

Phylogenetic Characterization of Atrazine-Degrading Bacteria Isolated from Agricultural Soil in Eastern Thailand

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Abstract : In this study sugarcane field soils with a long history of atrazine application in Chachoengsao and Chonburi provinces have been explored for their potential of atrazine biodegradation. For the atrazine degrading bacteria isolation, the soils used in this study named ACS and ACB were inoculated in MS-medium containing atrazine. Six short rod and gram-negative bacterial isolates, which were able to use this herbicide as a sole source of nitrogen, were isolated and named as ACS1, ACB1, ACB3, ACB4, ACB5 and ACB6. From the 16S rDNA nucleotide sequence analysis, the isolated bacteria ACS1 and ACB4 were identified as *Rhizobium* sp. with 89.1-98.7% nucleotide identity, ACB1 and ACB5 were identified as *Stenotrophomonas* sp. with 91.0-92.8% nucleotide identity, whereas ACB3 and ACB6 were *Klebsiella* sp. with 97.4-97.8% nucleotide identity.

Keywords : atrazine-degrading bacteria, bioremediation, Thai isolates, bacteria

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