

REFERENCE

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Phytoremediation as a biotechnological tool for environmental requalification

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Phytoremediation is an emerging biotechnological process based on the use of plants and associated microbiota for the treatment of wastewater and requalification of polluted/degraded sites. Remediation strategies can be promoted by the use of phyto-microbial complexes – plants, bacteria and fungi-tolerant to various stress conditions. The application of phytoremediation, e.g. constructed wetlands, in the treatment of wastewaters seems promising, and an example regarding the treatment of an industrial effluent will be presented. Concerning soil phytoremediation, the establishment of vegetation is a vital step in the restoration process, and the colonisation of plants by mycorrhizal fungi (MF) usually results in greater growth, nutrient and water absorption by the host plant, higher resistance to pathogens, and greater tolerance to environmental stresses. The application of MF in biotechnological processes is broad. The contribution of MF in promoting plant establishment and growth under highly alkaline conditions, and some insights into the role of MF on the removal of metals from soils/sediments will be presented. The potential of the use of MF as a substitute for non-sustainable techniques in forestry will be exemplified. The strategies presented here aim at contributing to the establishment of phytoremediation as a sustainable environmental practice.