ABSTRACT

Ifnawati, Khoir. 2013. **Effect of Crude Chitinase Enzyme from Bacteria** *Pseudomonas pseudomallei* **and** *Klebsiella ozaenae* **on Growth, Morphology, and Levels of N-acetylglucosamine** *Fusarium oxysporum*. Supervisor; Dr. Hj. Ulfah Utami, M.Si and Dr. H. Munirul Abidin, M.A

Keywords: *Pseudomonas pseudomallei* bacteria, *Klebsiella ozaenae*, *Fusarium oxysporum*, chitinase enzyme, N-acetylglucosamine, anti-fungal, morphology.

Fusarium wilt is a disease caused by the fungal pathogen *Fusarium oxysporum*. This fungus is one that is difficult to control fungal pathogens. This study was conducted to determine the effect of crude chitinase enzyme isolated from *Pseudomonas pseudomallei* bacterium, *Klebsiella ozaenae*, and a combination of both on growth, morphology, and levels of N-acetylglucosamine *F.oxysporum*.

This study was an experimental study using a completely randomized design (CRD), 4 treatments and 6 replications. The research was done in March to June 2013 in the Laboratory of Microbiology, Genetics, and Optical Science and Technology Faculty of the Islamic University of Maulana Malik Ibrahim Malang. The data were analyzed using ANOVA Oneway and if treatment is given effect then followed by Duncan's test at 5% level. The treatment used is the enzyme chitinase from *Pseudomonas pseudomallei* bacteria, from bacteria *Klebsiella ozaenae*, of combination among *Pseudomonas pseudomallei* bacterium and *Klebsiella ozaenae*, and control.

The results showed that all treatments providing both chitinase enzyme of *Pseudomonas pseudomallei* bacterium, *Klebsiella ozaeae*, and a combination of both, to give effect to the growth, morphology, and levels of N-acetylglucosamine *Fusarium oxysporum*. Most inhibited fungal growth is a given enzyme chitinase from *Pseudomonas pseudomallei*, which is equal to 12 mm on the 6th day of observation. Morphological abnormalities of the mycelium *Fusarium oxysporum* not seen any difference among the three treatment provision enzyme chitinase, which may shorten, bend, lysis, and destroyed. Highest levels of N-acetylglucosamine which treatment was given rough chitinase enzyme from the bacterium *Klebsiella ozaenae*.