RECP Best Practice Catalogue

Optimisation of pasta and couscous productivity and quality by systematic process control

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 - Optimisation of pasta and couscous productivity and quality by systematic process control

SECTOR:	**Food & Beverage**
SUBSECTOR:	Bakery and farinaceous products
PRODUCTS	Semolina, Flour, Couscous, Pasta
CATEGORY	Process control or modification
APPLICABILITY	Process

COMPANY SIZE	400 employees

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Description of the problem (Base scenario):	The production lines of pasta and couscous are automated, all the production parameters are saved automatically but the lines have fixed programs and, currently, there is no process control that considers: • Variations in the quality of semolina (such as moisture, ash, gluten, Falling Number etc.) and the systematic reaction to these variations • Systematic adaptation of the process parameters to the quality of finished products (such as colour, humidity, granulometry, etc.) The operation of the production lines depends solely on operator know-how. The data recorded on the production lines as well as in the laboratory during quality control are not sufficiently exploited. This practice leads to overconsumption of water and energy, as nearly 5% (estimate) of the products are recycled, as there is a variability in quality.
Description of the Solution	The improvement measure consists of introducing the statistical evaluation of the recorded data in order to link the quality parameters to the parameters of the production process. This is achievable through the use of software such as spreadsheets as well as the training of an employee who will be responsible for data evaluation as part of quality assurance and production leadership, and with the goal of: • Increasing productivity by reducing the rate of recycled products • Reducing water and energy consumption • Stabilising product quality

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Economic Benefits	According to feedback, it will be possible to achieve an increase in productivity of 5% after one year after implementation. This implies a reduction of energy and water consumption on the pasta and couscous lines by 5% for uniform production.
Environmental Benefits	Material/energy/water in percentage and in absolute figures Pollution reduction (waste water, CO_2, waste)
Health and safety impact	Not relevant

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Capital investments & financial indicators	Cost: licence: € 235 + computer: € 2,000 + 1 employee: € 7,000/year Time for Return on Investment < 1 year (this estimation was obtained by feedback from other sites)
Suppliers	Different statistical software packages are available
Other aspects	Stabilisation of product quality
Implementation	

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