

Med *Clean* *Propre* *Limpio*iterranean


No. 29
Pollution prevention case studies

Reduction of water and energy consumption in a dairy industry

Company background

LURA is the biggest producer of milk and dairy products in Croatia. In LURA's factory Zagreb-Dukat, approximately 166,000 litres of milk are processed per year, obtaining the following main products: fresh and UHT milk, fermented products, cream, spreads, desserts and juices.

Industrial sector

Agro-food industry. Dairy Industry

Environmental considerations

In the factory, fresh drinking water was used for washing vehicles, production lines and machinery, heat exchange in technological processes and sanitary requirements.

Wastewater obtained from cleaning the machinery, containing both washing liquids and raw material remains, was drained into the sewer without previous treatment.

In addition to this, losses of hot water, condensate and "soft-demi" water were detected and attributed to technical reasons and inadequate habits of the employees.

Background

Given the environmental situation of the factory, the main aspects to improve were the reduction in drinking water consumption and wastewater generation, the reduction of the pollutant load of the wastewater and the reduction of energy consumption.

Summary of actions

The factory implemented the following measures to achieve its pollution prevention and water and energy saving objectives:

- Carried out employee education concerning water consumption reduction and optimal concentrations of washing liquids
- Used hoses with a smaller diameter (12 mm) for washing the process lines and machinery
- Used hot condensate as an additional energy source for warm water preparation
- Applied warm water circulation and replaced the steam with warm water in the mixer

Balances

Options	Benefits obtained
Water saving and pollutant load reduction options	Reduction of waste water amount by 286,000 m ³ /year (27%) Reduction of waste water pollutant load (COD) by 25% Savings of fresh (drinking) water by 280,000 m ³ /year Savings of washing liquids by 183 t/year (12%)
Energy-saving options	Savings of steam by 904 t/year (2%) Heat energy savings of 500,000 kWh/year
Total investment	€31,051
Savings	328,008 €/year
Payback period	1 month

Conclusions

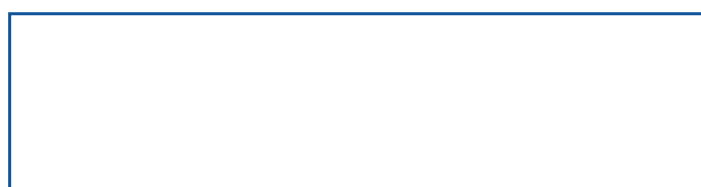
Thanks to implementation of the good environmental practice of insulating transport tubing, the company has considerably reduced the consumption of energy in the form of gas. Similarly, KRAŠ d.d. Food Industry has obtained substantial economic benefits that have enabled the company to recover its investment quickly.

In turn, thanks to the implementation of this alternative, improvements have been obtained.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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