

# RECP Best Practice Catalogue

*Optimisation of the basic settings of the cream separator to reduce the number of purges*  
*Developed within the framework of MED TEST II*



UNITED NATIONS  
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# Best Practice - Optimisation of the basic settings of the cream separator to reduce the number of purges

SECTOR:	Food & Beverage
SUBSECTOR:	Manufacture of dairy products
PRODUCTS	Milk; fermented milk (L'ben); Milk curd (Raïb); Cherbet; Milk cream; Camembert cheese; Cream cheese; Camembert cream; Butter.
CATEGORY	Process control or modification
APPLICABILITY	Process
COMPANY SIZE	147

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## Description of the problem

(Base scenario):

The separator has a capacity of 2,000 litres/hour, expels 1L/minute of milk purge, which represents  $60/2,000 = 3\%$  of the treated milk.

In comparison: another separator has a capacity of 10,000 L/hour, operational at another site, and discharges 30 L of milk per 20-minute cycle, or 90 litres/hour, which represents a loss of  $90/10,000 = 0.9\%$  of treated milk.

There is therefore a potential for reducing milk losses in the range of  $(3\% - 0.9\%)/3\% = 70\%$ .

In addition, milk purges cause an increase in the pollution effluent into the waste water.

## Description of the Solution

The improvement measure consists of testing adjustment of the separator in order to reduce milk losses by 50%. This setting will be followed by laboratory analyses to ensure product quality.

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<b>Economic Benefits</b>	<p>The cream separator works on average 2 hours/day and expels 1 L of milk/minute, which is: <math>120 \text{ L/day} \times 365 \text{ days/year} = 43,800 \text{ L/year}</math>. A 50% reduction in milk losses leads to an annual savings of 21,900 litres of milk, or <math>21,900 \text{ L/year} \times 0.27 \text{ €/L} = 5,910 \text{ €/year}</math></p>
<b>Environmental Benefits</b>	<p>Savings of 21,900 litres of milk/year This is a reduction of 21,900 litres of milk/year discharge to the sewer, which is a reduction of the pollution effluent to waste water, expressed in COD, of: <math>21,900 \text{ L/year} \times 220 \text{ g O}_2/\text{L} = 4,818 \text{ kg O}_2/\text{year}</math></p>
<b>Health and safety impact</b>	<p>Not relevant</p>

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<b>Capital investments &amp; financial indicators</b>	Costs: no investment, only operational costs Return on investment: not applicable
<b>Suppliers</b>	Not applicable, carrying out the internal adjustments is made by the responsible parties in production and quality
<b>Other aspects</b>	No technical barriers or negative impact on the quality of the products if the adjustments are made with a good laboratory follow-up
<b>Implementation</b>	