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R4th INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“INTEGRATING CLEANER PRODUCTION INTO SUSTAINABILITY STRATEGIES”

Benefits of Optimization Process in Water Treatment Plants - Case Study SANASA Campinas

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Abstract

In many water drinking treatment plants, the chemical applications are made with manual equipment. These dosing controls are very difficult and depend of the experience of the operators.

The water drinking treatment depends on several factors such as pH, turbidity, color and origin of the sample to be treated. These and other factors can determine the best chemical to be used and the best pH of coagulation and flocculation. Generally the treatment in higher values of pH may lead to an increased consumption of coagulants with a consequent increase in the sludge production.

The use of aluminum salts and iron is common in water treatment plants. These products have capacities of treatment in different ranges of pH and the correct choice will influence the kinetics of the reactions involved with consequent production of a higher or lower amount of sludge.

Another important factor is the high cost that a wrong choice will lead to the process, because, in addition to direct consumption of coagulant and increased sludge generation, there may be a higher consumption of other products indirectly.

This work show the results of accurate control and the choice of the best product for water drinking treatment with environmental and financial benefits which provided a reduction of over 40% in the consumption of chemicals including the coagulant and lime, in addition to the almost total reduction of the use of powdered activated carbon.

As a indirect consequence of optimization process, there was a large reduction in the generation of sludge that has a high cost for your treatment and disposal.

Keywords: dewatering, clean production, reduction of waste, water treatment, sludge treatment

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