

DEVELOPMENT OF A LABORATORY SCALE SAND FILTER WITH MICROCYSTIN-LR DEGRADING BACILLUS CEREUS

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Abstract- A bacterium (KJ 954304 *B. cereus* 12GK) previously demonstrated to degrade the Microcystin- LR, was investigated for bioremediation applications in laboratory scale sand filter. Citric acid treated raw cotton was used as the biofilm of the sand filter. Both control and experimental setups were built up for the study. The experimental sand filter removed 23% of MC-LR from the influent water within three hours of commissioning. The removal rate gradually increased through out 24 hours and showed 90% of removal within four days. The control filter also showed 1% of removal within three hours and 12% after four days. Thus, 12% of MC-LR undergo physical removal via adsorption to sand and rock particles while the remaining 78% of MC-LR was removed entirely through bioremediation.

Key words- Microcystin-LR (MC-LR), *Bacillus cereus*, Sand filter, Biofilm Citric acid treated raw cotton.
