

عنوان مقاله:

Analysis of wastewater treatment pond from a gelatin industry, using applied microbiology techniques

محل انتشار:

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خلاصه مقاله:

Gelatin is a colloidal protein, obtained from collagen purification, main compound of the skin, bones and tissues taken from slaughtered animals, well-known for its adhesive, protector and coagulant properties, that has great importance in the food, photographic and pharmaceutical industries. The main feature of the effluent from gelatin industries is the high organic load, sulfides and fatty material in reasonable amounts. The common wastewater treatment plant is: primary (separation of solid residues and physic-chemical decantation), biological (anaerobic reactors and/or stabilization ponds) and tertiary (physical or physical-chemical decantation). In this paper, the evaluated wastewater treatment plant was composed of a physical-chemical treatment (with ferric chloride addition in the primary decanter), passing for one pond (HRT of approximately four days) and followed by a secondary decanter, where it was added aluminum sulfate. Thus, the purpose was the microbiological adjustment of the pond, to increase the efficiency of organic load removal and to minimize the release of odors (especially from sulfur compounds). Using applied microbiology techniques, developed by Mokiti Okada Foundation, some changes in the pond have been carried out: changes in the hydraulic flow (development of phases: aerated, facultative anaerobic and of decantation, respectively), and the installation of partial recirculation of the effluent. A result of the analytical monitoring has shown that the system is cyclical, presenting periodic oscillations in the efficiency rate, having reached a peak of efficiency of approximately 95%. After a year, it was obtained well defined phases in the pond, eliminating the chemical treatments, returning all sludge from the secondary decanter to the pond and, still, minimizing drastically the odor release in it, once sulfur compounds had been consumed by the sulfur bacteria, which retain it inside the cells as elementary form. Thus, there has been reduction in the overall cost of the treatment

کلمات کلیدی:

Wastewater Treatment, Gelatin Industry, Applied Microbiology Techniques

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