

## **Intisari**

Rhizobakteri osmotoleran isolat AI-19 ditumbuhkan pada kondisi lingkungan dengan variasi konsentrasi garam (NaCl) dan glukosa untuk mengetahui pengaruh variasi konsentrasi garam dan glukosa terhadap pertumbuhan dan fisiologis rhizobakteri osmotoleran. Perubahan fisiologis dianalisa berdasarkan laju pertumbuhan dan perubahan profil metabolit. Analisis kepadatan sel dilakukan dengan metode spektrofotometri, sedangkan profil metabolit dianalisis menggunakan GC-MS (Gas Chromatography Mass Spectrophotometry). Semakin tinggi konsentrasi garam dan glukosa, densitas sel semakin menurun. Berdasarkan hasil GC-MS pada berbagai konsentrasi gula dan glukosa, perbedaan konsentrasi garam dan glukosa menyebabkan adanya perbedaan profil metabolit. Pada cekaman ganda, terjadi peningkatan konsentrasi pembentukan hexadecanoic acid, hexadecenoic acid, proline dan glycerin, sedangkan pada cekaman tunggal garam dan glukosa terdeteksi senyawa hexadecanoic acid dan 9-octadecenoic acid, methyl ester.

Kata kunci: rhizobakteri osmotoleran, garam, glukosa, perubahan fisiologis, profil metabolit

## ***Abstract***

Osmotoleran Rhizobacteria isolate Al-19 was grown in environmental conditions under varying salt (NaCl) and glucose concentration to determine the effect of salt and glucose stress on the growth and physiological response of osmotolerant rhizobakteri. The physiological changes were analysed based on growth rate and metabolite profile. Growth rate was analysed using spectrophotometric method, while metabolite profile was analysed using GC-MS (Gas Chromatography Mass Spectrophotometry). The higher the concentration of the salt and glucose, the lower the cell density. Based on GC-MS results under varying concentration of sugar and glucose, it was observed that different concentration of salt and glucose resulted in different metabolite profiles. Under double stress, concentration of hexadecanoic acid, hexadecenoic acid, proline and glycerin was found increased, while under single-salt and glucose stress, hexadecanoic acid and 9-octadecenoic acid, methyl ester were detected.

**Keywords;** rhizobacter osmotolerant, salt, glucose, physiological change, metabolites profile