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Fish processing wastewater treatment by combined biological and chemical processes aiming at water reuse

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ABSTRACT

The objective of this work was to evaluate the potentiality of the reuse of fish processing wastewater by association between biological and chemical treatment. Heterotrophic microalgae systems were used in the biological treatment and coagulation–flocculation–sedimentation in the chemical step. Ammonia, chemical oxygen demand, total solids, suspended solids, turbidity, phosphorous, alkalinity, hardness, silica, sulfate, aluminium, calcium, magnesium, manganese, ferric and pH were determined in each stage of treatment. The results obtained showed the potentiality of the proposed process for reuse of fish processing wastewater. Among the water quality criteria evaluated, the treated wastewater complies with the Brazilian and US standards for water reuse in cooling systems.

Keywords: Microalgae/cyanobacteria; Heterotrophic cultivation; Coagulation–flocculation–sedimentation; Water reuse

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