

Phyto tec: using macro-phytes for sustainable water purification

The Green Liver System

7th WRHC
Open Space Workshop
29 June 2016
14:00 – 16:00
UBA, Dessau

Technische Universität Berlin
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moderator / organiser

The protection and reasonable use of freshwater is one of the main goals for our future, as water is most important for all organisms on earth including humans. Due to pollution, not only with xenobiotics, but also with nutrients, the status of our water bodies has changed drastically. Excess nutrient load induces eutrophication processes and, as a result, massive cyanobacterial blooms during the summer times. As cyanobacteria are known to produce several toxic secondary metabolites, the so-called cyanotoxins, exhibiting hepato-, neuro- and cell-toxicity, a potential risk is given, when using this water. There is an urgent need to have a water purification system, which is able to cope with these natural toxins as well as with anthropogenic substances. Using aquatic plants as a Green Liver, the Green Liver System was developed, able to remove these natural pollutants.

How can other fields of science contribute: ecohydrology, water management, risk assessment and modelling, fluid mechanics and acoustics, sociology and even art contribute to a sustainable development of Green Liver Systems in different context such as rivers, lakes, urban water bodies and even marine systems.

How can we involve potential stakeholder such as aquafarmers and farmers, biogas/biodiesel producers, micro-miners as well as urban planners?

The following questions will be discussed:

- 1) What are the knowledge gaps to be filled?
- 2) What is the difference between well know constructed wetlands and Green Liver Systems?
- 3) Do these differences justify to go on with this development of Green Liver Systems?
- 4) How can we address possible risks, such as e.g. outbreak of mosquitos, parasites from the systems?
- 5) How do we deal with the neophyte problematic? Should we use them or not?
- 6) At what stage should stakeholders be involved in the development?
- 7) Which water quality can be expected and for which countries might the Green Liver System be of interest?

The workshop is designed to be an open discussion forum for all interested colleagues with a 40 min introductory presentation on Green Liver Systems for different water pollutants. Followed by a 40 min open discussion and mind mapping wrapped up by the moderator.