INTISARI

PERTUMBUHAN DAN AKTIVITAS ENZIM BAKTERI PENGHASIL ACC DEAMINASE PADA KONDISI CEKAMAN SALINITAS

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Salinitas tanah dapat menghambat dan bahkan mematikan mikrobia termasuk PGPB (*Plant Growth Promoting Bacteria*) seperti bakteri penghasil *Aminocyclopropane-1-carboxylate (ACC) Deaminase*. Penelitian ini ditujukan untuk mengetahui pertumbuhan dan aktivitas enzim bakteri penghasil ACC deaminase pada kondisi cekaman salinitas. Penelitian dilakukan dengan menumbuhkan bakteri penghasil ACC deaminase pada medium yang ditambah NaCl sebagai agensia salinitas. Pertumbuhan bakteri diamati berdasarkan pertumbuhan sel pada medium padat dan medium cair. Pengujian aktivitas enzim ACC deaminase dilakukan secara spektrofotometri berdasarkan produk yang dihasilkan yakni α-ketobutirat. Hasil penelitian memperoleh 4 strain bakteri yang mampu tumbuh baik pada cekaman NaCl 3%, yaitu *Bacillus aryabhattai* TW7, *Raoultella terrigena* PCM8, *Pantoea dispersa* CK4 dan *Pseudomonas putida* PIR3C dengan aktivitas enzim ACC-Deaminase berturut-turut 466.99; 263,27; 1208,08; dan 254,38 nmol α-ketobutirat/mg protein/jam.

Kata kunci: Salinitas, NaCl, Bakteri, ACC Deaminase

ABSTRACT

GROWTH AND ENZYME ACTIVITY OF ACC DEAMINASE-PRODUCING BACTERIA IN SALINITY STRESS CONDITION

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Soil salinity can inhibit and even kill microbes including Plant Growth Promoting Bacteria (PGPB) such as Aminocyclopropane-1-carboxylate (ACC) Deaminase producing bacteria. This research is aimed to know the growth and enzyme activity of producing ACC deaminase bacteria on salinity stress condition. The study was conducted by growing the bacteria producing ACC deaminase on a medium supplemented by NaCl as salinity agent. Bacterial growth was observed based on cell growth in solid and liquid media. Analysis of ACC deaminase activity was done by spectrophotometry based on the product of α-ketobutyrate. The results of this study obtained 4 bacteria strains that were able to grow well in media supplemented by NaCl 3%, i.e. *Bacillus aryabhattai* TW7, *Raoultella terrigena* PCM8, *Pantoea dispersa* CK4 and *Pseudomonas putida* PIR3C which has ACC-Deaminase activity of 466.99; 263.27; 1208.08; and 254.38 nmol α-ketobutyrate/mg protein/hour, respectively.

Key words: Salinity, NaCl, Bacteria, ACC Deaminase