

TITLE:RESISTANCE OF PLANT GROWTH PROMOTING BACTERIA ISOLATED FROM THE AQUATIC PLANT *Salvinia auriculata* TO ZINC

AUTHORS:OROZIMBO,K.B.S.¹ ; SILVA, J.T.S.¹; INTORNE, A.C.^{1,2}

INSTITUTION:¹Universidade Estadual do Norte Fluminense Darcy Ribeiro (UENF), Campos dos Goytacazes, RJ (Av. Alberto Lamago, 2000 - Parque Califórnia, , 28013-602, Campos dos Goytacazes ,RJ, BRASIL). ² Instituto Federal de Educação, Ciência e Tecnologia do Rio de Janeiro- Campus Volta Redonda (IFRJ), Rio de Janeiro, RJ (R. Antônio Barreiros, 212 , Nossa Sra. das Graças, 27213-100, Volta Redonda, RJ, BRASIL)

Metal levels in the aquatic environment have increased since the Industrial Revolution, mainly due to the inadequate discarding of wastes, which pollutes the waters and harms the life of organisms in these ecosystems. Some metals like zinc (Zn) act as micronutrients, because they are essential for living things, but when they are found in high concentrations, they become toxic. Bioremediation is an eco-friendly, low-cost technique that utilizes living organisms, such as bacteria for cleaning environments. Some microorganisms are able to develop in these contaminated sites, since they have efficient mechanisms of protection against the metal toxicity. Thus, the objective of the present work was to evaluate the resistance to Zn in plant growth promoting bacteria isolated from the aquatic plant *Salvinia auriculata*. For this purpose, minimum inhibitory concentration (MIC) assays were carried out in solid medium with 18 bacterial isolates, using concentrations of 1, 15, 30 and 45 mM of ZnSO₄. Initially, the bacteria were cultured under agitation at 175 rpm until OD_{600nm} equal to 1.0. Then, 3 aliquots of 10 µL of each culture were inoculated individually into petri dishes, containing concentrations of increasing metals. As plates were maintained at 30 °C for 5 days. Out of the 18 isolates tested, there is a difference of 30 mM and up to 45 mM of ZnSO₄, is much higher than the reports in the literature. In addition, yield values have been statistically higher than at the national level. The memories with higher resistance are *Pseudomonas aeruginosa*. Thus, these isolates demonstrated the potential to assist in bioremediation processes in environments with high levels of Zn, and may be used in the future for the development of a bioinoculant concerning the removal of metals.

Keywords: environmental pollution, metal; microorganism, bioremediation.

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