

Endophytic bacteria isolated from higher plant in Aceh, Indonesia, and their chemical compounds activity against *Fusarium oxysporum* f. sp. *lycopersici*

Publons ID	(not set)
Wos ID	WOS:000619779700001
Doi	10.1186/s41938-021-00379-5
Title	Endophytic bacteria isolated from higher plant in Aceh, Indonesia, and their chemical compounds activity against <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i>
First Author	
Last Author	
Authors	Maulidia, V; Sriwati, R; Soesanto, L; Syamsuddin; Hamaguchi, T; Hasegawa, K;
Publish Date	FEB 12 2021
Journal Name	EGYPTIAN JOURNAL OF BIOLOGICAL PEST CONTROL
Citation	3
Abstract	<p>Background Endophytic bacteria are an association between bacteria and plant tissue that could play a role as a biocontrol agent. Main body Endophytic bacteria were isolated from several high root plants in Aceh, Indonesia. This study aimed to detect the chemical compounds of the potential endophytic bacteria as a biocontrol agent against <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i> (FOL). There were 198 endophytic bacterial isolates detected in roots of 9 higher plant. The hypersensitive reaction showed that 193 isolated endophytic bacteria were non-pathogenic. There were 13 isolated endophytic bacteria that worked to inhibit FOL between 50.0 and 89.2%; such endophytic bacteria were isolated from <i>Solanum lycopersicum</i> L., <i>Psidium guajava</i> L., <i>Dendrocalamus asper</i> (Schult with f.) Backer ex Heyne, <i>Pinus merkusii</i> L., <i>Theobroma cacao</i> L., and <i>Albizia chinensis</i> L. Molecular identification using 16S rRNA gene sequence confirmed that the endophytic bacteria were derived from species <i>Pseudomonas aeruginosa</i>, <i>P. mosselii</i>, <i>Arthrobacter</i> sp., <i>Bacillus cereus</i>, <i>B. thuringiensis</i>, and <i>Serratia marcescens</i>. <i>P. aeruginosa</i> that showed the highest inhibition was analyzed using GC-MS analysis. The analysis identified that antibiotics as Pyrrolo [1,2-a]pyrazine-1,4-dione, hexahydro-3-(2-methylpropyl)- was produced by <i>P. aeruginosa</i> succeeded in suppressing FOL. Conclusion The study recommends the species <i>P. aeruginosa</i>, as effective endophytic bacteria for the control of FOL pathogen.</p>
Publish Type	Journal
Publish Year	2021
Page Begin	(not set)
Page End	(not set)
Issn	1110-1768
Eissn	2536-9342
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000619779700001
Author	Ir LOEKAS SOESANTO, M.S, Ph. D