

The importance of Soil Genetic Resource Banks in waste management

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The high wastewater volumes produced during the post-harvest industry in agriculture present serious pesticide or heavy metal point-source pollution for groundwater resources. The collection and storage of soil samples from heavily polluted sites could be a valuable source to isolate and characterize biological agents able to depurate heavily polluted wastes. Several studies demonstrated that bacterial isolates are responsible for high degradation rates of pesticides.

In this context, the National Infrastructure “MAGNET” was initiated in 2019 by the Agricultural Research Institute in Cyprus by establishing a new centre for Environmental Microbiology and Biotechnology. MAGNET’s vision is to provide high impact environmental and economic benefits to Cyprus’s bio-economy and biosciences by promoting advanced innovative microbial solutions for agriculture to optimize crop yields and quality in a climate-changing environment and provide a more sustainable industry impact profile, ultimately resulting in new opportunities to protect the environment. The unique state-of-the-art National Infrastructure Center can collect, analyze and understand the structure, function, activities and dynamics of soil microbial communities generating solutions to societal challenges of the country and the region. This study presents how the National Soil Gene Bank of the Republic of Cyprus could aid waste management and depuration of heavily polluted sites.