Microbial treatment of kraft pulp wastewater pretreated with ozone

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Abstract

Kraft pulp wastewater was treated with a combination of ozone and activated sludge. The effects of pH on the degradation of lignin and the production of organic acids were examined experimentally in the ozonolysis of wastewater. The strong alkaline condition enhanced not only the degradation of lignin but also the production of organic acids. The dynamic behaviours of microbial growth and substrate consumption were investigated in the biodegradation of organic acids using activated sludge. Maleic acid and oxalic acid in the ozonized wastewater were degraded completely by the activated sludge. The immobilized activated sludge culture using polyurethane foam was effective in degrading organic acids.