

## ABSTRACT

Faradiska, W. 2012. **Isolation and Characterization of Endophytic Bacteria from The Roots of The Potato Plant (*Solanum tuberosum* L.) Using RAPD Primer Markers.** Supervisor: Dr. Ulfah Utami, M.Sc., Advisor Integration of Science and Religion: Umaiatus syarifah, MA

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Potato plants are plants that get priority in development in Indonesia. Each plant has a number of endophytic bacteria that grows in the plant organs, such as the root. Endophytic bacteria have a potential to increase the availability of some plant nutrients and also increases growth hormone. Endophytic bacteria are part of the biological richness that must be explored and potential usefulness. Efforts to explore the potential contained in the biological wealth of activities including the characterization. Characterization can be morphological characterization or molecular level characterization of DNA markers.

PCR with RAPD markers (random amplified polymorphic DNA) have been widely used in studies of genetic variation in bacteria. This study aims to determine the results of endophytic bacteria isolated from the roots of the potato plant (*Solanum tuberosum* L.) and determine the DNA profile of endophytic bacteria isolates using RAPD markers Primer. The study was conducted in January to July 2012, in genetics and microbiology laboratory of the State Islamic University Maulana Malik Ibrahim Malang. Engineering analysis using PCR-RAPD analysis.

The results of this study showed that of the three types of bacteria, two Gram-negative bacteria including in the shape of coccus and tetracoccus, while 1 gram positive bacteria including the shape of streptobasil. The results of molecular characterization by PCR with RAPD marker. DNA profiles of endophytic bacteria isolates by RAPD primer markers which is primer 27F/1492R and primer 16S rDNA reverse/forward showed polymorphism is high (>50% polymorphic bands). From these two primer types of tape that no monomorphic, meaning both primer could indicate that these three isolates are molecularly distinct. The high polymorphic bands in this study also showed a high genetic diversity of endophytic bacteria were observed. Genetic polymorphisms are defined as the presence of individuals with different genetic traits but lived together in the population.