

INTISARI

Peranan produsen primer di suatu perairan sangat penting. Fitoplankton merupakan parameter yang menentukan produktivitas primer karena adanya kandungan klorofil a sehingga dapat melakukan fotosintesis dengan bantuan cahaya matahari yang menghasilkan senyawa organik dan oksigen. Fitoplankton merespon dengan cepat terhadap perubahan lingkungan dan menunjukkan karakteristik yang lebih konservatif daripada perubahan variabel fisik dan kimia dalam ekosistem perairan. Penelitian ini bertujuan untuk menginvestigasi variasi temporal konsentrasi klorofil a, plankton dan nutrisi berupa nitrogen dan fosfor di Rawa Pening, Jawa Tengah, Indonesia. Sampel air dikumpulkan setiap bulan dari tiga titik lokasi pengambilan sampel dari bulan April-Oktober 2021. Sampel air diambil di permukaan air sebanyak 1 L disaring menggunakan plankton net. Kelimpahan plankton dihitung menggunakan metode *Sedgwick Rafter cell count* (SRCC). Analisis struktur komunitas fitoplankton diperoleh dengan menghitung indeks keanekaragaman, indeks kemerataan, dan indeks dominasi. Analisis parameter fisika dilakukan dengan pengukuran *insitu* dan analisis spektrofotometer. Berdasarkan karakterisasi morfologi, tercatat 19 genus fitoplankton dan 6 genus zooplankton. Komposisi fitoplankton didominasi oleh divisi Bacillariophyta (4 genus), Chlorophyta (5 genus), Cyanobacteria (5 genus), Charophyta (3 genus), Euglenophyta (1 genus), dan Ochrophyta (1 genus). Komposisi zooplankton didominasi oleh Arthropoda (3 genus) dan Rotifera (3 genus). Genus fitoplankton yang mendominasi adalah *Aulacoseira*, diikuti oleh genus *Nitzschia* dan *Synedra*. Genus zooplankton yang mendominasi adalah *Echinocamptus*, *Brachionus* diikuti *Ceriodaphnia*. Konsentrasi klorofil a berkisar 17.4–50.2 mg/m³. Secara temporal konsentrasi klorofil a tertinggi tercatat pada bulan Oktober dan terendah pada bulan Juni. Konsentrasi klorofil a berkorelasi positif dengan kelimpahan fitoplankton, suhu dan total fosfor, tetapi berkorelasi negatif dengan nitrit.

ABSTRACT

Phytoplankton is a parameter that defines primary productivity due to the presence of chlorophyll so that it can carry out photosynthesis with the help of sunlight which produces organic compounds and oxygen. Phytoplankton responds quickly to environmental changes and exhibits more characteristics than changes in physical and chemical variables in aquatic ecosystems. This study aims to investigate temporal variations in the concentration of chlorophyll a, plankton, and nutrients in the form of nitrogen and phosphorus in Rawa Pening, Central Java, Indonesia. Air samples were collected from three sampling locations from April to October 2021. Water samples were taken from the water's surface as much as 1 L filtered using a plankton net. The abundance of plankton was calculated using the Sedgwick Rafter cell count (SRCC) method. Phytoplankton analysis was obtained by calculating the diversity index, evenness index, and structure dominance index. Physical parameter analysis was carried out by in situ measurements and spectrophotometer analysis. Based on the morphological characterization, there were 19 phytoplankton genera and 6 zooplankton genera. The composition of phytoplankton is dominated by the division Bacillariophyta (4 genera), Chlorophyta (5 genera), Cyanobacteria (5 genera), Charophyta (3 genera), Euglenophyta (1 genus), and Ochrophyta (1 genus). The zooplankton composition is dominated by Arthropods (3 genera) and Rotifers (3 genera). The dominant phytoplankton genus is Aulacoseira, followed by the genera Nitzschia and Synedra. The dominant zooplankton genus is Echinocamptus, Brachionus followed by Ceriodaphnia. chlorophyll concentrations ranged from 17.4–50.2 mg/m³. Temporarily the highest chlorophyll a concentration was recorded in October and the lowest was in June. the concentration of chlorophyll a was positively correlated with phytoplankton, temperature, and total phosphorus, but negatively correlated with nitrogen.