

## reclosable packaging and dosing aids



### Better storage, more accurate dosing, less waste

More and more packaging is being developed specifically to make consumers' lives easier. Reclosable packaging is on the rise, and there is also a trend towards more and better dosing aids. Such packaging helps consumers store products better, consume them in more accurate quantities, and waste less. While this is also good for the environment, the packaging does sometimes become more complex as a result.

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### Anticipating actual consumer behaviour

#### Reclosable packaging has been around since time immemorial.

Just think of the many reclosable glass bowls, pots, and bottles. However, a great many new varieties of resealable packaging have been developed recently for a greater variety of products. Today, it is much more common to buy slices of ham and cheese in resealable trays with a click-shut lid or a film cover with an adhesive strip (see also Carrefour testimonial). 'This latest development began around ten years ago,' observes Peter Ragaert, a Technology Advisor at Pack4Food.

'Previously, sliced ham and cheese was only available in disposable plastic packaging. Many consumers would take out what they needed and simply leave the rest. Because the opened packaging no longer closed properly, the goods dried out more quickly.' With the resealable systems, the industry has cleverly anticipated actual consumer behaviour. Various systems are now available. The most well known are trays with click-shut or adhesive closures and bags with zip or rib sealing strips.

### An alternative to portion packaging

#### Effective resealable packaging ensures that the remaining product stays fresh for longer.

'In that sense it is sometimes a good alternative to portion packaging,' explains Ragaert. 'It anticipates the same combination of needs: buy in large quantities but consume in smaller quantities. Resealable packaging is also extremely user-friendly and flexible, since you can take out precisely the amount you want. Improved dosing aids are therefore constantly being

developed, especially for liquid and viscous products. Think of the screw-tops on drinks cartons, the nozzles on ketchup or mustard bottles, or the taps on the Bag-in-Boxes for wine, fruit juice, and milk. Bag-in-Box is a textbook example: instead of a 75 cl bottle, you now buy a 3 litre box, but thanks to the closing and dosing system, the contents stay fresh for longer.'

good to remember

More and more reusable packaging and dosing systems are being developed to anticipate the needs of consumers.

Effective reclosable packaging and better dosing systems ultimately mean less food waste, a major environmental gain.

Conversely, these new packaging techniques generally require more material and are more complex. It is a continuous search for the right balance.

## reclosable packaging and dosing aids



If food is stored in disposable packaging after opening, it dries out more quickly. An effective resealable tray solves this problem.



The Bag-in-Box is a textbook example: perfectly reclosable and fitted with a handy dosing system.

### Research and development in a triangular partnership

**Producers see reclosable packaging and dosing systems as a way of winning over consumers to their products.** The industry therefore wants to continue developing user-friendly packaging. That however is not easy. 'Producers have to bear in mind a great many parameters,' explains Guy Dohogne, also a Technology Advisor at Pack4Food. 'How do we limit the extra cost? How do we monitor food safety, for example if we use ad-

hesives? What is the impact on filling systems? New packaging techniques are therefore almost always developed in a triangular partnership with a food producer, a packaging producer, and a manufacturer of filling systems. Together, they seek practical and safe solutions that are also efficient, economical, and environmentally sound to implement.'

### Ease of use and environmental considerations in balance

**The impact on the environment is also a constant point of attention.** 'It is a continuous search for the right balance,' says Dohogne. 'A screw-top on a drinks carton or a cheese box with a click-shut lid inevitably means more material. On the other hand, they result in less product waste, which is a major environmental gain. In any case, you have to be extremely careful when determining impact on the environment. For example, where does the packaging producer buy its raw materials? What happens to the packaging material after use? If packaging comes from or trav-

els to the other side of the world, we also have to consider the environmental impact of its transport and the consequences for the local market. The way in which consumers shop also affects a product's footprint. You can only estimate the environmental impact correctly if you perform a full life cycle analysis for each packaging design. We must limit the impact on the environment as much as possible by choosing the right materials and using the best available technologies.'

### For additional information

Pack4Food is a consortium of knowledge centres, network organizations, and businesses concerned with innovative food packaging and sustainable and functional packaging.

[www.pack4food.be](http://www.pack4food.be)



# Correctly adapting the closing system to the product for optimal conservation



Carrefour Belgium offers a growing number of food products in reclosable packaging. The goal is to make life easier for consumers and to help them avoid wasting food. The company always chooses the opening/closing system that best suits the product and the packaging.

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About **90 references** with reclosable packaging

**Carrefour is the world's second-largest distributor of food and non-food products.** In Belgium, the company markets about 90 references in reclosable packaging, in addition to the traditionally reclosable packages such as jam pots (see also Feature). These references primarily include sliced cold meat and

cheese sold in packaging with self-adhesive closures. They also include prepared salads, diced cheese, as well as nuts and dried fruits in little dishes with a seal and a cover. All of these food-stuffs are provided in packaging of various sizes.

Easy **to open** and **close again**

'Reclosable packages enable us to offer new services to consumers. They can leave the food product in the original packaging once it has been opened,' says Guido Brosius, Packaging Manager at Carrefour Belgium. 'This type of packaging also offers easier opening and closing. In addition, they enable us to offer a broader choice of products in store.'

The food products are selected based on the added value provided by the reclosable packaging, also taking into account

what is already available on the market. 'It is important to select appropriate products when considering a reclosable packaging,' observes Brosius. 'The reclosable aspect of a packaging, as well as its ease of opening, should reduce the risk of product waste, offer time savings for consumers, and encourage them to repeat their purchase. It is essential to optimize the way the packaging is opened: it should not open too easily (to avoid wasting product), nor with too much difficulty (to avoid discouraging consumers).'

Slight production **cost increase, reduced food waste**

Marketing a food product in a reclosable packaging requires several adaptations to the production process. In most cases, the basic plastic packaging is the same, but a special machine is required to apply the self-adhesive systems. 'These amendments make the process slightly more complex and entail a cost premium estimated at about 5% of the cost of a normal pack-

aging,' explains Brosius. 'On the other hand, we expect greater customer satisfaction, primarily because food waste is reduced. In the case of delicatessen, for instance, the product will be less prone to decolouration on the sides. This will prevent consumers from throwing away partly used products unnecessarily.'

good to remember

A reclosable packaging enables to optimize the conservation of partly used products, thus **reducing the risk of waste.**

Carrefour Belgium provides a **reclosable packaging** when it is likely to make **life easier for consumers.**

Tests are carried out with manufacturers and consumer panels in order **to ensure convenience.**

# Correctly adapting the closing system to the product for optimal conservation



## How Carrefour develops **reclosable packaging**

### **Step 1:** **Select the most suitable closure**

After selecting the product and weights to market in a reclosable packaging, Carrefour Belgium tests various types of reclosable packaging with the manufacturer. Is the system easy to open and reclose? Does the self-adhesive still perform properly after several openings? Does the opening and closing system resist tearing?

### **Step 2:** **Consumer panel tests**

A prototype of the packaging is then produced and submitted to a consumer panel. These consumers test the ease of use of the packaging. Such tests enable the accurate assessment of whether the plastic packaging, the product, and the opening/closing system smoothly integrate to provide genuine added value.

### **Step 3:** **Display in store**

Consumers must immediately recognize that the packaging is reclosable. This can be indicated by a label that is carefully designed to this effect and perhaps highlighted by small show cards. The packaging must also clearly indicate how the opening and closing mechanism works.

Guido Brosius, Packaging Manager,  
Carrefour Belgium

'In order to provide genuine convenience to consumers, the product, the packaging and the closing system must form a perfectly integrated whole.'

### **Carrefour and the environment**

Carrefour is committed to systematically use as little packaging as possible while minimizing energy consumption and CO<sub>2</sub> emissions. The distributor thus implements various programs aimed at:

- Reducing the quantity of raw materials at the source;
- Maximizing the use of recycled materials;
- Fostering easier sorting and recycling;
- Using renewable materials.

[www.carrefour.eu](http://www.carrefour.eu)

# Carefully thought-out packaging avoids the need for cutlery



The quality fast food chain EXKi has recently introduced new cardboard triangles for its pies and quiches. These triangles enable the consumption of sweet or salted pies without cutlery. The company expects to save up to 240,000 pieces of cutlery per month.

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## Pies and quiches in triangles

EXKi was created ten years ago and today is a familiar brand in our shopping streets. This Belgian company specializes in quality fast food and ensures the freshness and natural character of its ingredients. Among the products offered by EXKi are 28

types of pies and quiches. These are sold in pre-cut slices in triangular cardboard trays. They are one of the company's most popular product ranges.

## No more need for cutlery

'We have just finished re-thinking our triangles in order to reduce their environmental impact,' explains Virginie Torra, R&D and Procurement Manager at EXKi. 'The new packaging has the same dimensions, but is foldable at its tip. In other words, the tip of the triangle can be lowered, thus enabling the eating of the piece of pie or quiche more easily. The convenience aspect for our customers is thus increased.'

The new triangles enable customers to consume the pie without cutlery. 'This considerably reduces the environmental impact because we sell approximately 120,000 pieces of pie per month. We therefore expect cutlery savings of up to 240,000 pieces a month,' adds Torra.

## Less bleach and lighter cardboard

Just like its predecessor, the new triangle is manufactured from recycled cardboard. However, its production requires less bleaching. Its environmental impact is therefore reduced during

production as well as its final disposal. In addition, the new triangle weighs only 9 grams, which is even less than its predecessor.

good to remember

The new triangles for pies and quiches **avoid the necessity of cutlery**, which entails considerable savings.

This initiative is part of the **Re-think Project**, through which EXKi is rethinking all of its packaging in order **to reduce its environmental impact**.

In addition, they require **less bleach** during their production and **are lighter**.

# Carefully thought-out packaging avoids the need for cutlery



## How EXKi designed its new triangles for pies and quiches

### Step 1: Rethink the concept

EXKi asked its Belgian supplier of cardboard triangles to reconsider the concept in order to reduce its environmental impact. With new manufacturing technologies available, the supplier suggested a cardboard tray that is foldable at its tip. The new packaging combines innovation, respect for the environment, and convenience.

### Step 2: Test prototypes

The supplier designed an initial version of the triangle. This prototype was tested by EXKi's product/marketing team, then adapted by the supplier. The final design minimizes cardboard waste during both production and end of life. This new model was also fine-tuned in terms of handling ease and robustness.

### Step 3: Packaging launch in stores

The new triangles were made available in stores as soon as the stocks of old cardboards were exhausted. The stores' sales teams were informed in order to explain to customers how to use them. In addition, promotional folders were made available to describe the practical and environmental benefits of the new triangles.

Virginie Torra, R&D and  
Procurement Manager, EXKi

'We wanted an innovation that was also practical and respected the environment. We scored three bullseyes with one stone.'

### EXKi and the environment

Since its creation in 2001, EXKi has made health its primary commitment. Respect for the environment was naturally an integral priority.

The company considers all of its actions in terms of sustainable development. It implemented its Re-think action plan in 2008.

One aspect of Re-think is the development of the Green Card. This eco-citizen loyalty card rewards the re-use of paper bags, bio-cotton fabric bags, isothermal mugs, et cetera.

Re-think has already enabled the company to reduce CO<sub>2</sub> emissions related to its activities by 29% (the initial target was 25%). The 2011-2012 project plan focuses, among other things, on optimizing packaging from an environmental perspective.

[www.exki.com](http://www.exki.com)

## Reducing food waste



### Key role of consumer behaviour, but also of packaging

Too much food still ends up in the rubbish bin. Targeted campaigns involving local operators are vital in changing consumer habits to adapt their buying to what they need. At the same time, packaging enables companies to extend the shelf life of the product as well as provide better product dispensing, thereby reducing waste.

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### Belgians throw away more than 15 kg of food a year

**According to FEVIA, Belgian consumers throw away between 5 and 10% of the food they buy.** Between 15 and 20 kg of food per citizen ends up in the rubbish bin each year. This represents approximately 180 euros.

'Even if consumers are generally more aware of the problem of food waste, we still have a long way to go,' says Nathalie Ricaille,

Policy Officer at Espace Environnement and Communication Manager of the European GreenCook Project. 'To reduce food waste, we have to work on both packaging and consumer behaviour. That is why it is important to promote initiatives that encompass these two aspects, in particular by getting certain clear messages across to the general public.'

### Longer shelf-life, better dosing

The actions being taken by the industry are many and varied. 'As well as limiting the amount of packaging, the industry is deploying special efforts to reduce food waste,' states Ricaille. 'For example, modified-atmosphere packaging used for meat, allows the packaged product to be kept in good condition for longer.' Another type of 'intelligent' packaging indicates when the product should be eaten or warns when the cold chain has been disrupted during transportation.

In addition, companies are increasingly offering resealable packaging for products such as cold cuts and sliced cheese. The same is true of packaging that allows appropriate dosage or portioning. 'Resealable packaging and dispensers help limit waste provided they are suited to the product. The key is to ensure that the packaging is perfectly suited to the product and its use. With the introduction of such packaging, consumers better understand the key role they play in protecting the product and extending its shelf life.'

good to remember

Packaging protects the product, extends its shelf life, and encourages efficient dosing.

One of the key functions of packaging is to limit food waste.

Reducing food waste also involves campaigns to raise consumer awareness.

# Reducing food waste

### Creative campaigns to change purchasing behaviour

Reducing food waste also involves changing consumer behaviour as well as packaging. 'Campaigns are being developed at distribution level to encourage more responsible behaviour. Above all, the idea is to increase the visibility of products and packaging that help reduce food waste,' continues Ricaille. 'For example, some supermarkets, such as Leclerc in France, are introducing special labelling for packaging that creates less waste by calling attention to its ability to store the product longer, among other things.'

Another initiative, where possible, consists of promoting purchases of cold cuts and cheese sliced to order. This encourag-

es consumers to match the amounts purchased to the actual needs of the household, thus reducing the risk of waste.

For fruit and vegetables, conversely, the appeal of bulk buying remains up for discussion. Frequent handling by consumers damages the more fragile fruits and vegetables. This leads, of course, to sizeable losses at the point of sale or at home. In any event, systematically packing each piece of fruit does not make any sense. The right approach therefore has to be found, from both an economic and an environmental standpoint.

### GreenCook promotes local campaigns

The GreenCook Project focuses especially on reducing waste through supermarket campaigns. Coordinated by Espace Environnement, it brings together partners from five countries in northwestern Europe. 'Several initiatives at the point of sale have been remarkably successful,' declares Ricaille. 'For example, nutritionists give demonstrations to explain to consumers how to prepare a sauce with tomatoes that are no longer presentable enough for a salad; or how to make smoothies with slightly damaged fruit. Another example: signs on the meat shelves give specific advice, for example, regarding the number of grams to allow per person.'

The GreenCook Project goes even further. In addition to supermarkets, the home, school canteen, and restaurant have also been identified as key sources of waste. Targeted campaigns are being developed for each of these. 'The fight against waste is extremely topical. That gives motivated operators genuine room for manoeuvre to encourage the spread of these innovative initiatives,' concludes Nathalie Ricaille.



Several initiatives in supermarkets are aimed at raising consumer awareness at the point of purchase.

#### About Espace Environnement

The Espace Environnement activity is linked to sustainable development. A partner to public authorities, associations, and businesses for more than 40 years, the institution promotes responsible 'eco-citizenship' that is based on consultation with local operators and the participation of residents. Its main action areas are land use planning, urban design, the fight against indoor pollution, the creation of green spaces, cleanliness, and reducing waste.

### For additional information

Espace Environnement: [www.espace-environnement.be](http://www.espace-environnement.be)

GreenCook: [www.green-cook.org](http://www.green-cook.org)



# Packaging optimization support



## A new Internet tool for successful ecodesign of your packaging

Do you want to adopt an ecodesign approach when optimizing or developing a package? Which elements must be taken into account? And where do you start?

The [www.pack4ecodesign.org](http://www.pack4ecodesign.org) Website helps you answer all of these questions.

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The new Website is designed for packaging professionals. It was developed by Fost Plus based on a simplified life cycle analysis tool. The site is easy to use. It enables the identification of the impacts of your packaging—CO<sub>2</sub> emissions, energy consumption, water consumption—and helps you reduce each of them.

An animated tutorial is also available, bringing you up to speed on how to use the tool in just a few minutes.

The Intertek RDC consulting bureau developed the calculation tool that generates the simplified life cycle analysis results. The

solutions and actions to be taken are suggestions by Fost Plus and have been added to the tool in order to enable it to do more than merely recognize the impacts of packaging. The Website is available in English, French, and Dutch.

This new Website efficiently complements the [www.pack4recycling.be](http://www.pack4recycling.be) Website, which provides advice on how to improve the recyclability of packaging, as well as the [www.preventpack.be](http://www.preventpack.be) Website, which develops various prevention actions in detail.

good to remember

This packaging optimization tool is designed for **all packaging professionals**.

The site provides **numerous tips** to reduce the environmental impact of a packaging.

The [www.pack4ecodesign.org](http://www.pack4ecodesign.org) Website helps you with the **ecodesign** of your packaging.

It enables you to carry out a **simplified life cycle analysis** for numerous types of packages.

It also enables the **simulation of the benefits** of a recommended action.

# Packaging optimization support

## Start with a few clicks



### For all types of packaging

The Website covers many types of packaging: bottles in various materials, metal drinks cans, beverage cartons, glass packaging, paper/cardboard packaging, as well as tubes, dishes, blisters, plastic films, et cetera. You can select the packaging and the material before starting the analysis.



### Select your own values or default values

The following screen enables you to specify the required weight, volume, and colour by indicating your own values or by choosing a default value. In addition, you can indicate which accessories and components you foresee for your packaging: cap, label, film, box, et cetera.



### Identify impacts

The tool highlights your packaging's principal impacts on the environment. It identifies the point of greatest impact for each stage in its life cycle.



### Advice to reduce each impact

Concrete advice and actions are given for each stage of the life cycle. Furthermore, the tool provides additional information such as possible negative effects, practical examples, et cetera.

### Visualize the benefit of an action

The tool enables you to simulate the benefit of a recommended action. It compares the values with and without the implementation of the recommended action for each type of impact.



For additional **information**

[www.pack4ecodesign.org](http://www.pack4ecodesign.org)

[www.preventpack.be](http://www.preventpack.be)

[www.pack4recycling.be](http://www.pack4recycling.be)

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