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# Removal of bacteria and pollutants from low susceptible to bio-decomposition septic tank effluent by textile filter

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**ABSTRACT**

The objective of the study was to assess the efficiency of the textile filter according to indicator bacteria removal. An additional goal was to determine the pollutants removal efficiency at relatively high chemical oxygen demand (COD) to 5 d biochemical oxygen demand ($BOD_5$) ratio of treated wastewater. The wastewater was taken from the septic tank effluent. The count of indicator microorganisms (*coliforms, Clostridium perfringens*, *Escherichia coli* and total mesophilic bacteria) was identified. The samples of wastewater were analyzed in terms of COD, $BOD_5$, total phosphorus, total nitrogen and ammonium nitrogen. The removal efficiencies of indicator bacteria were relatively high for *Escherichia coli* (2.1–2.5 log), differentiated for the other indicators: *Clostridium perfringens* (0.59–1.11 log), coliforms (0.58–1.55 log) and total mesophilic bacteria (0.56–0.97 log). In the first series (term I) the removal efficiency of *Escherichia coli* and total mesophilic bacteria was impossible to calculated due to the uncountable number of CFU. The removal efficiencies of pollutants were relatively high too (79.9% for $COD_{Cr}$ and 71.0% for $BOD_5$). Despite the relatively high COD to $BOD_5$ ratio of inflowing wastewater, equal to 4.2, the organic dissolved compounds and nutrients removal efficiency was acceptable and met the requirements of Polish law.

*Keywords:* Indicator bacteria; Pollutants; Textile filter; Treatment; Wastewater

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