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ECOLOGICAL RESTORATION OF URBAN LAKES THROUGH SYNTHETIC SEED-BASED PHYTOREMEDIATION: INSIGHTS FROM ISLAMIC ETHICS.

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Abstract

Urban lakes are crucial components of urban ecosystems as they serve various functions such as flood control, groundwater replenishment, biodiversity preservation, and habitat protection. However, urban lakes are also prone to pollution, particularly heavy metal contamination, which affects the water quality of downstream water channels and poses a significant threat to the environment and human health. In Islam, maintaining a clean environment, including air, land, and water, is mandatory for the benefit of all living things on earth. To address this issue, aquatic plants, particularly small-sized species like *Glossostigma elatinooides* (small mud-mat) and *Bacopa caroliniana* (blue water hyssop), are promising candidates for phytoremediation in slow-moving or stagnant water bodies such as urban lakes. Synthetic seed technology, an advanced technique that uses encapsulated meristematic tissues like shoot buds or somatic embryos, provides long-term storage capacity, easy handling, economical mass propagation, and an environmentally friendly approach to delivering phytoremediating plants. This study reviews the mechanisms of heavy metal uptake, translocation, and detoxification in plants, the potential of small-sized aquatic plant species for heavy metal remediation in urban lakes, and proposes the use of synthetic seed technology to remediate urban lake contamination. The principles and ethics of environmental sustainability, as explained by the Quran and Sunnah, can guide this study and all stakeholders in their efforts to preserve the environment and address the critical issue of urban lake pollution.

SESSION DETAILS

Room 6: 10d Religion and sustainable development

📍 Room 7
14:00-16:00
Thursday, 13 July, 2023

IN THIS SESSION