



INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

"KEY ELEMENTS FOR A SUSTAINABLE WORLD: ENERGY, WATER AND CLIMATE CHANGE"

Reuse Of Water And Process Waste From The Dairy Industry

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Abstract

Dairy industry is an activity of great importance in the global economy, and in Brazil, the seventh largest producer. This sector has lived with the consumption of water for cleaning, which represents more than 80% of the demand for water in agro industries and subsequently treated in waste treatment system. Some suggestions were made to decrease the pollution potential of the effluent of the dairy industry, by proposing the inclusion of a technology using membranes, as part of the process, seeking the recovery and concentration of milk solids in the rinse water from the first equipment, and application of these solids in the manufacture of products derived from milk source and water from the permeate water as the return of industrial process, considering the volume of production of UHT milk and cream of the dairy industry at large to Carazinho / RS - Brazil. To minimize the generation of effluents, one of the main roads is the reuse of water and incorporated into the plant. Treat the surplus of production may not only allow its reuse, but its recovery through the recovery of protein and fat for later incorporation. The fractionation of the dairy effluent through the use of technology for separation membranes in permeates and reject suggests the use of two currents. A promising alternative is the use of this concentrate, rich in protein and fat in dairy products, replacing them is part of the raw material for this concentrate. The use of wastewater as the process is possible through its return to water for cleaning. The reduction of the volume released and minimizing the load of the effluent are the main advantages of applying this type of technology in the dairy industry. Assuming the volume of production of the dairy industry from large to Carazinho / RS - Brazil, the volume of effluent to be removed from the TEE would be approximately 435,200 L / day and shall have the reintegration of about 130,500 L / day of reclaimed wastewater in the industrial process. Moreover, the insertion of soluble solids recovered in a line of dairy sugar products as an ingredient partial leverage the economic benefit through a production of approximately 304,700 L / day of waste milk.

Keywords: dairy industry, reuse, effluent, milk industry wastewater, membranes.
