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Authors: Mohanapriya Jayapal, Hema Jagadeesan, Manojkumar Shanmugam, Perinba Danisha J, Shobana Murugesan



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Sequential anaerobic-aerobic treatment using plant microbe integrated system for degradation of azo dyes and their aromatic amines by-products

MohanapriyaJayapal, HemaJagadeesan*, ManojkumarShanmugam, PerinbaDanisha J andShobanaMurugesan

PSG College of Technology, Coimbatore, TamilNadu, India.

Affiliations:

Hema Jagadeesan,

Associate Professor,

PSG College of Technology,

Coimbatore – 641 004.

E – mail: jhema@bio.psgtech.ac.in; hemajagadeesan@gmail.com

* - Corresponding author

Highlights

- A plant-microbe based treatment for azo dye methyl red was developed.
- The treatment was operated in a sequential anaerobic-aerobic mode.
- The process resulted in generation of harmless by-products
- The vetiver-microbe treated water was less teratogenic and phytotoxic

ABSTRACT

The presence of unused dyes and dye degradation intermediates in the textile industry wastewaters is the major challenge in its treatment. A wide range of treatments including various physicochemical processes are used for this wastewater. An incomplete dye degradation result in hazardous colorless aromatic amineintermediates that are teratogenic in nature. A synergistic plant-microbe system operated in a sequential anaerobic-aerobic mode was evaluated for thecomplete degradation of a model azo dye methyl red under laboratory conditions. The

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