

ABSTRACT

Eleonora Chrisanti Shinta Dewi, 24020220140066. **Isolation and Molecular Identification of Phosphate-Solubilizing Endophytic Fungi from Mangrove Roots of Mangrove Conservation Area Mangkang Semarang** (under the supervision of Agung Suprihadi and Yustian Rovi Alfiansah).

*Mangroves are woody, high salinity resistant, and adaptable plants. Endophytic fungi are one of the success factors of mangrove adaptation because they can hydrolyze insoluble phosphate, thus playing a role in the mangrove phosphorus cycle. This study aims to isolate and obtain endophytic mold isolates from mangrove roots that have the potential to dissolve phosphate in vitro and determine the profile of mangrove sediments based on pH, Total Dissolved Solids, Electrical Conductivity, and P-total parameters. The research was conducted by sampling, analysis of sediment parameters and P-total, isolation and characterization of endophytic fungi, qualitative and quantitative analysis of phosphate dissolution, and molecular identification of isolates based on ITS markers. The results showed 5 mangrove root endophytic mold isolates that had been selected from 8 isolates of the genus *Aspergillus* sp. (A1 and C1.3), *Eurotium* sp (A3), *Penicillium* sp. (C1.2), and *Chaetomium* sp. (C3) based on macroscopic and microscopic characterization. The results of DNA visualization on a 1.5% agarose gel showed the length of the DNA bands of isolates A1, C1.2, and C1.3 were around 600 bp, 500 bp, and 500 bp, respectively. Based on the results of the Tukey test at 5% level, isolate A1 obtained from station A (pH = 7, TDS = 4233 ppm, EC = 322 mS/m) is the best isolate in dissolving phosphate (443.8 ppm) after 14 days of incubation.*

Key words: phosphate solubilizing activity, phosphate, endophytic fungi, mangrove