

Application of Constructed Wetland for Treatment of Yeast Factory

ABSTRACT

In developing countries, the wise use of natural and artificial wetlands for wastewater purification is particularly valuable and exploitable for the protection of water quality in rivers and lakes. Constructed wetlands are potentially good, low - cost, appropriate technological treatment systems for domestic and industrial wastewater. There are a large number of wetland treating mining, textile, food processing and even petrochemical wastewaters around the world. Wetlands support several physical, chemical and biological processes that regulate removal of pollutants, which has encouraged the intentional use of wetlands for pollutant abatement.

In this study, a lab - scale subsurface flow wetland has been constructed. Gravel sand with particle size of 3-7 mm and 35% porosity was used in the reactor. After growth of *Phragmites* genus, the wetland received diluted effluent from yeast factory. The reactor has been operated for ten months. However, because of low growth of plants as well as low ambient temperature, regular sampling were taken only for six months. The removal efficiencies of BOD, SS and total nitrogen for organic loading of 22g BOD/m³.d were 90%, 85% and 70% respectively.