UNIVERSITÀ DI PAVIA

Corso di Dottorato in Scienze della Terra e dell'Ambiente

1. Project title

Improving the sewage sludge quality through mycoremediation

2. Proposer

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3. Research Unit

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4. Key words

(Max. 5 – at least 2)

Fungi; Heavy metals; Mycoremediation; Sewage sludge; Sewage water treatment

5. Abstract

(Max.1.500 characters with spaces)

Sewage sludges are the final waste product of the process regarding water purification treatment. In order to reutilize and dispose them, they can also be used as fertilizers in agriculture. However this type of sludge can contain few pollutants, among these heavy metals can be present too.
Fungi can be good mycoremediation agents, that is they can remove dangerous substances from different substrata.
The proposed PhD project aims to study how to remove heavy metals from sewage sludges by mycoremediation.
Two sewage water treatment plants will be taken as a model to evaluate the possible heavy metal content in the sludge and to select performing fungi capable of tolerate and accumulate them.
Laboratory solutions will be adapted in order to be applicable on a larger scale in the treatment plants, in a more economic and more sustainable way.
A multidisciplinary approach will be requested since different expertise and skills will be needed to achieve the objectives.
The topic of the present proposal is considered innovative and relevant both for scientific community and for circular economy, so the results could be published in peer reviewed papers and discussed in International Congress.