

FOREWORD

Praise the presence of Allah SWT for all His blessings and guidance so that the author can complete the preparation of a research proposal entitled "Isolation and Molecular Identification of Thraustochytrids from Decayed Mangrove Leaves in Mangrove Forest Glagah Wangi Demak" as one of the requirements for obtaining a Bachelor of Science degree (S.Si) at the Faculty of Science and Mathematics, Diponegoro University under the guidance of Dr.rer.nat. Anto Budiharjo, S.Si., M.Biotech., and Dr. Shumpei Iehata.

Thraustochytrids are classified as a group within the kingdom Chromista, which comprises unicellular heterotrophic, osmoheterotrophic, non-photosynthetic, eukaryotic-stamenopile, and oleaginous organisms. These organisms are distributed across a variety of habitats, including mangrove ecosystems. Thraustochytrids are of particular interest due to their ability to produce long-chain polyunsaturated fatty acids (PUFAs), particularly omega-3 fatty acids such as docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). These fatty acids hold significant value in both the health sector and the biotechnology industry.

This research is designed to investigate the macroscopic and microscopic differences of Thraustochytrids isolated from Glagah Wangi Demak. Furthermore, it aims to screen the lipid content of the isolates through Sudan Black B staining and to perform molecular identification on lipid-rich isolates that exhibit intense lipid droplet staining, suggesting their potential as high lipid producers, as indicated by the staining results. The writer acknowledges the imperfections present in this research, encompassing material content, writing structure, and language usage. Therefore, all suggestions and improvements for this research proposal are warmly welcomed. It is hoped that this research proposal will prove beneficial to readers in general and, specifically, to the author.

Semarang, 15 December 2025

Yufiarta Hapsari