

ABSTRACT

Nina Risnanda Triana. 24020122410004. **Activity of α -Amylase Inhibitor of Endophytic Fungi of Tamoenju Plant (*Hibiscus surattensis* L.).** Under the guidance of Sri Pujiyanto and Endang Kusdiyantini.

Tamoenju (*Hibiscus surattensis* L.) is a flowering plant belonging to the Malvaceae family and is widely found in tropical regions including Indonesia, this plant has been used as the main alternative medicine for various diseases, including diabetes. In the relationship between plants and microorganisms, Tamoenju (*Hibiscus surattensis* L.) is a potential host for endophytic fungi, namely fungi that live symbiotically in plant tissues such as leaves, stems and roots without causing symptoms of disease. Endophytic fungi are known to be able to produce various bioactive secondary metabolites that have the potential to be developed as therapeutic agents, including α -amylase enzyme inhibitors. α -amylase inhibitors are compounds that inhibit the amylase enzyme from breaking down carbohydrates into glucose. This study aims to determine the activity of α -amylase inhibitors from endophytic fungal extracts of Tamoenju plants (*Hibiscus surattensis* L.), comparing the potential activity of α -amylase inhibitors from endophytic fungal extracts of Tamoenju (*Hibiscus surattensis* L.) with standard inhibitors *Acarbose*. The methods used in this study were isolation of endophytic fungi, purification of endophytic fungi, characterization of endophytic fungi, extraction of endophytic fungal metabolites, α -amylase inhibitor test of endophytic fungi and optimization of optimum time of α -amylase inhibitor. Isolation of endophytic fungi was carried out on the roots and stems of Tamoenju plants on *Potato Dextrose Agar* (PDA) medium. The α -amylase inhibitor test was carried out to determine the extract of endophytic fungi of Tamoenju plants in inhibiting the activity of the α -amylase enzyme. The data obtained were analyzed by *Analysis of Variance* (ANOVA). The results of the isolation obtained 6 isolates of endophytic fungi of Tamoenju plants with one potential isolate, namely isolate TA3 which had an inhibitory ability of 86.87%. The optimum time of α -amylase inhibitor in isolate TA3 was on the seventh day with an inhibitor activity of 85,93%. The extract of isolate TA3 at a concentration of 0.13 ppm with an inhibitor percentage of 63.81% and an IC_{50} value of 0.06 μ g/mL.

Keywords: *α -amylase inhibitor, endophytic fungus, Hibiscus surattensis L, antidiabetic.*