

CLEANER PRODUCTION IN EGYPT SUCCESS STORY IN

OBOUR LAND FOR FOOD INDUSTRIES

The Factory: Obour Land for Food Industries is an Egyptian private company established in 1997, it is ranked as No. 4 in the Egyptian market in the field of white cheese production.

Industrial operations take place in the factory located in Obour Industrial City, Cairo. Most of the cutting, filling, and packing of the final product (white cheese) was a manual process but the company is willing to change to automatic procedure (TetraPak machine), which leads to environmental and production improvement and gives the factory a competitive advantages specially for the exporting markets.

The results achieved from the CP are summarized. The information serves to demonstrate how CP options can be successfully implemented in the Egyptian industries.



GENERAL INFORMATION	COMPANY	Obour Land for Food Industries
	SECTOR	Food
	PRODUCTS	White soft cheese and processed cheese
	MARKET	Local Market and Exporting
	EMPLOYEES	250 (all are permanent)
	WORKING SYSTEMS	Two shifts 7days/week 12 months/year

PRODUCTION	PROCESSES	The process can be summarized in the following stages: • Receiving of raw milk • Pasteurization • Concentrating milk using UF • Adding additives
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PRODUCTION (CONT.)



RAW MATERIALS

ENERGY SOURCES

WASTES AND EMISSIONS

- Incubation
- Cutting and packing
- Storage and marketing

Raw milk

Skimmed milk powder

Table salt

Starters

Vegetable oils
additives

Packaging materials

- Light fuel 41 t/month

-Electricity factory with 50000
Kwh/month

1- Gaseous emissions

gaseous emissions sources can
be categorized as follows:

- a. Electricity generator
- b. Steam boiler

2-Solid wastes

Solid wastes are generated from
the factory, such as:

- Broken filling plastic jars
- Wooden ballets
- Empty cartons and plastic
bags of raw materials
- Some broken cheese cubes
during manual handling

3-Liquid wastes

Liquid wastes are generated from
the factory, such as:

- Waste water generated during
cleaning of all equipments,
machines, floors, and walls
- Waste permeate generated
during the concentration of
raw milk by UF



Occupational safety and health (OSH)

There are some occupational perils against workers' health and safety, such as:

- Working in inconvenient conditions and standing for longer time during manual cutting and packaging.
- Increasing humidity inside the cutting and packaging area
- Slippery floors

CP OPTION



Specifying cleaner production Opportunities

1- Replacement of manual packaging to TetraPak machine

- Current state: The company stills using the traditional filling method (mainly manual filling) to fill the cheese containers (small portions, i.e. 250 g and 500 g) will create an environmental problem through increasing waste of the final product, which is an organic waste besides consuming more energy, water, working man time. Besides the unsecured quality and safety of the end product which will reflect less consumer acceptance and losing income for the company.
- Needed action: apply the automation system for the cheese filling instead of the manual system. The recommendation is to develop this step of the processing line by using TETRA PAK, or any similar type of filling machine, to fill the small portions, i.e. 250 g and 500g, of white soft cheese
- This will led to improve the quality of the end

- product and secure its safety besides increasing the profitability of the company.
- These elements would help the company to achieve the compliance with the environmental regulations. In other words the concept of the CLEANER PRODUCTION would be implemented

RESULTS

During the CP assessment that was conducted by a team of ECO experts, 1 CP option was identified for the company.

The most feasible and rewarding option is described below:

Option	Environmental Benefits	Economic Aspects		
		Savings [L.E./y]	Investment [L.E./y]	Payback [year]
Option 1: Replacement of the manual cutting and packaging with automatic system (TetraPak)	-improving working environment and achieving compliance with EEL law CO ₂ reduction = 632.52 ³ t/y SO ₂ reduction = -19.58 ² t/y BOD reduction = 16.5 t/y	500,000	2,000,000	4

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