

DBT/ tannery waste

Improving treatment of tannery waste water

By Sunderarajan Padmanabhan

New Delhi, April 07: India is a major leather producer of the world and the leather industry is an important contributor to our GDP. However, large amounts of untreated or improperly treated tannery waste water makes its way into our rivers, severely degrading the water quality.

Treatment of tannery waste water is a difficult problem due to the presence of high levels of toxic chromium in addition to the usual organic, inorganic and suspended matter. Activated sludge treatment (AST) is commonly used for degradation of the organic material in the wastewater while the chromium has to be removed using chemical means producing toxic sludge.

A new study at Central Glass and Ceramics Research Institute, Kolkata supported by Department of Biotechnology has resulted in the design of an ultrafiltration module utilizing an indigenously prepared bentonite clay coated ceramic ultrafiltration membrane (avg. pore size 4.85 nm).

Addition of this high throughput ultrafiltration module to conventional activated sludge treatment as a side stream resulted in >90% removal of all pollutants. Tertiary treatment using microalgae resulted in removal of remaining pollutants making the water safe for discharge.

The indigenous nature of the ultrafiltration membrane and the integrated treatment process specifically designed for tannery waste are initial steps towards eco-friendly and cost-effective technologies for tackling this serious problem threatening our invaluable river systems.

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