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MANAGEMENT OF CHEESE WHEY BY FILM FREEZE CONCENTRATION

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Abstract

This study evaluates the behavior of freeze concentration of cheese whey (CW). Parameters studied were: Chemical Oxygen Demand (COD), Total Dissolved Solids (TDS), Suspended Solids (SS), Total Settleable Solids (TSS), pH and electrical conductivity (EC) in the concentrated cheese whey and in the ice. The final concentration of TDS reached was 25 ± 0.16 %wt for the liquid phase, which corresponds to a reduction of 83% of the initial volume. The COD in the ice fractions had lower values than the COD in the original cheese whey. The mean energy consumption was of 0.25 kWh/kg of ice. The results indicate that low levels of fat and low levels of salt in cheese whey improve the efficiency of the process of freeze concentration and reduce the environmental impact.

Key words: freeze concentration, fresh cheese production, organic matter, solids percent, volume reduction

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