisis konsentrasi nitrogen, fosfor, dan kalium serta hubungannya dengan kepadatan eceng gondok di Danau Kerinci. Penelitian dilakukan secara kuantitatif dengan pendekatan deskriptif dan korelasional. Sampel air diambil pada lima titik di wilayah Desa Sanggaran Agung. Analisis nitrogen dan fosfor dilakukan menggunakan spektrofotometri UV-Vis, sedangkan kalium dianalisis menggunakan *Atomic Absorption Spectrophotometer* (AAS). Kepadatan eceng gondok ditentukan menggunakan metode kuadrat. Data dianalisis menggunakan statistik deskriptif dan uji korelasi Spearman. Hasil penelitian menunjukkan konsentrasi nitrogen berkisar antara 1,62–6,33 mg/L dan fosfor <0,0188–0,1695 mg/L, sedangkan kalium berada di bawah batas deteksi alat (<0,0297 mg/L). Kepadatan eceng gondok ditemukan pada tiga titik dengan nilai tertinggi 52 individu/m. Uji korelasi Spearman menunjukkan nitrogen berkorelasi positif sedang ( $r = 0,500$ ) dan fosfor berkorelasi negatif sedang ( $r = -0,500$ ) terhadap kepadatan eceng gondok, namun tidak signifikan secara statistik ( $p > 0,05$ ).

**Kata kunci:** Danau Kerinci, eceng gondok, nitrogen, fosfor, kalium, eutrofikasi, korelasi Spearman.

## ABSTRACT

### ***ANALYSIS OF NITROGEN, PHOSPHORUS, AND POTASSIUM PARAMETERS ON WATER HYACINTH DENSITY IN LAKE KERINCI***

*Trio Pramana : Supervised by Supervisor I Drs. Guntar Marolop Saragih, M.Si and Supervisor II Ir. Siti Umi Kalsum, S.T., M.Eng*

#### *Abstract*

*Lake Kerinci is a natural lake in Jambi Province that plays an important role as a source of water, fisheries, and tourism. Increasing domestic and agricultural activities around the lake have contributed to nutrient enrichment, particularly nitrogen (N), phosphorus (P), and potassium (K), which may trigger eutrophication and excessive growth of water hyacinth (Eichhornia crassipes). This study aimed to analyze the concentrations of nitrogen, phosphorus, and potassium and their relationship with water hyacinth density in Lake Kerinci. The research employed a quantitative approach with descriptive and correlational analyses. Water samples were collected from five sampling points in the Sanggaran Agung area. Nitrogen and phosphorus concentrations were analyzed using UV-Vis spectrophotometry, while potassium was measured using an Atomic Absorption Spectrophotometer (AAS). Water hyacinth density was determined using the quadrat method. Data were analyzed using descriptive statistics and Spearman correlation analysis. The results showed that nitrogen concentrations ranged from 1.62 to 6.33 mg/L and phosphorus concentrations ranged from <0.0188 to 0.1695 mg/L, while potassium concentrations were below the detection limit (<0.0297 mg/L). Water hyacinth was observed at three sampling points, with the highest density of 52 individuals/m. Spearman correlation analysis indicated a moderate positive correlation between nitrogen concentration and water hyacinth density ( $r = 0.500$ ) and a moderate negative correlation for phosphorus ( $r = -0.500$ ); however, both relationships were not statistically significant ( $p > 0.05$ ).*

**Keywords:** *Lake Kerinci, water hyacinth, nitrogen, phosphorus, potassium, eutrophication, Spearman correlation.*