

STUDIES ON STRESS-TOLERANT *PSEUDOMONAS RESINOVORANS* STRAINS WITH BIOCONTROL POTENTIAL AGAINST *AGROBACTERIUM* SPECIES

Anuar R. Zhumakayev^{1,2}, Csaba Vágvölgyi¹, Lóránt Hatvani¹

¹Department of Microbiology, Faculty of Science and Informatics, University of Szeged, 6726 Szeged, Közép fasor 52, Hungary

²Doctoral School in Biology, Faculty of Science and Informatics, University of Szeged, 6726 Szeged, Közép fasor 52, Hungary
anuar_zhumakaev@mail.ru

Crop losses due to plant pathogens raise serious concerns about sustainable agricultural production. *Agrobacterium tumefaciens* and *A. vitis* species are the causal agents of the crown gall disease of different plant species with agricultural importance (grape, cherry, walnut, etc.). The extensive use of synthetic agrochemicals for disease control purposes often leads to soil and water contamination, with adverse side effects on ecosystems. Certain microorganisms with biocontrol potential towards plant pathogens represent an environment-friendly alternative to chemical pesticides for pest management. However, the efficacy of biocontrol microbes might be significantly lowered by different abiotic factors, such as heavy metals, pesticides, salinity or drought stress.

In our studies, 7 *Pseudomonas resinovorans* strains isolated from glyphosate-treated soil were found to have substantial inhibitory effect on the growth of 6 *A. tumefaciens* and 6 *A. vitis* strains in agar plate assays. Testing *P. resinovorans* strains for abiotic stress tolerance *in vitro* revealed that the strains were able to survive in the presence of Al, Fe, Mn, Ni, and Pb up to 0.5-1.0 mM, and 17 different pesticides up to 25 µg/ml concentration. Moreover, the isolates were found to also resist salinity (up to 6.3 g/l NaCl) and drought (up to 125 g/l polyethylene glycol 6000) stress.

Our findings suggest that the examined *P. resinovorans* strains might be considered as potential biocontrol agents of *Agrobacterium* species under various abiotic stress conditions.

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