ABSTRACT

NUNANG LAMAEK MAY. Bacterial Diversity from The Spores of Arbuscular Mycorrhizal Fungi Gigaspora sp. and Glomus sp. and Their Potential as Mycorrhiza Helper Bacteria. Under academic supervision of SRI WILARSO BUDIR and ARUM SEKAR WULANDARI.

Mycorrhiza Helper Bacteria are bacteria that potentially assist the development of mycorrhiza. This study was aimed to explore the Mycorrhizal Helper Bacteria (MHB) from the spore of Arbuscular Mycorrhizal Fungi (AMF) Gigaspora sp. and Glomus sp. The enzymatic activity (cellulase, protease and pectinase), antagonists with pathogen Sclerotium sp., Rhizoctonia sp., Ganoderma sp. and mycorrhizal stimulation were conducted. The results showed that there were 7 species of bacteria isolated from the spores of Gigaspora sp. and 5 species from the spores of Glomus sp. Of the 12 bacteria, 7 bacteria had the potential to produce the enzymes of hydrolytic cellulase and proteases. Based on in vitro test, there were 4 species of bacteria found to have the ability to inhibit the growth of 3 species of pathogens tested. Eight types of bacteria were found to be capable of stimulating the development of mycorrhizal hyphae. There were 3 isolates of bacteria showed the antagonistic toward pathogenic fungi as well as stimulation of AMF. The bacteria obtained were very potential to be developed as biological agents in improving the quality of soil and plants growth.

Keywords: Mycorrhizal Helper Bacteria, Gigaspora sp., Glomus sp., Enzimatic, Antagonist