



Molecular Identification of Bacterial Isolates on Edamame Leaf Blight from Jember by DNA Sequence Encoding 16S rRNA and CFL Gene

Rachmi Masnilah^{*1,2}, Abd. Latief Abadi³, Tutung Hadi Astono³
and Luqman Qurota Aini³

¹Department of Agriculture Science, Brawijaya University, Malang, East Java, Indonesia.

²Department of Plant Pests and Diseases, University of Jember, Jember, East Java, Indonesia.

³Department of Plant Pests and Diseases, Brawijaya University, Malang, East Java, Indonesia.

Abstract: Leaf blight disease on edamame is caused by a bacterium that attacks soybeans. Characterization of bacteria that causes the edamame leaf blight disease is very substantial to determine the best prevention strategy of the disease in order to produce a high quality crop. The characterization was performed by phenotypic and genotypic identification. In addition, PCR technique was performed by using specific primer on CFL gene sequences that known to be found only in *glycinea* patovar (pv.) from *P. syringae*. The purpose of this study is identifying the molecules of the bacteria that causes blight disease on edamame leaves from Jember. Molecular identification was performed by the isolates diversity and identifies the selected isolates up to the species level. Isolates diversity was observed by using fingerprint molecular based on DNA coding repetitive area BOX A1R. Molecular amplification of DNA coding 16S rRNA was performed to identify the selected isolates, followed by its DNA sequencing and determination with PCR technique by using primer of gene-specific CFL 650. Isolates 25, 26 and 28 have the same genetic profile that indicates the close familial relationship of the isolates, different genetic profiles only found on isolate 32. Sequence analysis of DNA encoding 16S rRNA of the isolate 28 showed that the bacteria have a close relation to the *P. syringae* pv. *glycinea* with similarity percentage of 93%. Isolate 28 was *P. syringae* pv. *glycinea* due to the emergence of the tape sized DNA fragments of 650bp which is a representation of the CFL gene existence.

Keywords: 16S rRNA, BOX A1R, CFL Gene, Edamame Bacterial Leaf Blight.