

SUMMARY

STUDY OF A COMPLEMENTARY WASTEWATER TREATMENT SYSTEM WITH VETIVER GRASS (*Vetiveria zizanioides* L) PROCEEDING FROM A GASEOUS BEVERAGES INDUSTRY, IN VILLA DE CURA, ARAGUA, (VENEZUELA).

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The object of this research was to study, a low scale, complementary wastewater treatment system with vetiver grass; through the characterization and comparison of the quality parameters of affluents and effluents of the system under different management conditions and the establishments of a residence time (Tr) (20, 15, 10 and 5 days) and its related flow velocity (Vf) (30, 40, 60 and 120 Lday⁻¹). The physical model included five tanks interconnected for each management condition. The experience was carried out at the wastewater treatment plant of Pepsicola, Villa de Cura, Aragua.

The evaluation of the data was made using descriptive statistics and the results were compared with related references.

Results showed that the aerobic/anaerobic system and the screen filtering formed by the roots of the vetiver plant, decreases the nutrient and dissolved components levels. Treatment 1 turned out to be the most efficient for the variables BOD and COD, with a removal efficiency of 96,86 % and 98,07 % respectively. The PT was absorbed in 62,05 % Treatment 2. The TS, had the greater removal ratio in treatment 2, with 78,03 % and the SS in Treatment 4 with 87,5 %. There was no evidence of significant differences between vetiver system and without vetiver system, neither between treatments in Chlorides and Electrical Conductivity. The greater efficiency on pH stabilization was in Treatment 1.

From tissue chemical analyses made to vetiver grass, at the end of each treatment, it was concluded that treatments 1 and 2 had a greater absorption of N and P, and for treatments 3 and 4, absorption of K and Na was higher than in the previous two.

Key words: Vetiver grass, (*Vetiveria zizanioides* L), Waste water treatment. Phytoremediation.