

ABSTRACT

Bunga Septiyadi Aulia Putri. 24020220140033. **Metabolic Profiling and Molecular Identification of *Trichoderma Spp.* from Various Enviroments as Biological Control Agents Againts Phytopatogen *Sclerotium rolfsii.*** Supervised by Arina Tri Lunggani and Anto Budiharjo.

Trichoderma spp. fungi from various environments have the ability to produce secondary metabolites. The secondary metabolites produced by *Trichoderma spp.* have the potential as Biological Control Agents (BCAs) that can control pathogens causing diseases through their antifungal and antimicrobial compounds. These compounds work by inhibiting the metabolic activity of pathogens that cause diseases in plants. The aim of this research is to test the antagonistic ability of *Trichoderma spp.* isolates against the pathogen *Sclerotium rolfsii*, identify secondary metabolite compounds, and determine the species of *Trichoderma spp.* isolates most potential as antagonistic fungi. The method employed is the antagonistic test of *Trichoderma spp.* against *Sclerotium rolfsii*, with the best isolate being identified based on the ITS (Internal Transcribed Spacer) gene marker, and determining the secondary metabolite compounds produced through Gas Chromatography Mass Spectrophotometer. The results of the study found that 10 isolates of *Trichoderma spp.* from various environments have the potential to inhibit the growth of pathogenic fungi, with the best isolate being TTan (soil) with a formed inhibition zone of 7.5 mm and TBgl (mushroom cultivation substrate) of 7 mm. The dominating compounds in both isolates are *Benzene, 1-methoxy-4-(2-propenyl)- (CAS)* and *Linalool*, which have antifungal abilities. Molecular identification results using *Internal Transcribed Spacer* (ITS 5 dan ITS 4) showed that the TTan isolate have closer identity with genus *Trichoderma asperellum* from soil.

Kata kunci: *Antagonistic, BCAs, ITS, Metabolic, Antagonistic*