RECP Best Practice Catalogue

Introduction of NIR analysis (protein, moisture)

Developed within the framework of MED TEST II

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

switchmed

The SwitchMed Programme is funded by the European Union

Best Practice - Introduction of NIR analysis (protein, moisture)

SECTOR:	**Food & Beverage**
SUBSECTOR:	Bakery and farinaceous products
PRODUCTS	Couscous (fine and medium), short pasta (small pellets, Tlitli, elbows of different sizes, vermicelli, macaroni, bird tongue, snail).
CATEGORY	Process control or modification
APPLICABILITY	Process

COMPANY SIZE	147 employees

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Description of the problem (Base scenario):	Quality control test results of finished products (pasta and couscous) showed a high variability in moisture from 8.31% to 14.13%. This variability leads to a drop in productivity and an increase in specific consumption of water and energy. The moisture of the finished products must be optimised and the characteristics of the raw materials and the process parameters taken into account.
Description of the Solution	Install a rapid NIR analysis method for moisture and protein analysis so as to: • Better and more quickly characterise semolina and its qualification for production/processing • Better and more quickly characterise the final product • Create the prospect of adapting and optimising the process (and the final product) according to semolina quality and stabilise the quality of the products around those optimal values. This rapid analysis can be carried out with a NIR analyser.

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Economic Benefits	From feedback (from other companies), an increase in productivity of around 2% is possible one year after implementation, which means: • 2% more product with the same energy input • 2% more product in the same amount of time • Reduced water consumption (reduction in recycled dry product) The economic benefit is estimated at 2% of turnover, or € 29,600/year
Environmental Benefits	Energy consumption reduced by 2% Water consumption reduced CO_2 emissions reduced
Health and safety impact	Not relevant

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Capital investments & financial indicators	Cost: € 55,000 Return on investment: 1.9 year
Suppliers	Instruments suppliers (imported)
Other aspects	Improvement of and stabilisation of quality
Implementation	

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