ABSTRACT

Farra Nurul Anniza. 24020221130041. **The Potencial of Endophytic Fungi Isolated From Purple Eggplant (*Solanum melongena* L.) Mustang F1 Cultivar Leaves in Inhibiting *Fusarium oxysporum.*** Supervised by Susiana Purwantisari dan Agung Suprihadi.

The production of purple eggplant (*Solanum melongena* L.) in Indonesia decreased by 23.32% in 2023. One of the contributing factors to this decline is the fungal pathogen *Fusarium oxysporum*, which causes wilt disease with an infection rate of 42.54%. Endophytic fungi are known to produce secondary metabolites with potential antifungal activity. This study aimed to explore endophytic fungi from the leaves of purple eggplant cultivar Mustang F1 and to evaluate the antifungal activity of their secondary metabolites against *Fusarium oxysporum*. Samples were collected from both healthy and diseased plants in Pagaruyung Subdistrict, Kendal. Five fungal isolates were successfully identified macroscopically and microscopically as *Trichoderma harzianum*, *Penicillium citrinum*, *Mucor plumbeus*, *Cladosporium herbarum*, and *Aspergillus niger*. Pathogenicity testing based on Koch's postulates confirmed that *Fusarium oxysporum* caused 100% wilt incidence in eggplant. Secondary metabolites were extracted using ethyl acetate and tested using the disc diffusion method. Phytochemical screening revealed the presence of alkaloids, flavonoids, and saponins. Antifungal assay results showed that all endophytic fungal extracts exhibited statistically significant antifungal activity compared to the negative control (DMSO) and positive control (Dithane M-45) in inhibiting *Fusarium oxysporum*. The highest antifungal activity was shown by *Cladosporium herbarum* and *Trichoderma harzianum*, which were also significantly different from the other isolates.

Kata kunci: *Antifungal, Endophytic Fungi, Fusarium oxysporum, Secondary Metabolites.*