

*TESTING THE EFFECTIVENESS OF THE BIOLOGICAL AGENT FUNGUS
Lecanicillium lecanii AS A BIOCONTROL AGENT FOR THE PATHOGEN
Pyricularia oryzae IN RICE PLANTS (Oryza sativa L.)
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ABSTRACT

One of the plant diseases that is a major factor in decreasing rice crop productivity is blast disease, which is caused by a fungal pathogen called Pyricularia oryzae. One alternative to suppress the P. oryzae fungal pathogen is using biological control with the fungus Lecanicillium lecanii. This study aims to determine the effectiveness of L. lecanii in suppressing the growth of P. oryzae both in vitro and in vivo. The research was conducted from June 2025 to January 2026 in the Plant Protection Laboratory and Plant Laboratory at Politeknik Negeri Jember. This study used a Completely Randomized Design (CRD) non-factorial with the factor being the concentration of L. lecanii, consisting of 4 treatment levels and 5 replications. For the in vitro treatment, the concentrations used were without L. lecanii, 10^6 , 10^7 , and 10^8 conidia/ml, while for the in vivo treatment, the best result from the inhibition test was used, which was 10^7 conidia/ml. For the in vivo testing, there were 4 treatment levels: without L. lecanii, 15 ml/l, 20 ml/l, and 25 ml/l. Based on the study results, L. lecanii in the inhibition test was able to suppress pathogen growth by 26.31%. Meanwhile, observations of disease occurrence, attack intensity, plant height, number of tillers, and grain weight per sample did not show any significant differences. In vivo testing did not show significant differences in any of the treatments.

Keywords: biological agent, Lecanicillium lecanii, Pyricularia oryzae