World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:11, No:04, 2017

Effect of Vesicular Arbuscular mycorrhiza on Phytoremedial Potential and Physiological Changes in Solanum melongena Plants Grown under Heavy Metal Stress

Authors : Ritu Chaturvedi, Mayank Varun, M. S. Paul

Abstract : Heavy metal contamination of soil is a growing area of concern since the soil is the matrix that supports flora and impacts humans directly. Phytoremediation of contaminated sites is gaining popularity due to its cost effectiveness and solar driven nature. Some hyperaccumulators have been identified for their potential. Metal-accumulating plants have various mechanisms to cope up with stress and one of them is increasing antioxidative capacity. The aim of this research is to assess the effect of Vesicular arbuscular mycorrhiza (VAM) application on the phytoremedial potential of Solanum melongena (Eggplant) and level of photosynthetic pigments along with antioxidative enzymes. Results showed that VAM application increased shoot length, root proliferation pattern of plants. The level of photosynthetic pigments, proline, SOD, CAT, APX altered significantly in response to heavy metal treatment. In conclusion, VAM increased the uptake of heavy metals which lead to the activation of the defense system in plants for scavenging free radicals.

Keywords : heavy metal, phytoextraction, phytostabilization, reactive oxygen species
Conference Title : ICPPP 2017 : International Conference on Phytoremediation Processes and Phytotechnologies
Conference Location : Paris, France
Conference Dates : April 18-19, 2017