

RECP Best Practice Catalogue

*Enhancing the process for date syrup
production*

Developed within the framework of MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is
funded by the European Union

Best Practice - Enhancing the process for date syrup production

SECTOR:	Food & Beverage
SUBSECTOR:	Processing and preserving of fruit and vegetables
PRODUCTS	Natural dates; standard; branched; pitted, packaged in sizes from 200 g to 5 kg. Date syrup (in test phase).
CATEGORY	Process control or modification
APPLICABILITY	Process
COMPANY SIZE	160 employees



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TEST Training kit

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Description of the problem (Base scenario):

In order to diversify its range of products, the company has launched the production of date syrup.

The current yield of the syrup production, which is in the testing phase, is about 45%. Thus, for 64.3 tons of dates used for syrup extraction, the process generates 28.9 tons of syrup (noble product) and 35.4 tons of residues. This yield can be improved to minimise the amount of waste and maximise the amount of noble product. A yield of 70% can be reached.

Investigation of the production line as well as laboratory tests have shown that the quality of the grinding greatly influences the extraction efficiency.

Description of the Solution

Improving the date syrup production will increase the extraction yield up to 70%. This improvement takes place in the following steps:

1. Grinding: ensure finer grinding by changing the mill and sieve configuration or by introducing an additional mill
2. Extraction: optimise the extraction temperature, perform the extraction in two stages and ensure a good agitation of the water/dates mixture for 30 minutes

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Economic Benefits

1 ton of dates produces 450 kg of date syrup (45% yield) and generates a financial return of 295 €.

An increase in yield to 70% would result in the production of 700 kg of syrup for each ton of dates and a financial return of 459 €.

The economic benefit resulting from the increase in yield is 164 € per ton of dates.

For a processing potential of 214.5 tons of dates per year, the overall economic benefit will be on the order of $214.5 \text{ tons} \times 164 \text{ €/ton} = 35,182 \text{ €/year}$

Environmental Benefits

Reducing production waste by 250 kg per ton of dates used for syrup production constitutes 45.4% reduction.

Health and safety impact

Not relevant



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Capital investments & financial indicators	Cost : n.d. Return on investment:
Suppliers	Imported
Other aspects	Quality Improvement
Implementation	