



Constructed Wetland Technique

Constructed wetlands are improvised human-made systems designed to mimic natural wetlands that help in purifying wastewater. They are used widely as a cost-effective and energy-efficient solution to treat greywater from tertiary treatment sources. They provide a platform for research towards recycling earth's natural resources.



Prototype development



Wetland system



Treated water



Height and leaf number show encouraging growth (70-100%), followed by root-length (57-65%) and finally, plant numbers (33%).



Average removal efficiencies:
 75.99% for biochemical oxygen demand (BOD)
 76.16% for chemical oxygen demand (COD)
 57.34% for total dissolved solids, 62.08% for nitrates,
 58.03% for phosphate, 57.83% for potassium.
 It helps in treatment of *E.coli* bacteria.



Typha sp. contained wetland cell showed greater efficiency in removal of parameters such as COD and BOD than *Phragmites sp.*



57% cost saving and energy saving over conventional design.



A good removal for all components by 8 days of Hydraulic retention time, around 80% for inorganic components and close to 90% for organic components



It helps to achieve resource recovery, Net Zero and Circular Economy in Wastewater treatment



Dissemination of Research



For Policy makers



For Policy makers



For Students