

RECP Best Practice Catalogue

Final rinsing water recovery from the CIP station
Developed within the framework of MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is
funded by the European Union

Best Practice - Final rinsing water recovery from the CIP station

SECTOR:	Food & Beverage
SUBSECTOR:	Manufacture of dairy products
PRODUCTS	Milk, fermented milk (L'ben), milk curds (Raïb), butter, crème fraiche, Smen
CATEGORY	Process control or modification
APPLICABILITY	Utilities
COMPANY SIZE	158



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Description of the problem (Base scenario):

The CIP station performs on average 15 cleanings of objects and systems per day. Each CIP consumes 640 litres for the final rinse which is discharged completely to the sewer. This is relatively clean water, as it follows 3 step rinsing operations (initial, basic intermediate, acid intermediate), which is lost while it could be used for other purposes.

Description of the Solution

This improvement consists in recovering this water and reusing it for the initial rinses in the CIP station. For this, a 200 litre container with a pump and a 3-way valve, to select the effluent to be recovered, must be installed next to the CIP station to recover the rinsing water and pump it to the initial rinse water compartment of the station.

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Economic Benefits

There is a potential savings of 9.6 m³/day of final rinse water that can be recovered, or 3,005 m³/year, which represents a gross annual savings of 3,005 m³/year x 0.5 €/m³ = 1,498 €/year.

The operating cost, for the most part, equal, to the cost of energy consumption during the recovery pump's operation, the maintenance cost being very low. Energy consumption is estimated at 0.36 €/day (2kW pump operating on average 3hours/day) or 113 €/year.

The net savings is thus 1,385 €/year.

Environmental Benefits

Water consumption reduction of 3,005 m³/year

There is a reduction of waste water of 3,005 m³/year

Health and safety impact

Not relevant

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Capital investments & financial indicators	Investment: 375 € (225 € for the pump + 150 € for the container, valve and PE tubing). Return on Investment 0.27 year
Suppliers	Local suppliers
Other aspects	No technical barriers
Implementation	The action has been carried out, but with one significant change: The existing CIP station has reached the end of its life, and company management has decided to acquire a new station equipped with a rinsing water recovery device. The committed investment is 67,459 €. New indicators to be determined