ABSTRACK

Monik Aulia Nur Hidayah. 24020120120028. **Isolation of *Rhizopus* sp. and Test of *α*-Glukosidase Inhibitor Activity in Tempeh Yeast**. Under the Guidance of Sri Pujiyanto and Susiana Purwantisari.

Diabetes mellitus is a metabolic disorder that is influenced by increased blood glucose levels because the body cannot produce insulin. Diabetes mellitus can be prevented by α-glukosidase inhibitors because they have inhibitory activity against the α-glukosidase enzyme. This study aims to determine *Rhizopus* sp. isolated from tempeh yeast has the ability as an α-glukosidase inhibitor and determine the test results of α-glukosidase inhibitors with the best concentration that can inhibit the work of a α-glukosidase enzyme. The research began with sampling tempeh yeast from 10 different regions namely R1Bogor, R2Boyolali, R3Kediri, R4Mojokerto, R5Surabaya, R6Nganjuk, R7Yogyakarta, R8Bandung, R9Majalengka, R10Wonogiri. Isolation of *Rhizopus* sp. was isolated from tempe yeast. *Rhizopus* sp. isolates were characterized microscopically. Selecting 10 isolates of *Rhizopus* sp. that have the potential as α-glukosidase inhibitors. The best isolate selection results were produced on PDB media. Extraction between liquid media with ethyl acetate (1:1). Testing with compound concentrations of 25%, 50%, 75%, 100% each repetition 3 times. The α-glukosidase inhibitor test was carried out using a Uv-Vis spectrophotometer and the percentage of inhibition was calculated. The results showed that *Rhizopus* sp. from tempeh yeast was able to work as an α-glukosidase inhibitor. R3 Kediri as the best result with 100% compound concentration with an absorbance value of 0,143 and produced a percentage of inhibition of 66,51%. The higher the concentration of the compound, the greater the inhibition ability. The Anova Test (*Analysis of Variance*) result of $p<0,05$ stating that the extract concentration treatment has a significant effect on the activity of the α-glukosidase inhibitor.

Key word: Diabetes Mellitus, α-Glukosidase Inhibitor, Rhizopus sp.