

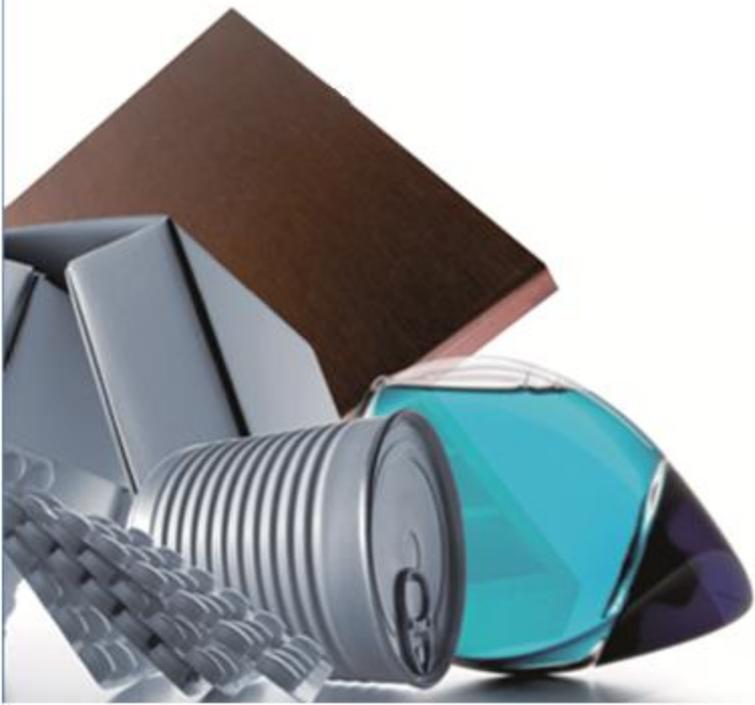


EUROPEN

The European Organization for Packaging and the Environment

Packaging supply chain's good practices to prevent food waste

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Packaging prevents food waste



“Europeans waste 90 million tonnes of food every year. If we carry on using resources at the current rate, by 2050 we will need the equivalent of more than two planets to sustain us”.

European Commission

Packaging is part of the solution to tackle food waste.

Packaging prevents food spoilage, ensures food quality and safety along the supply chain and at home, informs consumers on how to use and store packaged food products, increases shelf-life and provides portion sizes answering the multiple needs of consumer lifestyles and demographic changes.

Packaging innovation and new technologies play a key role.

The packaging supply chain, represented by EUROPEN, will continue to strive to further innovate and develop new technologies that make packaging more active and intelligent in tackling food waste.*

As part of these efforts and to encourage continuous improvements in packaging, the EUROPEN Task Force on Food Waste, chaired by [Sealed Air Corporation](#), developed good practice examples of packaging innovations and technologies that help prevent food waste.

** EUROPEN represents the whole packaging supply chain in a material neutral way on issues related to packaging and the environment and is open to any company with an economic interest in packaging and packaged products.*

As one of the food supply chain members, EUROPEN co-signed the Joint Food Wastage Declaration, “[Every Crumb Counts](#)”, and committed to contribute to the objective of reducing food wastage throughout the food chain and to contributing to halving EU edible food waste by 2020, in line with the objectives of the [Roadmap to a Resource Efficient Europe](#).

More information on packaging’s contribution to food waste prevention on EUROPEN’s website: <http://www.europen-packaging.eu>

Good Practice Examples of Packaging Technologies/Innovations to Prevent Food Waste

Information and aspects of the Packaging Solution initiative	Example 1
EUROPEN Member organisation responsible	Sealed Air Corporation
Type of Organisation & Stage of Packaging Supply Chain	Cleaning, Sanitation and Packaging Protection Material & Packaging Suppliers and Manufacture
Value Chain Stage(s) Targeted/ Benefited	Primarily Retail, but also benefited other stages
The Food Waste Issue	Bone punctures of precooked hams caused package failures during distribution, retail display and general handling. This led to food damage and waste.
Packaging Solution	Effective product protection needed to prevent damage and avoid waste by using abuse resistant packaging for products with sharp edges. This maintains packaging integrity during distribution and handling. The use of bone guard packaging (small patch) prevented damage.
Benefits and Amount of Food Waste Prevented	By addressing the 'hot spot' in retail display, the entire supply chain benefited. The small increase in packaging was offset by significant savings in reduced product losses prior to sale. Net reduction in total carbon footprint across supply chain of nearly 6%. Reduced damage during retail display by 73%.



Information and aspects of the Packaging Solution initiative	Example 2
EUROPEN Member organisation responsible	Sealed Air Corporation
Type of Organisation & Stage of Packaging Supply Chain	Cleaning, Sanitation and Packaging Protection Material & Packaging Suppliers and Manufacture
Value Chain Stage(s) Targeted/ Benefited	Manufacture, Warehouse & Transportation, Retail, Consumer
The Food Waste Issue	Microbial cross contamination (Campylobacter) is a leading food safety concern for fresh poultry. There was a need for properly designed packaging systems to mitigate risks due to food contamination, thereby resulting in food being wasted.
Packaging Solution	Hermetic poultry packaging: Leak-Resistant Packaging Systems and seals to provide a barrier to micro-organisms. This prevents microbial cross contamination and enhanced food safety protection.
Benefits and Amount of Food Waste Prevented	Leak-resistant poultry packaging contributed to greater than 50% decline in campylobacteriosis in NZ Leak-resistant packaging has been shown in Ireland to reduce contamination by nearly 90%, in turn significantly avoiding associated food waste.



Sources
www.cdc.gov (2011)
www.fsai.ie (2011)

Information and aspects of the Packaging Solution initiative	Example 3
EUROPEN Member organisation responsible	Sealed Air Corporation
Type of Organisation & Stage of Packaging Supply Chain	Cleaning, Sanitation and Packaging Protection Material & Packaging Suppliers and Manufacture
Value Chain Stage(s) Targeted/ Benefited	Retail, Consumers
The Food Waste Issue	Consumers in developed countries waste as much as 30% of what they purchase Nearly 2/3 of the food loss is possibly avoidable. Reasons for this loss include too large portion sizes, thereby resulting in leftovers being thrown away.
Packaging Solution	Packaging designed to control portions, ensure easy product removal or enable reseal after use. Portion control packaging minimize amount of avoidable consumer food waste such as leftovers, cooking too much food, food being left in a larger pack and not consumed in time.
Benefits and Amount of Food Waste Prevented	Adequate packaging design and formats can prevent loss of edible food, reduce throwaways while providing convenience features. Overall impact is saving food costs, reducing environmental impacts and enabling food supply to feed more people Portioned poultry packaging for example reduces packaging by up to 40% while providing convenience for consumers Ready meal packaging for entrees reduces food losses during home meal preparation which can exceed 15%

Shelf-Stable Packaging



Portioned Packaging



Vacuum Skin Fish Packaging



Resealable Packaging



Information and aspects of the Packaging Solution initiative	Example 4
EUROPEN Member organisation responsible	Sealed Air Corporation
Type of Organisation & Stage of Packaging Supply Chain	Cleaning, Sanitation and Packaging Protection Material & Packaging Suppliers and Manufacture
Value Chain Stage(s) Targeted/ Benefited	Primarily Retail
The Food Waste Issue	Back-of-store preparation leads to high food loss and short shelf life, in turn creating food waste.
Packaging Solution	Use of case-ready packaging technology to extend shelf life of perishable meats has led to changes in supply chain. Market shifts occurring from back-of-store prep to centralized case-ready formats.
Benefits and Amount of Food Waste Prevented	Case ready centralizes food preparation, extends shelf life and creates supply chain efficiencies, thereby reducing downstream food waste at retail. Case ready packaging also minimizes amount of avoidable consumer food waste

Store-wrap package



Case-ready package



Information and aspects of the Packaging Solution initiative	Example 5
EUROPEN Member organisation responsible	Sealed Air Corporation
Type of Organisation & Stage of Packaging Supply Chain	Cleaning, Sanitation and Packaging Protection Material & Packaging Suppliers and Manufacture
Value Chain Stage(s) Targeted/ Benefited	Distribution, storage and within retail environment as consumer benefits through enhanced product quality
The Food Waste Issue	Product spoilage losses throughout the supply chain due to deterioration of pasta quality and short shelf-life, thereby creating food waste.
Packaging Solution	<p>Overall impact on supply chain is to increase sustainability of distribution chain through enhanced packaging protection of distributed products, using Freshness Plus® Active Packaging Technology to achieve freshness preservation, avoid deterioration, and extended shelf life.</p> <p>Active packaging can eliminate need for additives and preservatives. Oxygen scavenging films eliminate oxygen from the interior of the package in addition to blocking oxygen migration.</p>
Benefits and Amount of Food Waste Prevented	<p>Product protection decreases product spoilage during distribution and storage while extending seasonal production.</p> <p>Extended distribution life gives greater distribution flexibility with reduced retail shrink.</p> <p>Increased product quality life results in cleaner labels and fresher product</p> <p>Fresh pasta shelf life extended by 50% by preventing mould growth</p>



*Also used for other foods,
e.g. Processed deli meats
show improved color
retention and freshness*



Information and aspects of the Packaging Solution initiative	Example 6
EUROPEN member organisation responsible	Metsä Group
Type of organisation & state of Packaging Supply Chain	Forest industry group whose core operations consist of tissue paper, baking and cooking papers, paperboard, pulp, wood products, and wood supply and forest services.
Value Chain Stage(s) Targeted/ Benefited	Food service: professional cooks and kitchen superiors in institutional kitchens and catering services, and purchaser managers in communities
The Food Waste Issue	Food is cooked in steel trays resulting in food burning and sticking to the edges of the tray and therefore left uneaten when served, thereby producing food waste.
Packaging Solution	<i>SAGA Cook & Chill - Baking and cooking paper for professional</i> By using cooking paper to line the trays avoids food burning and sticking to the tray, resulting in the food waste avoidance.
Benefits and Amount of Food Waste Prevented	<ul style="list-style-type: none"> •Cooking paper prevents the food from burning to edges •Food can be served as portions Reduce food spill up to 10% per GN (GastroNorm) tray.



<i>Information and aspects of the Packaging Solution initiative</i>	<i>Example 7</i>
EUROPEN Member organisation responsible	Nestlé
Type of Organisation & Stage of Packaging Supply Chain	Nutrition, Health and Wellness Company
Packaging type / related Product	7 to 25 Kg Bags for dry Cat & Dog food product
Food Waste Issue	Original paper bag structure was easily damaged along supply chain creating product loss / waste
Packaging Solution	The paper structure was changed to a more resistant structure to puncture and tearing for this kind of application
Benefits	The number of damaged bags and related product losses has been reduced by approx 50%
Country & Geographical Level of implementation	Europe and USA



Information and aspects of the Packaging Solution initiative	Example 8
EUROPEN Member organisation responsible	Nestlé
Type of Organisation & Stage of Packaging Supply Chain	Nutrition, Health and Wellness Company
Packaging type / related Products	All types of packaging for all kind of products
Food Waste Issue	In some cases, consumers buy too large pack format. The product is not totally consumed by the best before consumption date, the remaining product has to be discarded, resulting in food waste.
Packaging Solution	Offering smaller formats of the consumer unit, to propose consumer a controlled single serve portion pack. This can be applied almost in any kind of packaging type like flexible (bag , sachet, stick pack) but also to rigid container like plastic, glass, metal, board.
Benefits	Serving exactly the food portion needed, avoiding wasting the “surplus”
Country & Geographical Level of implementation	Worldwide



Information and aspects of the Packaging Solution initiative	Example 9
EUROPEN Member organisation responsible	Nestlé
Type of Organisation & Stage of Packaging Supply Chain	Nutrition, Health and Wellness Company
Packaging type / related Product	Pallets of bottled water, mainly 150cl bottles in 6-packs
Food Waste Issue	Pallet instability leads to pallet damage and consequently many bottles damaged, resulting in product loss
Packaging Solution	Change the wrapping parameters of the stretch film to increase the pallet stability
Benefits	Damaged packages have been reduced by 83% or 0.5 million bottles saved per month
Country & Geographical Level of implementation	Poland, but this could be extended widely



Information and aspects of the Packaging Solution initiative	Example 10
EUROPEN Member organisation responsible	Nestlé
Type of Organisation & Stage of Packaging Supply Chain	Nutrition, Health and Wellness Company
Packaging type / related Product	Any type of product and packaging
Food Waste Issue	Product waste do to lack of communication on preparation, dosing and storage
Packaging Solution	Give relevant communication to consumer on the product preparation, dosing and storage
Benefits	Correct dosing and preparation reducing food waste
Country & Geographical Level of implementation	Worldwide

HOW TO PREPARE:



1

Wash your hands before preparing milk supplement.
Hugasan ang mga kamay.



2

Wash glass thoroughly until no milk remains.
Hugasan ang baso.



3

Boil drinking water for five minutes; allow to cool.
Pakuluan ang inuming tubig nang limang minuto. Palamigin.



4

Pour approximately 225ml pre-boiled water into a glass.
Maglagay ng approximately 225ml ng tubig sa baso.



5

Only use scoop provided (must be level). Ensure enclosed scoop is washed and thoroughly dried before it is used for the first time.
Gamitin ang scoop na kasama sa pakete ng ibo (Patagin ang basol scoop). Siguraduhin na hugasan at patuyuin ng mabuti ang scoop bago gamitin sa unang pagkakatasa.



6

Add 7 level scoops into glass.
Maglagay ng 7 scoops sa baso



7

Stir until powder is fully dissolved.
Hatuin hanggang matunaw ang powder.



8

After each use, the bag should be closed tightly and stored in a cool, dry place. Must be used within 3 weeks after opening.
Tupling mabuti ang pakete at itago sa lugar na tuyo at may kalamang tamag. Gamitin sa loob ng 3 linggo.

Information and aspects of the Packaging Solution initiative	Example 11
EUROPEN Member organisation responsible	Total
Type of Organisation & Stage of Packaging Supply Chain	Raw Material Packaging Suppliers and Manufacture
Value Chain Stage(s) Targeted/ Benefited	Material Convertor, Packer, Assembler, Retail
The Food Waste Issue	Lack of product protection and robust sealability can damage and/or contaminate food leading to wastage.
Packaging Solution	Develop thinner and better performing films that reduce food waste as well as packaging waste
Benefits and Amount of Food Waste Prevented	The range of Total Lumicene® films are innovative solutions that offer higher technical standards for better sealing, barrier, etc. contributing to food waste reduction by improving product preservation and packaging's integrity during distribution, handling and storage, while reducing resource use and packaging waste.

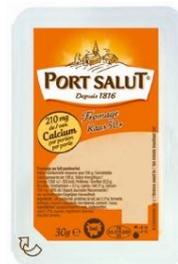


<p>Information and aspects of the Packaging Solution initiative</p>	<p>Example 12</p>
<p>EUROPEN Member organisation responsible</p>	<p>Borealis Plastomers</p>
<p>Type of Organisation & Stage of Packaging Supply Chain</p>	<p>Resin manufacturer</p>
<p>Value Chain Stage(s) Targeted/ Benefited</p>	<p>Packing, transportation and distribution</p>
<p>The Food Waste Issue</p>	<p>In order to avoid food waste and ensure consumer protection along the value chain, it is important to provide seals and packaging that perform efficiently in the specific application conditions.</p>
<p>Packaging Solution, Benefits and Amount of Food Waste Prevented</p>	<p>Plastomers are specialty polymers which enhance <u>seal-ability</u> (capacity to provide strong and hermetic seals even if some food is present in seal area during packaging step) and <u>abuse resistance</u> (reducing the risk of mechanical failure, like puncturing) during packaging transport and distribution steps of packaged food.</p> <p>This allows for (1) superior seal and pack integrity (2) increased productivity and reduced machine stops during packaging phase (3) reduced packaging weight. These benefits reduce risk of food waste during packaging, transport and distribution phases, while minimizing packaging waste.</p> <p>Plastomers are used in all forms of flexible packaging including vertical form-fill-and-seal films, Heat-shrink bags for meat, brick-type packaging for drinks and liquid foods, modified atmosphere packaging constructions, top webs for trays, freezer film etc.</p>

Information and aspects of the Packaging Solution initiative	Example 13	
EUROPEN Member organisation responsible	Bel Group	
Type of Organisation & Stage of Packaging Supply Chain	Branded Cheese Producer	
Value Chain Stage(s) Targeted/ Benefited	Consumption stage – Households	
The Food Waste Issue	Perishable food like spreadable cheese needs adequate packaging barrier protection to be preserved up until “best before” date. Once opened, packaging can no longer fulfill its barrier function and product not eaten within a few days gets unsuitable for consumption and has to be discarded, resulting in food waste.	
Packaging Solution	Single portions individually packed	
Benefits	<p>Portioned packaging helps households to reduce their food waste</p> <ul style="list-style-type: none"> • Uneaten portions are perfectly preserved once the pack has been opened, up until their “best before” date. • Portions have the right size avoiding overserving and potential leftover <p><i>For 58% of surveyed consumers, single cheese portion packaging is the format perceived as the least associated with wastage. In addition, 75% of people surveyed stated that they never waste cheese packaged this way.</i></p> <p><i>Source: Ifop study ordered by Bel and conducted in 2013 with French cheese consumers</i></p>	



Information and aspects of the Packaging Solution initiative	Example 14
EUROPEN Member organisation responsible	Bel Group
Type of Organisation & Stage of Packaging Supply Chain	Branded Cheese Producer
Value Chain Stage(s) Targeted/ Benefited	Consumption stage – Collective catering
The Food Waste Issue	<p>Food waste is generated in school canteens for several reasons including:</p> <ul style="list-style-type: none"> • Uneasy anticipation of guests number and their appetite • Inadequate serving size • Safety rules requiring to discard remaining food on the self-service shelf
Packaging Solution	Single portions individually packed
Benefits and Amount of Food Waste Prevented	<p>Portioned packaging helps canteens to reduce their food waste</p> <ul style="list-style-type: none"> • Unused packed cheese portions left on self-service shelf can easily be returned to the refrigerator (unlike cheese sliced on site) • Packed cheese portions have the right size and are more likely to be fully consumed, avoiding potential leftover and therefore food waste <p><i>Packed portions help reduce cheese waste: only 6% of individually packed cheese is wasted whereas average cheese waste rate is 25%</i></p> <p><i>Source: Chef'eco / Ifop study ordered by Bel and conducted in France in 2013 with elementary and secondary school canteens totaling more than 1000 guests</i></p>





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See also the following video on food waste prevention

<http://www.goodbadspudly.com>

Source: INCPEN