

**THE EFFECT OF APPLICATION TIME AND TYPE OF ENDOPHYTE
BACTERIA ON THE GROWTH AND RESISTANCE OF JAVA GINSENG
(*Talinum paniculatum* Gaertn.) INFECTED WITH *Pythium* sp.**

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ABSTRACT

The challenge in cultivating Javanese ginseng (*Talinum paniculatum* Gaertn.) is the potential attack by the pathogen *Pythium* sp. cause of root rot disease. Utilizing endophytes as biocontrol agents can be an alternative treatment for this disease. In its application, it is necessary to know the correct application time and type of endophyte to get optimal results. The research method was carried out descriptively by testing the antagonists of 28 types of endophyte isolates with *Pythium* sp. (in vitro). The experimental method used 2 selected types of endophytic bacteria with a factorial Completely Randomized Design, the first factor being application time 2, 4, 6, and 8 week after planting. The second factor is the type of endophytic bacteria coded GJ-3, GJ-12, and a combination with 3 repetitions. The results of the research show that generally giving endophytes to plants plays a better role in growth and suppressing pathogens than without treatment. There is an interaction between application time and the type of endophytic bacteria on plant growth index, fresh root weight, and net assimilation rate. Independently, endophytes influence plant growth index and net assimilation rate, and the timing of endophyte application influences fresh root weight and net assimilation rate. The highest incidence of disease in the check plot was 88.89% and the lowest incidence was when the 2 MST endophytic combination was applied at 11.11%. The highest disease severity in the check plot averaged 61.11% in the heavy category, and the lowest in the 2 MST endophyte combination treatment was 5.55% in the low category.

Keywords: Endophytic bacteria, Java ginseng, disease, *Pythium* sp.