

BIOREMEDIATION AND DEVELOPMENT OF VALUE BASED PRODUCTS USING COCONUT PITH

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The waste water prepared was allowed to flow through the coconut based filter and turbidity, B.O.D, C.O.D, nitrate and phosphate in the effluent were measured continuously. The influent characteristics remained the same throughout the experiment. The value of the parameters measured during the test was plotted with the time (in days) to understand their time-dependant removal rates in the media. Introduction of bacterial pure culture has initiated the removal of organics at an early stage of operation itself. And, both the organic and nutrient removal rates got stabilized after fifty days of operation. It is obvious from the results that the coconut based biofilter is good for the removal of organics. The filter performs nutrient removal ability. Similar effects are observed with phosphate removal abilities of the filter. High removal of turbidity was possible in this reactor.

After 50 days of continues monitoring the reactor was put to rest to understand the ability of this filter to return back to operation by itself. The waste water with same characteristics was introduced in to the reaction after a period of 120 days. The organic removal rates (COD) were measured and results are shown in figure 6. The coconut pith had no ability to return back to operation because the filter could not recover from the shock even after 30 days.

In this study, it has clearly demonstrated the potential use of coconut pith as media for the continuous removal of organics from waste water. The study carried out here based on a laboratory prepared sample of waste water and hence the performance of filter under actual industrial effluents also needs to be evaluated. Such a media when properly developed will certainly have a large impact in the providing solutions to various issues related to the treatment of waste water from small scale industries.