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EFFECTS OF *Arthrobacter arilaitensis* AND *Pseudomonas putida* ON SALT STRESS TOLERANCE IN WHEAT

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Abstract

Soil salinity is a problem for agricultural production. Plant growth-promoting rhizobacteria (PGPR) can increase plant growth under salinity conditions by reducing the "stress ethylene" level by ACC deaminase activity. This study aimed to evaluate the effect of *Arthrobacter arilaitensis* and *Pseudomonas putida* on increasing the growth of wheat under different salt stress conditions. Pot experiments were conducted to determine the effectiveness of *A. arilaitensis*, and *P. putida* strains for plant growth of wheat under different salt conditions: 0.95 (control), 3.98, 7.80, and 11.05 dS m^{-1} with four replications. Inoculation of *A. arilaitensis* and *P. putida* increased membrane stability index (MSI) and carotenoid content of wheat, while malondialdehyde and proline content decreased under different salt stress conditions. *A. arilaitensis* increased MSI and carotenoid content by 10%, while *P. putida* increased by 16% and 12%, respectively. Similarly, *A. arilaitensis* and *P. putida* applications reduced leaf MDA content by 14% and 16%, respectively. Besides, wheat proline content decreased by 38% with inoculation of *A. arilaitensis* and 33% with *P. putida.* The results obtained show that *A. arilaitensis* and *P. putida* isolates reduce the harmful effects of salinity stress and can be used as biological inoculum to reduce the harmful effects caused by salinity.

*Key words:*coastal sediments, contamination factor, enrichment factor, sediment quality guidelines, trace metals

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