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Sommario/riassunto	<p>Phenol and chlorophenols are among the most important class of raw materials in chemical industry. These compounds also list among priority pollutants. The main problem in treating phenol or chlorophenol containing wastewater is the toxicity it exerts to the microbial flora in biological treatment plants. This may lead to partial or complete treatment plant failure, when the microbial flora is not adapted to phenol concentrations in the influent. The purpose of this thesis was to adapt the microbial flora of domestic sewage sludge to phenol and 2-chlorophenol at high concentration under continuous feeding conditions for long time periods and to study the response of suspension and fixed biofilm systems to transient loading and operation.</p>