

# MedClean Propre Limpio



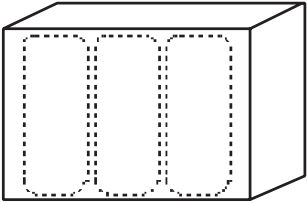
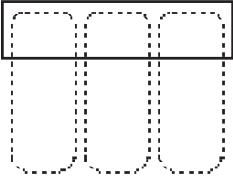
## No. 39 Pollution prevention case studies

### Pollution prevention in a dairy industry

<b>Company background</b>	LEYMA (Spain) is a dairy product firm that annually processes 10,000 tons of milk for the production of solid and liquid yoghurt as well as other dairy products.															
<b>Industrial sector</b>	Food industry. Production of dairy products.															
<b>Environmental considerations</b>	Packaging creates a large volume of waste for the dairy firm and the final consumer. Consumption of resources and packaging materials and management of existing packaging create greater and greater problems given the high volume generated.															
<b>Background</b>	<p>In Spain, Law 11/97 seeks to prevent and reduce the impact of packaging on the environment and the management of packaging waste throughout its life cycle. In order to fulfil these objectives, measures are established to promote reduction of packaging waste and its recycling and reuse.</p> <p>In order to meet these objectives, Law 11/97 and its regulation (RD 782/98) provide for preparation of a Business Prevention Plan in order to reduce, minimise and prevent at source the production and hazardousness of packaging waste generated.</p>															
<b>Summary of actions</b>	<p>The firm made a study of its packaging and packing with the aim of minimising the waste generated at source without affecting conservation of the product.</p> <p>1. Design of bulk packing for solid and whipped yoghurt was changed, decreasing the area of the cardboard used.</p> <p>Action 1.1: Packing of solid yoghurt.</p> <div> </div> <table border="1"> <thead> <tr> <th>Action 1.1.</th> <th>Before the action</th> <th>After the action</th> </tr> </thead> <tbody> <tr> <td>Number of packs per year</td> <td>12 x 10<sup>6</sup></td> <td>12 x 10<sup>6</sup></td> </tr> <tr> <td>Weight (g/cm<sup>2</sup>)</td> <td>0.027</td> <td>0.027</td> </tr> <tr> <td>Area (cm<sup>2</sup>)</td> <td>481.25</td> <td>439.00</td> </tr> <tr> <td>Cardboard waste (tons/year)</td> <td>156.0</td> <td>141.6</td> </tr> </tbody> </table>	Action 1.1.	Before the action	After the action	Number of packs per year	12 x 10 <sup>6</sup>	12 x 10 <sup>6</sup>	Weight (g/cm <sup>2</sup> )	0.027	0.027	Area (cm <sup>2</sup> )	481.25	439.00	Cardboard waste (tons/year)	156.0	141.6
Action 1.1.	Before the action	After the action														
Number of packs per year	12 x 10 <sup>6</sup>	12 x 10 <sup>6</sup>														
Weight (g/cm <sup>2</sup> )	0.027	0.027														
Area (cm <sup>2</sup> )	481.25	439.00														
Cardboard waste (tons/year)	156.0	141.6														

## Diagrams

### Action 1.2: Packing of whipped yoghurt.

	Original box	Redesigned box
		
Action 1.2.	Before the action	After the action
Number of packs per year	$4.16 \times 10^6$	$4.16 \times 10^6$
Weight (g/cm <sup>2</sup> )	0.035	0.035
Area (cm <sup>2</sup> )	497	330
Cardboard waste (tons/year)	72.36	48.00

2. Substitution of non-reusable wooden pallets (of a single use), with reusable pallets with a longer useful life that can be used at least 12 times.

	Before the action	After the action
Number of pallets	2,000	50
Unit weight (kg/pallet)	17	23.5
Number of uses	1	40
Wood waste (tons/year)	34	0.78

## Balances

### Annual balance

Action	Environmental benefit	Savings
Action 1.1	Reduction of 14.4 tons of paper/cardboard waste	€8,654.88
Action 1.2	Reduction of 24.36 tons of paper/cardboard waste	€14,641.18
Action 2	Reduction of 33 tons of wood waste	€9,015.50
TOTAL	38.76 tons of cardboard and 33 tons of wood	€32,311.56*

\* Savings obtained only from the reduction of consumption of materials.

## Conclusions

The new design used for the packs of yoghurt provides for grouping jars of yoghurt with less material consumption and decrease cardboard waste (in the second case, there was a reduction of 30 per cent of the unit weight of the bulk packaging). Furthermore, the use of reusable pallets permitted reduction of the amount of wood waste generated by the firm (by approximately 95 per cent).

As a result of the minimisation steps savings of €32,311.56 was obtained resulting from reduction in the consumption of materials.

**NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.**



Regional Activity Centre  
for Cleaner Production

Dr. Roux, 80  
08017 Barcelona (Spain)  
Tel. (+34) 93 553 87 90  
Fax. (+34) 93 553 87 95  
e-mail: cleanpro@cprac.org  
http://www.cprac.org