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Abstract.

## “Depuration of Effluents of Textile Laundry Through Enzymatic Systems. Study Case: Tweed laundry Installed in Tepetitla de Lardizabal, Tlax.”

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**Abstract:** The aim of this work was to analyze the color removal of the discharges of a textile laundry, “Laundry and dye Alonso”; this is a small industrial laundry located in Tepetitla of Lardizabal, Tlaxcala, México, which dye the tweed clothes. We took some samples of colored effluents from the most frequent process that they make. Samples were kept in cones Imhoff for a 24 hour period, after that was measured the COD change, conductivity and pH before and after of the sedimentation, just like the sediment solids and percentage % of discoloration being caught by the sedimentation. Supernatant that continue with visible color were submitted to enzymatic oxidation with laccase of the fungi *Trametes versicolor*, immobilized over silica gel and packed in a column. The supernatant was passed several times through the packed column until a visible color reduction was successfully, and the % of discoloration was quantified with the absorbance's changes. Phototoxicity in the water was evaluated before and after the enzymatic oxidation measuring the index of germination of lettuce's seed. We found that the most frequent process in the industrial laundry is dying and this is the most phytotoxic for lettuce seeds. The discoloration after sedimentation was between 21% and 93% and increase to 46% to 100% with enzymatic oxidation. Sedimentation is a simple and cheap pretreatment to diminish the color in textile effluents.

**Keywords:** waste water, tweed, enzymes

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