

Can phytoremediation be a solution for the food vs fuel problem?

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Abstract:

There are currently more than 3 million contaminated sites all over EU, according to the EEA (report 25186 EN). Contamination by heavy metals (HM) is particularly concerning, as they are not biodegradable and can accumulate in the food chains. With remediation being therefore an urgency, phytoremediation, when comparing to the other soil clean up methods, has proven to be an appealing low cost alternative. The technique encompasses the establishment of a vegetation cover that will ultimately stabilize the recipient sites.

Nevertheless the end destination of cultivated biomass is a common barrier for its application, it can indeed represent a prospect for generating products with added value. In fact, such kind of strategy can help responding to several environmental and economic problems at once. First by using degraded soils for valuable applications, gradually decontaminating them while simultaneously producing biomass with added value. Second by responding to the growing demand of biomass for energy generation – representing an obvious contribution to the solution of the food vs. fuel dilemma.

Although the possibility of using this novel remediation technique with the objective of biomass production for energetic purposes is of significant importance, there are very few developed studies in the area, and only some techniques have been addressed. Therefore this presentation will assess possible strategies for the utilization of phytoremediation derived biomass for the generation of energetic products.

What will audience learn from your presentation?

This presentation will assist the audience to realise that the use of biomass cultivated in polluted and discarded soils, not implicating agricultural soils for energy crop production, can intensify the sustainability of using biomass for energy generation, whilst it can allow the increase of accessible agricultural soil through the resulting ongoing clean-up of those contaminated soils.

Biography of presenting author:

Ana Marques has completed her PhD in Biotechnology and her postdoctoral studies from the Portuguese Catholic University. She has been involved in research activities since 2000, when she was a researcher at Technical University of Denmark working on the production of bioparticles for biofilm applications. Since 2002 she has been developing work at CBQF/ESB-UCP concerning the remediation of disturbed soils using plant-based technologies, with the application of biological tools. She has published 2 book chapters and 25 papers in international peer reviewed journals, participated in numerous conferences and has been serving as a reviewer in several reputed scientific journals, having more than 1750 citations and a h-index of 21

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