RECP Best Practices Catalogue

Optimisation of monitoring

the cream filling

Developed within the framework of MED TEST II

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The SwitchMed Programme is
funded by the European Union

Best Practice - Optimisation of monitoring the cream filling

SECTOR:	**Food & Beverage**
SUBSECTOR:	Bakery and farinaceous products
PRODUCTS	Dry biscuits, sandwich biscuits, wafers, sponge cakes.
CATEGORY	Process control or modification
APPLICABILITY	Process

COMPANY SIZE	400

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Description of the Problem (Base Scenario):	The cream filling presents problems. There is no temperature control, which causes blocking of the cream or a shifting of the sandwiches. These two adverse effects are a result of an improper viscosity. Viscosity is a function of the temperature: • The temperature must be controlled and the optimum temperature/viscosity found for the process; and install a temperature control. The recorded losses in terms of finished products are of 2 types: recyclable and non-recyclable. The authorised recycling rate must not exceed 20%. The annual estimate provided by the company for finished product losses at this stage is: • Recyclable losses: 284,544 kg • Non-recyclable losses: 1,872 kg
Description of the Solution	There are several relatively simple possibilities for keeping the temperature accurate, for example, double-wall pipes (3 - 4 m before filling), which makes it possible to maintain the optimum temperature and the corresponding viscosity of the cream filling. or install a buffer tank near the machines where the temperature is kept accurate, where the cream is recycled. The double wall is conditioned by cold water depending on the temperature of the cream and set temperature (automated). It can be easily estimated that the losses could be reduced by 80% for the non-recyclable and 50% for the recyclable respectively.

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Economic Gain	Reduction of 80% of non-recyclable rejects and 50% of recyclable losses, or a reduction of material losses of 122,430 kg/year, electricity of 28,526 KWh/year, water of 144.5 m^3/year and LPG of 8,840 kg/year, or an expected gain of € 63,032 /year.
Environmental Gain	Impact of solid waste and also on the cost of the final disposal of this kind of waste. 122 tons of raw material. Energy savings will reduce GHG emissions by 47.5 tons of CO_2e
Health and Safety Impact	None

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Investment & Financial Indicators	An investment of € 4,500 is estimated (Time for Return on Investment: < 1 year)
Suppliers	Local Suppliers, company engineers
Other aspects	Improvement, greater quality consistency
Implementation and new indicator	Scheduled to be carried out in 2018