

# RECP Best Practice Catalogue

*Study the possibility of integrating whey  
into other products*

*Developed within the framework of MED TEST II*



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is  
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# Best Practice - Study the possibility of integrating whey into other products

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	Technology upgrade/Eco-innovation
APPLICABILITY	Process
COMPANY SIZE	147



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## Description of the problem (Base scenario):

Currently, the whey produced during the preparation of Camembert is directly discharged into the sanitation network of the company which increases the volume of wastewater to be treated and pollution flow.  
The amount of whey produced annually is 1,266 m<sup>3</sup>.

## Description of the Solution

Laboratory tests have shown that the whey produced is a mild whey. It would then be appropriate to study, using laboratory tests, the possibility of integrating whey, which contains soluble proteins with significant nutritional value, into the production of LFC or curdled milk.  
An integration percentage on the order of 10% in the LFC is feasible.  
The annual production of LFC is 3.2 million litres. Using the hypothesis that up to 10% of whey can be integrated without altering the quality of the LFC, it will be possible to use 320,000 litres of whey/year, which is  $\frac{1}{4}$  of the whey produced.



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**Economic Benefits**      The whey incorporated in the LFC will be marketed at the price of LFC.  
In regard to integrating up to 10% whey in LFC, the potential financial savings is equal to the integrated whey volume x LFC sales price: 320,000 litres/year x 0.25€/litre = 80,352 €/year

**Environmental Benefits**      Reduced resource loss of 320,000 litres of whey/year  
Reduction of pollution flow in wastewater (expressed in COD) of:  
320 m<sup>3</sup> whey/year x 60 kg O<sub>2</sub>/m<sup>3</sup> whey = 19,200 kg/year  
There is a reduction of wastewater of 320 m<sup>3</sup>/year

**Health and safety impact**

Not relevant



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<b>Capital investments &amp; financial indicators</b>	Cost: no investment except operating costs Return on investment: non applicable
<b>Suppliers</b>	Not applicable
<b>Other aspects</b>	Determine the influence of the microbial flora of whey, or rennet, on the quality of LFC. If the degree of acidity of whey is very high, it is difficult to integrate with other products, it would reduce the UBD (Use by Date). It will be necessary to determine the pretreatment of whey prior to integration with LFC. It will be necessary to determine at which stage of production of LFC that the integration of whey is most appropriate.
<b>Implementation</b>	