

ABSTRAC

Lake Balekambang is a water area formed by volcanic activity and is located in the Dieng Plateau. The lake is facing a threat in the form of sedimentation, so it's important to identify protists to help control the sedimentation and understand the organisms that make up the lake's ecosystems. One efficient method to do this is using Environmental DNA (eDNA) to analyze microscopic organisms. In this study, eDNA samples were collected from the lake's sediments and then extracted using the ZymoBIOMICS Fecal/Soil Microbe Miniprep kit. PCR amplification was performed using an 18S rRNA primer, followed by sequencing using Next Generation Sequencing (NGS). Bioinformatic analysis with QIIME 2 and RSTUDIO revealed 14,630 reads, including 179 Amplicon Sequence Variants (ASVs), all belonging to Eukaryotes. The analysis identified 21 families of protists in Lake Balekambang, with 16 families found in both sample locations and 9 families unique to each location, with 4 families common to both. The Diversity Index (H') was calculated to be 4.5 and 3.5, indicating high community diversity and environmental stability, while the Dominance Index (C) values of 0.03 and 0.08 suggest a low level of dominance within the ecosystem.

Keywords: *protists, sediment samples, Balekambang Lake, eDNA, 18S rRNA gene*