



## INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

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

# The Correct Fate of the Wastes of a Cheese Manufacture - an Analysis of Economic Viability

L. Serpa<sup>1</sup>; W. L. Priamo<sup>1</sup>, V. Reginatto

<sup>1</sup> Departamento de Engenharia Química e de Alimentos, Centro Tecnológico, Universidade Federal de Santa Catarina – UFSC, 88034001, Florianópolis/SC, Brasil. [leo@eafc.edu.br](mailto:leo@eafc.edu.br), [wagnerpriamo@yahoo.com.br](mailto:wagnerpriamo@yahoo.com.br)

<sup>2</sup> Departamento de Ciência e Tecnologia dos Alimentos, Centro de Ciências Agrárias, Universidade Federal de Santa Catarina – UFSC, 88040900, Florianópolis/SC, Brasil. [valeria@cca.ufsc.br](mailto:valeria@cca.ufsc.br)

---

### Abstract

The cheese serum is rich in proteins, lactose, fats and proteins but considered a great one pollutant of the industry of dairy products. Currently is low used in the food industry and the great wasted volumes in effluent treatment correspondents to animal nutrition or sent to treatment systems with low efficiency, contaminating receiving bodies drastically and generating environmental problems as the biochemical demand. The objective of the present study is consider economically alternatives for the use and correct destination for the cheese serum originated from of cheese dairies of small, medium and big scale. Was used as methodological base a qualitative experimental research, with experimental data obtained in laboratory from of industrial cheese dairy. The analyses showed a cheese serum with average percentage of 93,70 % ( $\pm 0,49$ ) of total solids, 0,84 % ( $\pm 0,04$ ) of proteins and 4,99 % ( $\pm 0,22$ ) of lactose. With to present organic load, presented as viable system, that where the serum can be destined for the concentration of solids through micro and ultrafiltration membranes, directing the proteins for the increase of the yield cheeses process, and the lactose for biofermentation, reducing DBO of the liquid sent to sources, and aggregating value to the industrialized product. Thus, concluded that economical viability of the use of the cheese serum can be obtained through some viable alternatives for industries with different scales of production.

*Keywords: Cheese whey, separation for membranes, ultrafiltration*

---