

PACKAGING INNOVATION

BRIEFING REPORT OCTOBER 2022



Welcome to ThePackHub's Packaging Innovation Briefing Report for October 2022.

We hope you enjoy this comprehensive and unique monthly review of all things packaging innovation.

This briefing of the month's global packaging innovations and industry news ensures that you are kept up to speed and fully informed of the latest packaging innovations.

We have 135 pages of content and have collated 105 new packaging innovations for the month.

The innovations featured track The Pack Hub's nine trend areas:

Naturally Done

Everyday Engagement

The Online Surge

Making Life Easy

Materially Changed

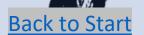
Protect and Preserve

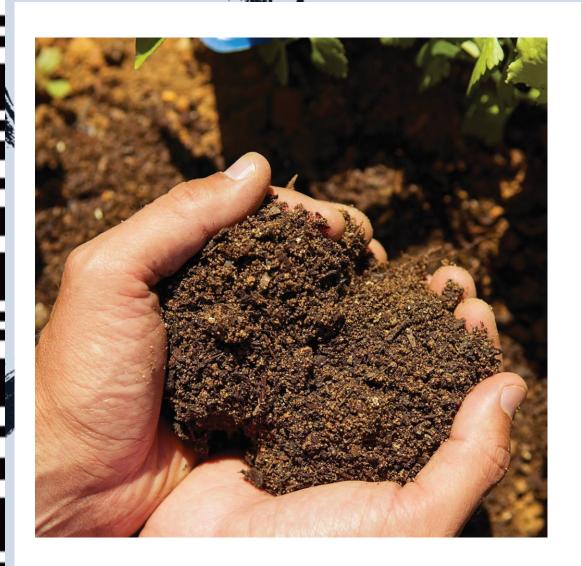
Recycling Resurgence

Getting Noticed

Refill Revolution







Naturally done

Naturally done

This trend area continues to be active with 16 new bio-based initiatives this month. Compostable and biodegradable packaging continues to be developed. We also continue to track several new bio-based material alternatives to plastic. There is a significant amount of compostable, biodegradable and bio-based examples both in development and coming to market.

Without established industrial composting systems in place in most markets, the compostable sector is at a turning point. Mass adoption will only really occur when the infrastructure to deal with the packaging is in place. Home composability is still relatively niche with most consumers not having the space or the will to participate. There are also concerns about compostable and biodegradable packaging contaminating existing recycling waste streams. Cost is also a significant barrier with the packaging sometimes costing brands and retailers three to four times the price of conventional plastic-based products. That is a substantial investment for a brand or retailer when compostable packaging's full benefits are still to be fully understood. We have yet to see many big brand examples introduced with the majority being small challenger brands looking for a sustainable point of difference. The bio-based packaging sector continues to expand at pace. Many of the initiatives listed are still in development and not yet on supermarket shelves.





Naturally Done

Japanese partnership to develop biocomposite

University transforms food waste into functional biopackaging

<u>Label manufacturer launches compostable adhesive</u>

Bubble wrap film is 100% compostable

Mycelium used to make biodegradable polystyrene

Start-up develops compostable packaging range made from natural ingredients

New packaging material includes coffee byproduct

Researchers turn crab shells into biodegradable batteries

Sneakers packaged in shoebox made from mushrooms

Australian start-up is making edible bowls, cups, and plates from food waste

Edible food wrap made from algae

Leading fruit processor to make all of its banana stickers home-compostable in Europe

New bio-based cling film is home compostable

Sustainable labels are made from sugar cane and grass

University develops packaging that can biodegrade on both land and in water

Sustainable adhesive start-up receives \$750k in funding

Japanese partnership to develop biocomposite

Two Tokyo-based companies have formed a partnership where they intend to develop a new biocomposite made from cellulose powder. Nippon Paper Industries Co., Ltd. and Mitsui Chemicals, Inc. intend to develop products such as packaging containers as well as building materials, household appliances and auto parts. The new biocomposite, made mainly from cellulose powder, is a woody biomass material. With this as its principal ingredient, this new composite will have the same mouldability as plastic. Also, it is reported that the composite's use of woody biomass as its main constituent will help to cut greenhouse gas emissions by minimising the use of fossil-fuel-derived virgin material when compared to ordinary petrochemical resins. The companies say that the partnership will see them tapping into their stable materials supply chains and leveraging the advanced materials manufacturing and development technologies they have cultivated over many years.



University transforms food waste into functional biopackaging

Researchers of the Nanobiopol team at the University of Alicante, Spain, are looking to optimise and patent a technique for extracting cutin, a biopolymer, from food waste. Cutin is one of two waxy polymers that are the main components of the plant cuticle, which covers all aerial surfaces of plants. The researchers say that they have become specialists in the extraction of these compounds. The removal technique is based on microwaves and ultrasound and are called sustainable techniques, because they use less solvent and less time, which means a lower energy consumption. From the skins of tomatoes, watermelons, apples and tomato seeds, the team obtained substances with antioxidant properties. The project has resulted in two improvements in products, two prototypes, which are film and trays for preserving ham. The work was financed by the European Union, and was made up of 17 partners from eight countries and its objective was to revalue food waste.



Label manufacturer launches compostable adhesive

German provider of labelling machinery and self-adhesive labels and materials Herma, has announced the launch of a new compostable adhesive designed for biodegradable label stock. The adhesive, known as 62e is also said to be insusceptible to migration. Herma says that labels featuring the adhesive are approved to be applied to fruit, along with dry, moist and fatty foodstuffs. Herma also says that two label materials certified in combination with these adhesives are HERMAextracoat and HERMAtherm Bio phenol-free. HERMAextracoat is a white adhesive label paper that is semi-gloss coated on one side and produced from FSC Mix Credit materials. HERMAtherm Bio phenol-free is a white thermal paper without a protective surface, for use in the weighing sections of food packaging lines. It is claimed to produce very good results when printed with EAN barcodes and other code systems.



Bubble wrap film is 100% compostable

German protective packaging specialist Storopack has launched AIRplus Bio Home Compostable. This new product is a sustainable new bubble wrap film that is partly bio-based and compostable in one. The film consists partly of renewable raw material starch. The company says that the film is TÜV Austria certified and can therefore be composted in the home and garden. It can be disposed of together with organic waste in domestic compost. According to the DIN EN 13432 standard, at least 90% of the film degrades within 365 days. Depending on the temperature and microculture in the compost, microbes and heat also completely convert the remaining 10% into carbon dioxide, water and biomass. The bubble wrap has a QR code printed on it so that the end recipients of the wrap can find out about disposal options in their country.



Mycelium used to make biodegradable polystyrene

Smush is an Italian start up that is making a 100% natural and biodegradable packaging alternative to EPS (expanded polystyrene). Using mycelium, the root system of fungi, the company transforms industrial agri-food by-products into raw materials for the production of solutions in the fields of protective packaging and thermo-acoustic insulation. The company says that Smush is fire and shock resistant, has excellent thermal and acoustic insulation properties, is lightweight, hydrophobic, and compostable. Production of Smush is also climate negative, 1kg of Smush produces -2kgs of CO2. Smush offers a bespoke packaging service and suggested uses include protective packaging for perfume and wine bottles, jewellery and electronics. At the end of its life cycle, Smush packaging can be easily broken apart by the end user and disposed of with compostable kitchen waste, or buried, and is an excellent fertiliser for cultivation.



Start-up develops compostable packaging range made from natural ingredients

ZNIKA is a Polish start-up made up of activists and specialists focussing on sustainable development and ecology. The team includes people with expertise in materials engineering and biotechnology. The business specialises in biopolymer materials, and because of this, the packaging is compostable. The company produces and distributes ecological packaging and plant labels for business. They use a number of different bioplastics, including PLA (polylactic acid), cellulose, bagasse (sugar cane starch), corn starch, recycled paper, and raw grass paper. ZNIKA is able to supply compostable mailers, product sachets, adhesive tapes, grape waste labels, and raw grass labels that they say consume 99% less water to produce than conventional labels. The composting process uses moisture, microorganisms and temperature to unfold the compostable packaging in a few or several weeks, depending on the type and thickness of the material. It is not clear if the packaging can be home-composted or industrially-sorted.



New packaging material includes coffee byproduct

US-based packaging company EcoPackables supplies apparel packaging to the e-commerce sector. They are now introducing a new material, which combines a proprietary blend of discarded coffee waste with polylactic acid (PLA) to make a compostable polymer that the company claims is 35% cheaper than "all existing solutions." By utilising discarded coffee waste, the footprint on this film is reduced by an additional 6% compared to its previous EP D42 Compostable Film, which is made from a blend of compostable polymers, partially comprised of discarded corn starch, cassava roots and sugar beets. The company also says that the addition of coffee waste means that this new film will have a slightly higher tensile strength. EcoPackables says that their compostable films are certified for both home and industrial compost, allowing for easier disposal. When decomposing, they break down into water, CO2 and organic biomass.



Researchers turn crab shells into biodegradable batteries

Researchers at the University of Maryland have found a way to turn crab shells into biodegradable batteries. Crab shells contain chitin, which can then be processed into chitosan. Chitosan can be made into an electrolyte for zinc batteries. Chitin is the building material that gives strength to the exoskeletons of crustaceans, insects, and the cell walls of fungi. The most abundant source can be obtained from the exoskeleton of crustaceans and is easily obtained from seafood waste. The zinc battery offers a cheaper and more sustainable alternative to lithium-ion batteries, though it is not currently as efficient as lithium for battery use. However, around two thirds of the battery can be broken down by microbes within just a few months. The new zinc and chitosan battery retains an energy efficiency of 99.7 per cent after 1,000 charge cycles, making it a suitable alternative for commercial use with potential longer term smart packaging applications.



Sneakers packaged in shoebox made from mushrooms

Streetwear designer Daniel Bailey, also known widely as Mr Bailey, is launching Mr Bailey Adidas Originals Ozlucent sneakers. As part of the product's radical look, he has chosen to go for a box made from mushrooms, while internally the trainers are encased in an inflated amniotic sac made of sugarcane and cellulose imitating the hood of a jellyfish. The box was designed with the help of research and development studio Black Ink Projects, while England-based Magical Mushroom Company grew and provided the biodegradable mushroom material, which directly replaces EPS (expanded polystyrene). The mushroom packaging is naturally water-resistant and, when broken into smaller pieces, decomposes in the ground within 45 days. It can also be mixed into food waste at the end of its life to be converted into a biogas alternative or electricity or fuel. Alternatively, if the customer wishes to keep the box it is designed to last for 30 years when kept under dry conditions.



Australian start-up is making edible bowls, cups, and plates from food waste

Uuvipak is an Australian start-up that is making edible bowls, cups, and plates from clean, upcycled organic food waste. The company sources its food waste from the remains of food processing, and is made up of citrus peel, coffee husks and the outer layers of cereals such as wheat. Using waste products from the food industry saves it either going to landfill or being burnt. Although Uuvipak products are edible, they can also be used for composting, and will also biodegrade in around four weeks in the right conditions, as they contain no plastic content. The company's products have been independently tested and guaranteed to be 100% safe for consumption and food contact. They have a shelf life of over a year. Their cups and bowls are also hot water, microwave and oven safe. The company has a Kickstarter funding page, where several different funding options with rewards are available.



Edible food wrap made from algae

Naama Nicotra is a product designer based in Tel Aviv, Israel. She has used agar, derived from algae, to create 'NakedPak', a series of edible, sustainable packaging solutions. Using algae as the main ingredient to form bioplastic, she produces a transparent, tasteless, two-dimensional sheet or a three-dimensional structure. Spices and sauces can also be incorporated into the NakedPak natural material, thus producing flavoured packaging that dissolves in boiling water. She has created five dishes using this material, naked soup, a vegetable broth with frozendried vegetables. Once rinsed and boiled, the vegetables return to their flavourful state. A curry dish, of which the wrapper is made of Thai vegetable curry and contains a serving of white rice. Once dissolved, the curry wrapper cooks with the rice. There is also a naked lasagne, naked spaghetti, and for dessert, naked ice cream, which is vanilla ice cream coated with raspberry-flavoured agar.



Leading fruit processor to make all of its banana stickers home-compostable in Europe

Following recent successful trials in France of homecompostable stickers, international fruit processor Del Monte will put biocompostable stickers on all of the bananas it sells in Europe by 2023. The trial was said to have been received very well by retailers and consumers. The company says that the labels meet all EU food safety regulations and have been approved for domestic recycling, as none of the label's components harms the environment. Del Monte sells several different banana types in Europe, including Cavendish, a smaller 'baby' variety, and plantains. The full roll-out will see the labels used in key markets like Germany, Spain and the Nordic countries. Del Monte bananas sold in Europe are sourced from Costa Rica, Guatemala and Ecuador and sold under various certifications – SCS Sustainably Grown, Organic, Rainforest Alliance, Fairtrade.



New bio-based cling film is home compostable

KM Packaging, based near Peterborough, UK, has announced an addition to its 'C' range of compostable products, with C-Cling, a home compostable cling film. C-Cling was developed in partnership with London-based Treetop Biopak. The companies say that this compostable cling film is clear, stretchy, and sticky and has the same performance as conventional PE (polyethylene) or PVC (polyvinyl chloride) cling film. As well as for home use, it is said to be ideal for the high-volume automated industrial packing of fruit and vegetables and other fresh produce on trays. It is also suitable for catering and restaurants. C-Cling is made from renewable resources such as corn starch and other bio-polymers. C-Cling film complies with EC food-contact Regulations 1935/2004 and 10/2011. Other products in the 'C' range of compostable products include shrink film, stretch film, tape, bags and netting.



Sustainable labels are made from sugar cane and grass

Kettering-based AM Labels has announced the addition of two new sustainable materials to its label portfolio. To meet consumer demand for more sustainable labelling solutions, they have introduced labels made from sugar cane paper, and also from grass. The new sugar cane paper labels are composed of 95% sugar cane fibres, offering an alternative to traditional wood-pulp papers. The remaining 5% is made of a mixture of hemp and linen. The sugar cane fibres within the material are a by-product of the production of sugar and would traditionally be disposed of. The grass paper labels are composed of 30% sun-dried grass fibre (hay) and 70% sustainably sourced pulp. The adhesive used has been formulated to include a high content of renewable, non-fossil derived materials, making it biodegradable and compostable. The allergen-free, vegan-friendly material benefits from a natural finish and is suitable for artisan food and drink labelling, in addition to cosmetics and organic products.



University develops packaging that can biodegrade on both land and in water

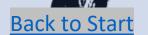
Researchers at the University of California have announced that after eight years, they have managed to develop biodegradable packaging that can decompose both on land and in water. The packaging comprises polyurethane foam and dissolves in seawater and land-based composts. While testing the new material, the team discovered that marine organisms colonise on the polyurethane foam and biodegrade the material back to its starting chemicals. Microorganisms, such as bacteria and fungi, live throughout the ocean and can consume the packaging's chemicals as nutrients. The research team exposed their polyurethane foam samples to tidal and wave dynamics and tracked for molecular and physical changes using infrared spectroscopy and scanning electron microscopy. Results of the tests showed that the material started to decompose in as little as four weeks.

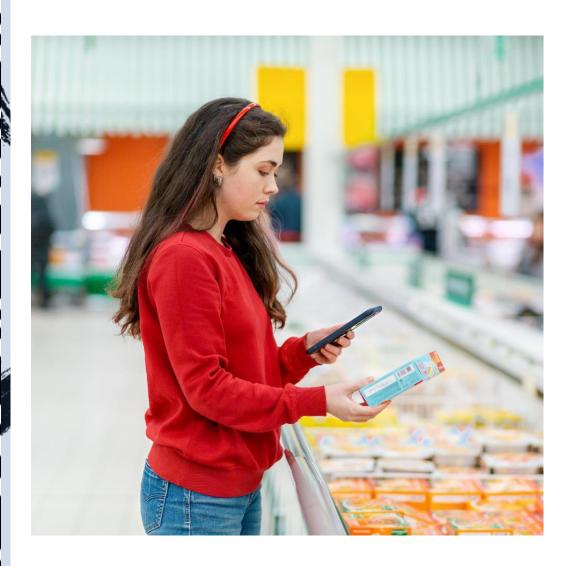


Sustainable adhesive start-up receives \$750k in funding

Nvirovate is a Seattle-based start-up that has developed a sustainable pressure-sensitive adhesive (PSA) made from soy. This adhesive is claimed to produce 70% fewer greenhouse gases and drive positive climate impacts throughout its supply and distribution chains. They have now raised \$750k to further develop the company. Organisations involved in the funding include VertueLab, who led this round through its Climate Impact Fund, and other investors included E8 Angels and Diversified Chemical Technologies. This adhesive has the highest natural content of any adhesive, over 93% and as high as 96.5%. The starting materials are renewable, inexpensive, and abundantly available. The process is claimed to create no Green House Gases (GHGs) or Volatile Organic Compounds (VOCs), uses no solvents or water, is a low energy process, resulting in transport costs 50% of competing PSA products. They are also fully compostable in standard waste disposal facilities.







Everyday Engagement

Everyday Engagement

Packaging that engages consumers and end users has an important role to play in the market and we continue to track some great examples. Many use smart and intelligent technology to reach their goals whilst others use pack shape and distinctive pack graphics to get the conversation going.

The ability to operate an ongoing dialogue with consumers is an important brand-building tool. Smart and intelligent technology such as RFID, NFC and QR codes are increasingly used for these purposes. The costs of the capability is coming down, opening up more opportunities for more everyday usage. Inevitably, the drive to deliver sustainable products influences the decision to use many of the technology-based examples as they often do not have an acceptable end of life plan. However, we are seeing more solutions that are easier to recycle and that is opening up the sector. The use of technology to engage with consumers also generates vital data insight opportunities for brands.





Everyday Engagement

NFC-tagged cap delivers information and prevents counterfeiting
Smartphone app allows customers to check that products are genuine
Cost-effective solution for chill chain temperature monitoring

NFC-tagged cap delivers information and prevents counterfeiting

German closure manufacturer KISICO and digital technology provider Colysis have collaborated to bring to market a smart and secure closure for medical products equipped with an NFC tag. The NFCap permits contactless communication with NFC-enabled smartphones. A wide array of information can be stored on the chip contained in the cap. Relevant apps can be used to verify the authenticity of the product. In addition, tech-savvy audiences will use this communication opportunity between product cap and smartphone to access information stored on the chip such as links to websites, product specifications or other specially developed apps. The chip is not visible from the outside, the caps retain their original design, and no retooling is required. Also, the chip never comes in contact with the bottle contents. Colysis' technical infrastructure can remind patients to take their medication, and can also confirm a product's authenticity and retrieve package leaflets and information about the product.



Smartphone app allows customers to check that products are genuine

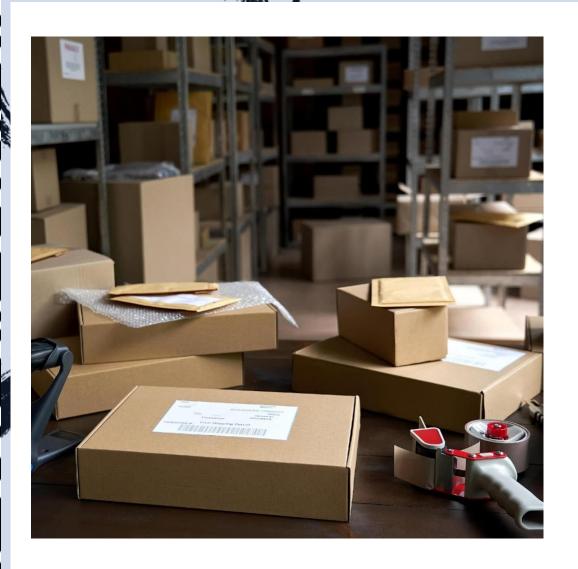
CertiEye is an innovative smartphone-based solution that its Hong Kongbased developer Infotoo International says is substantially superior to the existing technologies used against counterfeiters worldwide. CertiEye is a free mobile application that is used to scan a printed mark on packaging and allows the end consumer to authenticate products using their smartphone. There is no need to buy and install any extra devices. CertiEye is a simple application that can be downloaded from the App Store or Google Play. The scannable printed mark can be either printed onto products by CertiEye themselves or by a nominated printer, across a range of different materials and substrates. CertiEye requires no extra printing equipment or taggant in the printing process. The company says that they can provide consultation services and guidelines in helping clients to integrate CertiEye into their existing printing workflow.



Cost-effective solution for chill chain temperature monitoring

Varcode is an American company focusing on logistics, transportation and supply chain solutions. They have recently launched a new product called the Varcode Smart Data Solution (VSDS). The VSDS simplifies and cost-effectively allows cold-chain monitoring from pallet down to the individual product level. Used with their Smart Tag, which with the flexibility of its size, can be placed on any product and scanned through a mobile app, this makes it easy to collect data anywhere. The system uses IOS and Android apps to make scanning even at the consumer level for D2C (direct to consumer) businesses an operational reality. When used alongside their time-temperature recorders, cold chain logistics professionals can have full visibility at all stages of the shipping process. Varcode's manufacturing temperature and tracking applications can even send automated alerts when a shipment is at risk of failing to maintain temperature.





The Online Surge

The Online Surge

The e-commerce market has demonstrated strong growth in recent years and its increasing prevalence is shaping packaging innovation. The COVID-19 pandemic has given the channel a significant boost with the demand for online specific packaging continuing to be important.

The growth of e-commerce is significant. It received a significant shot in the arm due to the COVID-19 pandemic as swathes of consumers worldwide are compelled to switch from their local bricks and mortar stores to buying directly from their mobile, computer or tablet screens. It has been reported that a notable number of consumers were online shopping for the first time, and it's fair to say that many won't go back to the same physical shopping frequency again. Shopping and packaging's role has changed forever. As the market begins to scale, there are increasing opportunities for brands and retailers to offer packaging solutions tailored first and foremost for this channel rather than being replications of the packs bought physically instore. Packaging designed for the e-commerce channel does not need to have the same security measures. The purchase decision is on a screen so bright on pack messaging is not necessary, and packs do not need to be explicitly designed to be attractive for the supermarket shelf.





The Online Surge

Online store to test compostable shipping bags

New technology turns fallen leaves into paper

Reusable mailer launched as alternative to single-use packaging

New model to keep clothes out of landfill created by reusable packaging startup

Reusable pots developed for online grocery business

Online store to test compostable shipping bags

German online store OTTO is to conduct a pilot test on fully compostable, biodegradable shipping bags. The bags, which will be supplied by Hamburg-based start-up traceless, are made of grass paper and a bio-based plastic substitute sourced from plant waste. It is hoped that the new bags will replace the company's current recycled plastic bags. The company says that the bags will degrade in around two weeks. Initially, OTTO will be trialling 5,000 shipping bags, with the primary objective being whether the bag protects the item inside. The bags are also required to be opaque, water-resistant, and tear-proof. OTTO uses shipping bags predominantly for textiles and robust small items, such as vacuum cleaner bags or razor blades. Customers who receive one of the 5,000 bags on the pilot test will not be informed in advance to get a more authentic and honest response when asked for their opinions.



New technology turns fallen leaves into paper

A Ukrainian start-up, called Releaf Paper, has launched a range of paper bags online that are made from fallen leaves. In a patented process, cellulose is extracted from the leaves, which is then processed into paper, and ultimately paper bags. The bags are available on their newly launched website, which is aimed at small-to-medium sized businesses, and a range of nine different sizes is available to buyers both in the EU and the UK. Releaf says that their bags are very natural, biosafe, stylish and strong – the largest one supports up to 8 kgs of weight. The technology employed allowed them to reduce CO2 emissions by 78% during the production of the material. The bags are said to decompose within 60 days. Expected customers include offline and online stores that sell cosmetics, clothes, handmade goods, organic food, and other consumer goods.



Reusable mailer launched as alternative to single-use packaging

Colorado-based EcoEnclose are sustainable packaging suppliers that serve ecommerce businesses. They have now launched the ReEnclose Mailer, a reusable shipping solution. Companies can ship orders in these durable fabric ReEnclose Mailers. Customers then return the mailers. back so they can be cleaned and reused for subsequent shipments. They are made with 100% recycled fabric, available in various sizes, thicknesses, and colours, and can be sent back to EcoEnclose for recycling when they are no longer usable. Customers also have access to an online 'Reusable Mailer Comparison Calculator', which helps brands determine how many times their ReEnclose Mailers must be reused to achieve the same carbon emissions as an equivalently-sized single-use poly mailer. The company says that the ReEnclose Mailer is an excellent, sustainable packaging solution for brands with high return rates, such as monthly subscription services, clothing rental brands, and companies that take back clothing and goods for donations or repair.



New model to keep clothes out of landfill created by reusable packaging startup

Olive is an American startup that was launched in 2021. Its initial aim was to eliminate waste from online shopping by enabling consumers to order from multiple sites and get products in one reusable package. According to the company, with the new model, customers place an order with a brand that offers "Olive waste-free delivery" at checkout. Olive partners with the brand to pack, ship and deliver the customer's order in Olive's reusable packaging. If the customer wishes to return the item, Olive picks it up and returns it to the retailer. If they wish to consign them, they put the items in the same packaging, the items are picked up and sold by Linda's Stuff, to be sold on eBay. Most items sell within 30 days, and the customer and Olive split the sale proceeds.



Reusable pots developed for online grocery business

London-based design studio Blond has collaborated with online refillable grocery store Dizzie (formerly Good Club) to develop a range of reusable and recyclable pots. The pots come in three sizes, each size differing by a third, meaning that three small pots is equivalent to one large one. The lids are embellished with a groove detail to assist in nesting, both during delivery and in storage. Designed to be used as part of a closed loop system, the pots are intended to be collected from customers, washed and returned for reuse, and it is estimated that they can be reused 200 times before going back to the manufacturer to be broken down into their raw materials and made into new pots. The pots are made of a biocomposite containing wood fibres and bio-PP, are said to be 98% renewable, and are designed to utilise warehouse space more effectively than standard packaging.





Making Life Easy

Making Life Easy

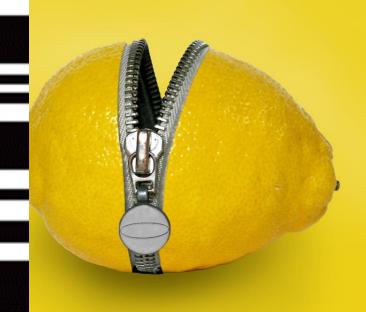
Packaging that is easy to use will always have a place in the packaging innovation schedule. With the focus very much on sustainable solutions, it is important that packaging still delivers the necessary functional requirements and packaging. Easier to use packaging will always create a point of difference in the market and often meets the needs of a growing senior consumer segment.

Packaging that has added functionality, that is easy to use and makes life easier for consumers continues to be popular. We will continue to see many new examples come through the innovation funnel. With most of the development focus on sustainability, it is essential that brands and retailers can still deliver pack formats and solutions that meet an unmet functional need to make the consumer experience easier and more pleasurable. Plastic reduction is a primary focus for the majority of brands and retailers and there are signs this is having an impact on pack functionality in the market. We have tracked a couple of recent examples in the cheese sector where the resealable functionality has been removed to achieve packaging reduction targets. These isolated examples might just be a sign of things to come. However, the worldwide ageing marketplace means an increasing need for packaging that is easy to open and close.



Making Life Easy

Patented paper coffee cup has integrated paper lid
Cap has built-in spoon for accurate dosing
Patented tube design chosen for anti-aging neck serum
Board tomato pack wins European Carton of the Year
Classic candy launched in five compartment 'twist' pack



Patented paper coffee cup has integrated paper lid

Hong Kong-based Choose Planet A has announced the launch of The Good Cup, a patented paper coffee cup that features an integrated lid. The Good Cup was developed to meet consumer requirements for more sustainable options while also cutting costs for producers. The Good Cup is designed to be manufactured on the same machines that produce traditional paper cups. It is made from 100% certified home compostable paper and it is free from the commonly used PE (polyethylene) coating. The company says that usually more sustainable options can be two to three times more expensive than traditional options. In contrast, The Good Cup can offer savings, thanks to its integral lid. This enables a 40% reduction in storage space, transportation volume and carbon footprint as compared to the classic coffee cup, which in turn, saves companies money.



Cap has built-in spoon for accurate dosing

Spoonfuls is a New Jersey-based company that has launched a cap designed for use with spouted pouches that features a patented built-in spoon developed for feeding, dosing and measured delivery of the contents. The consumer simply flips down the spoon, then gives the pouch a squeeze to dispense the product. Once done dispensing, the consumer flips the spoon back up to seal it. Spoonfuls has a utilitarian and ergonomic design, is easy to dispense with one hand, and is simple to open and reseal. Spoonfuls is made from recycle-ready PP monomaterial and has an omniphobic and antimicrobial coating meaning no residue/bacteria free. Potential applications suggested by Spoonfuls includes foods – purees, yoghurts, specialised nutrition, herb cooking pastes. nutraceuticals, supplements, OTC medicines, pet supplements, CBD and cannabis edibles. It is available in a number of dosage sizes, and can be customised depending upon the customers' requirements.



Patented tube design chosen for anti-aging neck serum

New York-based StriVectin is a manufacturer of anti-ageing products, including moisturizers, serums and eye creams. While looking for a packaging solution for their Tightening Neck Serum Roller neck care product, they decided on Cosmogen's patented Squeeze'n Roll tube with applicator. Paris-based Cosmogen claim to be experts of innovative application solutions for cosmetics. The Squeeze'n tube's ON/OFF system allows to dispense the formula, to apply, massage and redefine the contour thanks to its cooling metal tip, while also guaranteeing the airtightness of the product. The applicator is also washable with soapy water. The Cosmogen Squeeze'n range is available in recycled and recyclable material, and also has a removable applicator that can be reused, then sorted and recycled at the end of life. Cosmogen's Squeeze'n Roll tube is available in 7 to 20ml capacities and can be decorated in various print finishes.



Board tomato pack wins European Carton of the Year

A tomato pack, made from board supplied by Finnish board and pulp manufacturer Stora Enso, and designed and converted by Rutgers Printing & Packaging Solutions, based in the Netherlands, has won the prestigious "Carton of the Year" award at the annual European Carton Excellence Award. The carton was described as a 'masterpiece of elementary and sustainable design, with a perfect balance between maximizing the visibility of the product while maintaining rigidity'. The solution is easily reclosable with a "click", even after multiple uses. It has been estimated that for 100,000 cartons, approximately 6,700 kilos of plastic are avoided. The folding cartonboard boxes are easy to flatten after use and can be disposed of in the paper and board recycling stream.



Classic candy launched in five compartment 'twist' pack

Ferrara Candy Company, owners of the classic American candy NERDS, are known for its dual-compartment box that allows consumers to mix flavours. They have now launched a new product, called NERDS Twist & Mix, with the help of Missouri-based rigid packaging manufacturer TricorBraun. TricorBraun designed a circular-shaped, five-compartment pack for consumers to mix and match their perfect combination of NERDS Candy flavours, including Strawberry, Orange, Watermelon, Cherry, and Lemonade. The packaging comprises a polypropylene base and lid design for durability while using a clarifier to make it possible for the consumers to see the flavours. Both the lid and base are recyclable. The product launch has been much better than anticipated. Consumers have been posting about their experiences across social media platforms like Instagram and TikTok, excited to share their delight in mixing unique combinations of flavours, including up to all five at once.





Materially Changed

Materially Changed

The packaging continues to see a lot of change of materials driven largely by sustainability objectives. Plastic replacement is still top of the agenda for many brands and retailers as they look to switch out of the material to solutions that may offer a better environment footprint or at least be better received by anti-plastic focused consumers. We have 19 initiatives this month.

ThePackHub continues to report many instances of brands and retailers switching primarily from plastic to other often paper-based alternatives. Some, but not all, support the move with positive evidence of these changes' environmental impact. The reality is that we are experiencing a cycle of high change where, in some cases, recyclable plastic is being replaced with other materials because consumers believe this as the right thing to do from an environmental perspective. However, not all examples stand up to stringent environmental scrutiny. Most of the material changes have often come about following significant investment in machinery and new processes. These switches are for the longer term, and any reversals not likely in the short to medium term.





Materially Changed

Dairy giant cuts 500 tonnes of virgin plastic annually

Partnership will see distribution of soluble polymer in Europe Heat-sealable paper can replace plastic-based packaging Norfolk gin producer introduces paper-based bottle Researcher creates wood-based alternative to single-use plastic Plastic-free takeaway meal box developed Board-based alternative to shrinkwrap for beverage bottles Cosmetic pencil has a plant-based outer barrel Confectionery manufacturer introduces paper pouch Laundry products move from plastic to board packaging Two piece paper-based alternative to PE shrink film for PET multipacks Finnish paper maker launches new barrier papers for food use Handmade desserts move from ceramic to glass Italian chocolate giant introduces recyclable packaging with 40% less plastic Leading adhesive manufacturer launches plastic-free blister pack Austrian bacon producer moves to mono-material packaging Paper-based cushioning seen as sustainable alternative to bubble wrap Redesigned peanut packaging reduces plastic use by 8% Finnish companies form partnership to promote sustainable plastic alternative

Partnership will see distribution of soluble polymer in Europe

UK-based manufacturer of Hydropol, Aquapak, has formed a partnership with Italian distributor of plastic and rubber materials, Resinex. Resinex will distribute Aquapak's Hydropol exclusively as a barrier film in all European countries, except Italy, Spain and Portugal. Hydropol is made from Polyvinylalcohol (PVOH) – the base plastic commonly used for dishwasher tablets, ingestible pill casings and soluble stitches. It is biodegradable, compostable, non-toxic to the environment and marine-safe, ensuring responsible end-of-life if disposed of properly. Hydropol enables product design to provide essential functionality while increasing recycling and reducing plastic pollution. Aquapak says that the barrier packaging market in Europe is worth £430 million, and Resinex has committed to purchasing a minimum of 8,000 metric tons of Hydropol over the next three years based on annual targets. The EU Plastics Strategy requires all packaging to be recyclable or reusable in an economically viable way by 2030.



Heat-sealable paper can replace plasticbased packaging

Cortec Corporation is a New York-based company specialising in antirust and anti-corrosion materials. They have now announced the launch of EcoShield Heat Sealable Paper, which they say can be easily heat-sealed and can replace equivalent plastic-based packaging materials. EcoShield has an adhesive coating that is water-based and heat-sealable. Cortec says that when two sides with the special coating are placed against each other, effective sealing seams are formed when the paper is heated, even with simple sealing tools for home use. They also say that the coating is harmless. It is recyclable, and the paper, which can replace, for example, sealed bags or plastic sleeves, can be sorted in customary recycling streams for paper. The material is said to be suitable for the wrapping of a large number of products, especially smaller units of bulk items in DIY, metal components, home and garden items, and office supplies.



Norfolk gin producer introduces paperbased bottle

Two businesses based in the East Anglia area of the UK have collaborated to bring an exclusive paper-based bottle of gin to market. Gyre & Gimble are producers of Coastal Gin, which is inspired by the Norfolk coastline and is distilled using locally foraged samphire and lavender. They have partnered with wine retailer Naked Wines as part of their ongoing investment in sustainability and its drive to reduce carbon emissions. The bottles, which are made from 94% recycled paper, are 100% recyclable and five times lighter than a standard glass bottle. The bottles are manufactured by Frugalpac, based around 40 miles away in Ipswich, which helps to reduce the carbon footprint to six times smaller than a traditional glass bottle. Naked Wine has announced that by the end of 2022, more than 20% of its wine bottles will be lighter in weight. Gyre & Gimble Coastal Gin in a paper bottle is available now at nakedwines.com. The Angel membership price is £26.99 (US\$32.21).



Researcher creates wood-based alternative to single-use plastic

A researcher from the University of British Columbia has developed a biodegradable cellulose film that looks and behaves like plastic. The scientist, Dr. Feng Jiang uses wood fibres sourced from forest waste, which is then broken down using a solution of cold sodium hydroxide combined with mild mechanical blending. The sodium hydroxide is then recycled. The result is a translucent, strong and water-resistant film. Although other cellulosic films have been developed previously, the method created by Dr. Jiang is the first to use small amounts of energy and chemicals in the manufacture. The film can be made into coffee bags or chip/crisp bags, pouches for cereal or frozen fruit, or a protective covering like bubble wrap or envelopes. After use, the cellulose film can be buried in the ground or disposed of in an organics bin, where it will break down within three weeks.



Plastic-free takeaway meal box developed

Researchers from the Kaunus University of Technology in Lithuania say that they have developed a takeaway food box that is plastic-free, and solves common issues such as leakage, cooling and size. Their solution to these challenges is a cardboard box with a very thin layer of Teflon. They claim that the Teflon layer is less than 10% of the packaging, and therefore after use can be recycled with other paper and board items. They also say that the packaging and contents can be reheated at 180°c for 20 minutes. The researchers say that as the pack is made from cardboard, it can be recycled up to 6-7 times. On the bottom of the packaging, there is text indicating that it needs to be recycled as cardboard. The Teflon coating makes the box easy to clean after usage, and it is suitable for composting afterward.



Board-based alternative to shrinkwrap for beverage bottles

British multinational packaging company DS Smith, has joined forces with German specialist beverage machine manufacturer Krones AG to bring a board-based bottle multipack solution to market. The initiative, called EcoCarrier, has been developed as an alternative solution to shrink wrap for PET (polyethylene terephthalate) bottle multipacks. EcoCarrier is a two-piece solution which consists of a corrugated top piece to secure the top of the bottles, features a carrying handle, and a paper band around the body of the bottles. EcoCarrier is said to offer substantial benefits in terms of Carbon footprint of up to -71%, is 100% recyclable, manufactured from renewable sources and recycled content. It is claimed to be a commercially attractive solution, easy to carry and to recycle. The concept has been designed with DS Smith's Circular Design Metrics in mind and delivers a much-improved solution compared to PE-based shrink wrap solutions.



Cosmetic pencil has a plant-based outer barrel

A collaboration between Finnish packaging material manufacturer Sulapac and German Cosmetics company Schwan has resulted in a cosmetic pencil with a plant-based outer barrel. The material used to make the pencil barrel, Sulapac Flow v1.8, was created using plantbased binders and sawdust from industrial side streams. The pencil, known as 'TheBetterBarrel' is made with 72% bio-based material, from side-stream wood chips and natural binders. It replaces virgin plastic with a material that leaves no permanent microplastics. The two companies created lip liner and eyeliner pencils with sustainable barrel materials that can withstand the volatile makeup product held within the material. The beauty line "TheBetterBarrel" is pegged as satisfying consumer desire for green cosmetics without compromising on its performance, quality or style. Schwan says that their clients have increasingly demanded sustainable products, especially from their Gen 7 and Millennial consumers.



Confectionery manufacturer introduces paper pouch

Loacker is a confectionery manufacturer based in Northern Italy. They are well known for their wafer-based and chocolate snacks. The business has announced that they are launching their Loacker Gardena Mini Mix pouch 221g Duty Free product in a paper pouch format. The company says that the new paper pouch structure will be introduced during September 2022. Loacker says that the Mini Mix Pouch is ideal for sharing or snacking on the move. The pouch contains 26 Gardena Mini bars in three flavours - Hazelnut, Chocolate, and Coconut - each of which is covered in milk chocolate. As part of Loacker's ongoing commitment to plastic reduction, they have set themselves the goal of reducing plastic usage by 15% year on year. Recently, they moved to a thinner packaging film and saved approximately 10 tonnes in materials as a consequence.



Laundry products move from plastic to board packaging

Grumme is a Swedish brand owned by Orkla that produces laundry and cleaning products. It has now moved its laundry detergent and fabric conditioner into board packaging. The cartons are similar to those used for milk cartons, and by moving to this format, the company has estimated that it will save over 40 tonnes of plastic per annum. The company says that the new packaging means a drastic reduction in fossil plastic consumption, as both the cardboard material and the closure are wood-based and come from Nordic forests. Production of the new format takes place with 100% renewable energy in Orkla's production facility. The new packaging means not only reduced plastic use, but also a reduced number and more efficient transport, as the cardboard packaging has a reported improved pallet efficiency by 77%.



Two piece paper-based alternative to PE shrink film for PET multipacks

Global packaging group Mondi has launched an alternative to PE (polyethylene) shrink film for beverage multipacks. The new board and paper-based product, called Hug&Hold, is composed of two parts. The first element is a patent-pending sleeve made of 100% kraft paper that wraps around the bottles to hold them securely. Made from Advantage SpringPack Plus, it offers high tensile strength and can withstand enough weight to strap and stabilise the bottles during transportation. The second element is a corrugated clip which holds the bottles around the neck. An optional integrated handle means a bundle of bottles can be carried and transported easily. The simple separation of single bottles from the pack adds to the convenience of the design. The innovative solution was devised in-house by Mondi's specialist teams and has been validated for automated packing processes. Hug&Hold is available for 0.5l up to 1.5l PET bottles in bundles of six or four.



Finnish paper maker launches new barrier papers for food use

Finnish paper makers UPM Specialty Papers has announced the launch of two new barrier papers designed for dry and frozen foods packaging. The papers, called UPM Confidio and UPM Confidio Pro, are suitable for both primary and secondary packaging applications. Both barrier papers have both moisture and grease resistance, are heat-sealable and can be recycled easily in conventional recycling streams. UPM says that Confidio Pro offers superior print results through all printing methods, resulting in a saturated outcome with sharper and more vivid colours. UPM says that the development of UPM Confidio and UPM Confidio Pro was largely based on feedback from and collaboration with one of the company's partners, the leading Finnish food and bakery company Fazer. Both papers are FDA and BfR (German Federal Institute for Risk Assessment) compliant and safe for direct contact with food and are suitable for dry, fatty and frozen food products.



Handmade desserts move from ceramic to glass

London-based Pots & Co are manufacturers of handmade desserts. As part of the company's commitment to sustainability, they have decided to move the packaging of their products from ceramic pots to ones made from 100% recyclable and reusable glass. The new glass pots will be embossed with the Pots & Co logo, and after use, can either be reused or recycled with other glass items. The company says that as well as the glass pots being more environmentally friendly, the move has reduced production costs, meaning that the company has reduced the prices of their products. The Lemon & Lime Posset and Salted Caramel & Chocolate Ganache has been given a reduced RSP of £1.99 (previously £2.20). In comparison, its Limited-edition Summer Berries and Mascarpone will drop to £2.15 (previously £2.30). The glass pots will be available in Tesco and Ocado from 12 September, followed by Sainsbury's (14 September) and Waitrose (21 September).



Italian chocolate giant introduces recyclable packaging with 40% less plastic

Italian confectionery giant Fererro has announced that it is relaunching its classic Ferrero Rocher 200g pack in recyclable packaging, which also contains 40% less plastic. The 200g pack has a new visual identity as well, with a refreshed logo that has been enriched with two golden circles said to resemble the shape of a praline. Ferrero's R&D team researched and tested over 29 different plastic resins in collaboration with leading materials expert Milliken. The result is a new packaging that will gradually reduce plastic consumption and its environmental impact, while keeping the packaging transparent. The new pack is made of PP (polypropylene) which offers greater recyclability, and the company has estimated that once the rollout of the new packaging is complete, the entire Ferrero Rocher product range will reduce the amount of plastic used by 10,000 tonnes annually.



Leading adhesive manufacturer launches plastic-free blister pack

Henkel, owners of the iconic Pritt glue stick, are removing the plastic element of its blister packs and replacing it with recycled board. The new board-based blister packs will be made of board that is made from 85% recycled paperboard and is 100% recyclable. The move is part of the company's sustainability strategy, and the change will remove 1,000 tonnes of plastic per annum. The new sustainable packaging also features a QR code which will take consumers to their website and which will offer a wide range of detailed information as well as various entertainment resources. Users, for example, can interact with Pritt characters in an online world within their own living room or meet Pritt in augmented reality with a 360° experience. In addition, the website offers information on the sustainable packaging and natural ingredients of the brand's glue sticks, as well as creative craft ideas.



Austrian bacon producer moves to monomaterial packaging

Global sustainable packaging manufacturer Mondi, has helped Austrian bacon producer Handl Tyrol to pack their bacon in a more sustainable, recyclable mono-material. The material chosen was Mondi's polypropylene (PP) high barrier packaging solution, which was shortlisted for the Green Packaging Star Award 2022. The film is used in a vacuum packing format, and is said to give excellent performance in order to prevent food waste. It also has an eye-catching 'wood effect' that has been designed to look like a wooden chopping board, providing instant on-shelf appeal and brand recognition. Mondi collaborated closely with Handl Tyrol, employing its collaborative EcoSolutions approach to ensure the packaging is best for the manufacturer, product, end user and the environment. Mondi's mono-material PP film is said to work within existing recycling guidelines for retailers across Europe.



Paper-based cushioning seen as sustainable alternative to bubble wrap

3M, the American science-based technology company, has launched a new packaging innovation under its Scotch brand. Scotch Cushion Lock Protective Wrap was inspired by Kiragami, the Japanese art of papercutting and folding. Cushion Lock is an expanding paper wrap made from 100% recycled paper that offers nested protection to immobilize packaged items while on the move, no matter how bumpy the transit process may be. It is said to be a sustainable alternative to plastic bubble wrap. Cushion Lock tears by hand, and its advanced self-locking technology readily fastens to itself; no scissors or tape is needed to cut and secure. The user pulls Cushion Lock from the roll to expand it, wraps it around the item in a 360-degree fashion, tears the paper off the roll by hand, and places the wrapped item into the box. Each 1,000-foot roll of Cushion Lock offsets up to nine pounds (4.1kg) of plastic compared to traditional bubble wrap.



Redesigned peanut packaging reduces plastic use by 8%

Minnesota-based Hormel Foods, owners of America's number one selling peanut brand Planters Nuts, has redesigned the packaging for its 16 ounce (453 g) PET (polyethylene terephthalate) jars. The new jar has an 'hour-glass' appearance to it, having been designed to more closely resemble the shell of a peanut. The redesigned jar also contains 8% less PET than the previous incarnation, making it more sustainable, and saving around 220 tonnes of plastic per annum. The company says that maintaining the same amount of peanuts in the redesigned bottle was a key challenge. Along with the bottle's physical change, the brand redesigned the label graphics. The new labels spotlight one supersized peanut rather than a pile of peanuts, so snack-nut fans can easily see the detail and appetite appeal of each respective flavour. The new bottle is rolling out nationwide in three product varieties, salted, honey roasted, and sweet & spicy.



Finnish companies form partnership to promote sustainable plastic alternative

Two Finnish companies have formed a strategic partnership to promote a paper-based product with special properties. Walki, who are producers of paper and board-based products, have joined forces with Paptic, which is described as a next-generation sustainable packaging material made of renewable wood fibres. Plastic-free Paptic materials offer a unique combination of sustainability, strength, and positively distinguishable haptic properties. The materials were developed to reduce the use of plastic in packaging, and with Paptic oil-based materials can be replaced in numerous packaging applications. The two partners intend to develop new applications and new uses with barriers, heat-sealing techniques and specific printing. Paptic was founded in 2015, and the technology is based on 'foam forming', using modified original paper-making technology. 'Foam forming' is said to play on the orientation of the fibres to give the paper a high resistance to tearing.



Dairy giant cuts 500 tonnes of virgin plastic annually

Müller Milk & Ingredients UK has announced that it has converted 75% of its cream volume to rPET (recycled polyethylene terephthalate) pots, which are made from 82% recycled plastic and are 100% recyclable. Müller says that the move will remove 500 tonnes of virgin plastic from its annual production of cream pots. The new pots have been rolled out across Müller's 150ml and 300ml cream range and join its fresh milk bottles, which have been 100% recyclable for many years and contain 30% recycled material. The pots were supplied by plastic packaging manufacturer Faerch. Müller is also developing packaging solutions for the remaining 25% volume for 2023. The new pots were developed in a close collaboration between the two companies, to ensure the product had the highest level of recycled content possible, whilst maintaining the overall performance of the packaging through the supply chain.





Protect and Preserve

Protect and Preserve

Solutions that help to extend shelf life, reduce food waste and protect contents have environmental as well as cost-saving implications. We continue to track many new initiatives in this area. The COVID-19 pandemic saw a rise in supply chain-based examples that aim to improve the safe distribution of vaccines.

The prevention of food waste continues to be a priority, and we are tracking many examples of packaging formats that have been designed to reduce the wasting of product. There are widely reported statements that between 33-50% of all food produced globally is never eaten, and the value of this wasted food is valued at over \$1 trillion. Technology is playing its part with many recent developments using technological know-how to help detect and communicate changes in the state of food. Packaging has a key role to play in ensuring that produce and food waste is minimised. In this section, we focus on examples that improve the environment by increasing shelf life or reduce waste. The section also includes examples of packaging that protects the product through improved secondary packaging solutions that take on board environmental or cost concerns.





Protect and Preserve

Cannabis packaging solutions are eco-friendly, sustainable and child proof
Inspection system measures shape and wall thickness of transparent plastic packaging
Masterbatch solution reduces oxygen and water vapour transmission rates
Durable coating uses natural oils to kill microbes
Award-winning design for paper-based container for lithium-ion batteries
Interactive bottle cap developed to help reduce food waste
High barrier recyclable paper developed in Japan
High barrier compostable film launched for snacks

Cannabis packaging solutions are ecofriendly, sustainable and child proof

RXDco is an innovative Jersey-based manufacturer of premium cannabis packaging. RXDco's Atid, PearlLoc, and Eco-Pro are paper-based biodegradable, recyclable, child-resistant packaging solutions. Atid is unique to RXDco; it is patented and seen as a great choice for those seeking to keep their flowers and edibles fresh and protected. PearlLoc are premium vape cylinders and boxes available with extensive branding customisation options. Eco-Pro is an elegant 100% paper-based vape boxing option that is sustainably manufactured in the USA. Due to the nature of cannabis, there are stringent laws governing its marketing and packaging. Among the many regulations already in place, two of the newest states to legalise cannabis, New York and New Jersey, have taken things a step further by placing mandatory requirements on utilising what they define as environmentally sustainable packaging. For example, in NY, a cannabis licensee must ensure their packaging is made from at least 25% post-consumer waste.



Inspection system measures shape and wall thickness of transparent plastic packaging

German optical inspection systems specialists MABRI.VISION has announced the launch of the new MV.SENSE b1i optical system. This new inspection system measures the shape and wall thickness of transparent plastic packaging. Performed on the process line at production speed, these non-contact measurements enable 100% inline inspection of multi-layered packaging material. The new system is based on the principle of low-coherence interferometry, which MABRI.VISION also employs on its MV.SENSE inspection platform. In contrast to ultrasonic systems, low-coherence interferometry systems do not require a coupling agent. Moreover, as only infrared light of low intensity is used, no radiation protection measures have to be taken. The company says that even the thicknesses of thin barrier films can be measured with utmost precision. The outstanding measuring accuracy of the system helps users to enhance process security and cut the material costs of their production.



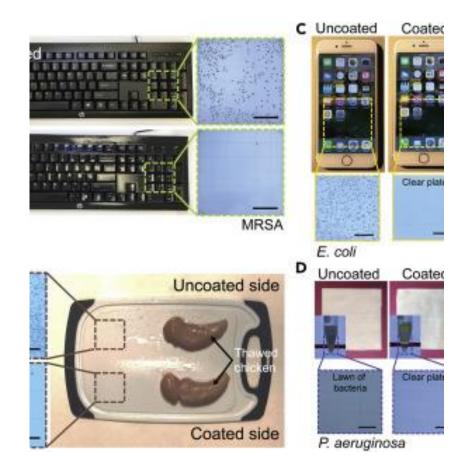
Masterbatch solution reduces oxygen and water vapour transmission rates

Ampacet is a global supplier of masterbatch solutions headquartered in the US. They have announced the launch of Ampacet Gastop-Flex, a masterbatch offering designed to reduce gas transmission rates in flexible applications. One of the main functions of packaging is to protect foods and products from permeability to oxygen and water vapour. Ampacet claims that Gastop-Flex reduces the transmission rates of oxygen and water vapour by up to 60% of the initial value. Ampacet Gastop-Flex masterbatches allow the manufacture of high-barrier packaging, keeping the EVOH (ethylene vinyl alcohol) content below 5%, in compliance with circular economy design guidelines. They also allow the weight of general-use packaging structures to be reduced without affecting water vapour permeability. Ampacet Gastop-Flex is designed for use on both single and multilayer barrier and general-purpose polyethylene films on conventional and MDO (Machine Direction Orientation) film stretching equipment.



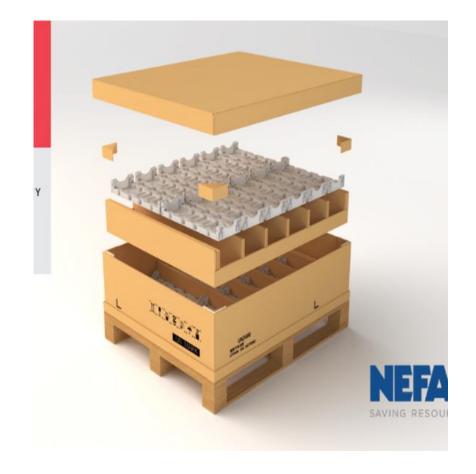
Durable coating uses natural oils to kill microbes

Researchers at the University of Michigan have developed a durable coating that kills harmful microbes on frequently touched surfaces. The material is made from commonly used polyurethane plastic, combined with tea tree oil and cinnamon oil. All of the ingredients are already known to be safe for humans. While still in liquid form, the substance is either brushed or sprayed onto items such as door knobs or touchscreens and could have packaging applications. Once it dries, it forms a tough, transparent coating which is claimed to be highly effective at killing bacteria and viruses. Some of the tea tree and cinnamon molecules are cross-linked to the polyurethane molecules – keeping them permanently in place within the plastic matrix – while others are free to move between that matrix and the surface of the coating. Also, once the effectiveness decreases as the oils begin to evaporate, the coating can be "recharged" simply by wiping it with fresh tea tree and cinnamon oils.



Award-winning design for paper-based container for lithium-ion batteries

Nefab is a Swedish manufacturer of containers that specialises in shipping containers for lithium-ion batteries. They have now been announced as winners of the German Packaging Awards of 2022, for their EdgePak Straw packaging solution. The EdgePak Straw was developed for an importer of lithium-ion batteries from China. The customer was looking to move away from the expanded polypropylene (EPP) trays they were currently using to transport battery modules from China to Europe. The EPP tray's recycling cost and environmental impact were both unacceptable to them. The alternative solution is almost entirely made of paper, based on EdgePak Straw, corrugated and paper pulp fitments. Despite being fibre-based, the packaging is said to be capable of holding products of over 350 kilograms per box – its strength is said to be comparable to that of plywood – and allows for 1+3 stacking that is said to hold more firmly than a triple wall corrugated box.



Interactive bottle cap developed to help reduce food waste

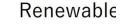
United Caps, based in Luxembourg, have launched a new product called Mimica, which was developed to help reduce food waste. The Mimica Touchcap works by using patented gel technology that is activated when the beverage is first opened. Without any physical contact with the beverage, it uses time and temperature to accurately measure spoilage. The cap is actually a freshness indicator – the consumer simply feels the surface of the cap to read. A smooth swipe means the beverage is still good. A bumpy swipe means it's done. By responding to changes in temperature, Mimica will enable consumers to keep their beverage for longer when stored correctly and reduce waste. Also if the beverage gets too warm for too long, the bumps will appear to warn not to consume it anymore. United Caps believes there is potential to safely increase shelf life of most perishable foods by at least 2 days.



High barrier recyclable paper developed in Japan

Tokyo-based Dai Nippon Printing (DNP) has announced the development of a high barrier recyclable paper. The paper is said to have excellent barrier properties against oxygen and water vapour. Until now, due to the porous structure of paper, with fine gaps between the fibres, it has been difficult to provide a barrier against oxygen and water vapour, making it challenging to protect contents for extended periods of time. DNP says that it has leveraged its "proprietary converting technology" to integrate barrier properties into paper materials. This new paper utilises a high barrier coating layer, which is composed of paper-based mono-material that enhances recyclability. This coating also makes the paper heat-sealable. The company also says that this barrier paper consists of a thin layer of material that does not affect the transmission of radio waves, and can be used with RFID applications. Expected areas of use include food, cosmetics, and medical products.



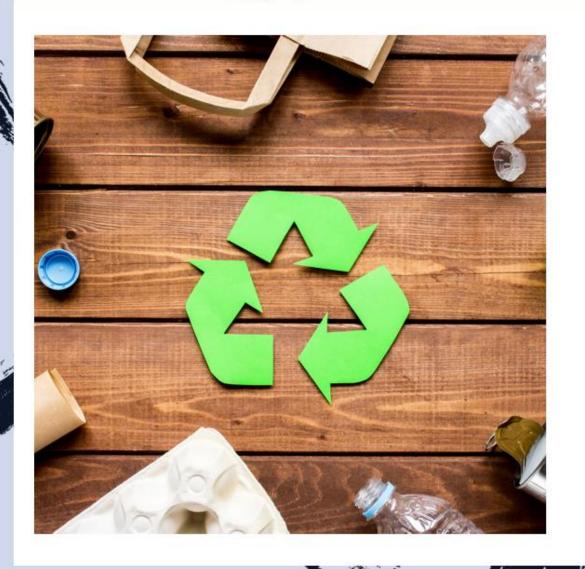


mono-material sheet

High barrier compostable film launched for snacks

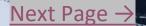
Israeli compostable packaging manufacturer TIPA, has announced the launch of a new high barrier compostable film aimed at snack products such as crisps and nuts. TIPA says that their 312MET film has superior sealing properties and a particularly high barrier that enables quick converting without the need for an additional sealing layer. TIPA says that as well as being suitable for salty snacks, it is also a good solution for other food products such as granola, coffee and even meat. TIPA is a well-established compostable packaging provided and abides by standards such as EN 13432, ASTM D6400, AS 4736/AS 5810 and TÜV OK Compost Home. The UK is the third highest consumer of crisps and salty snacks worldwide, with six billion packs consumed each year. WRAP said that the UK disposes of 290,000 tonnes of flexible packaging each year. It is claimed that only 6% is being recycled.





Recycling Resurgence



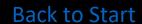


Recycling Resurgence

Recycling initiatives continue to be one of the most active sustainability areas driven by challenging Plastic Pacts around the world that are part of a three-pronged objective to deliver 100% recyclable packaging by 2025. Pending packaging taxes that require 30% recycled content is influencing change as well as the focus on stretching recycling targets. We are seeing more chemical recycling initiatives as well as recycled PS and PP developments coming to our attention.

This large section includes recycling initiatives as well as packaging that now incorporates (more) recycled content. We can report many examples of mono-material developments and other measures to improve recycling rates. The introduction of Packaging Taxes is also on the horizon, influencing the recycling of packaging. The UK's has already been implemented in April this year, which sees a levy on plastic packaging with less than 30% recycled content. This activity inevitably influences the demand for packaging reduction activities. There is still a long way to go in terms of consumer education and essential infrastructural and capability changes to improve recycling rates. We can report on an increase in the number of chemical recycling initiatives coming to our attention although still modest at this stage. Mechanical recycling processes is still the dominant way to deliver recycled packaging and this looks set to continue.







Machinery manufacturer launches labelling solution for moulded fibre trays

Irish tortilla chip manufacturer moves to fully recyclable packaging

Wool recycled for clothing insulation

Collaboration brings paper-based packaging solutions to market

Recyclable board ice cream packaging to be launched in US

<u>Vegetable oil producer moves to PCR PE shrink film</u>

Researchers find new method for recycling EPS

Scientists develop enzyme platform for PET depolymerisation

Successful trial conducted using PCR PP resin

Margarine brand recycles 100% of packaging through offset scheme

Foamed edge protection contains 100% recycled content

Vietnam market launches carton recycling initiative with beverage carton manufacturer

Pilot Scheme will allow consumers to easily recycle cosmetics packaging

Board carton designed to be more sustainable

Premium gift box developed for organic herbal tea range

Recycled PE used in dairy drinks is industry first

Minnesota start-up intends to reduce takeaway packaging waste

Tear tape solution contains 70% PCR content

Bespoke 100% wood cap for luxury fragrance collection

Fragrance brand collaborates with paper manufacturer for 30% recycled fibre packaging

Vegetable spaghetti products move to 80% rPET packaging

French dairy introduces yoghurt pot with 50% recycled content

Foamed PP bottle uses feedstock from waste and residue streams

In mould label approved for compatibility with EU PP recycling stream

Granola brand moves to mono material pouch

Moulded pulp fibre bottle aims to replace single-use plastic bottles

Honey producer moves to 100% recyclable board container

Joint venture aims to recycle paper-based cups in Europe

Minimalist board-based solution for beverage can multipacks

Chinese multinational moves to 100% recyclable toothpaste tube

Bedding manufacturer rolls out recycled packaging

Brewery moves to fully recyclable board outer packaging

New black masterbatch allows sorting of dark PET



Machinery manufacturer launches labelling solution for moulded fibre trays

French machinery manufacturer, Pagès Group, has built its reputation as a supplier of high-speed robotics systems, specialising in IML (In Mould Labelling) technology for plastic container manufacturers. Realising that the growing popularity of moulded fibre trays could present an opportunity for labelling, they spent two years developing labelling equipment for fibre-based trays. They are now launching patented technology, known as MFL or Molded Fiber Labeling. Traditional labels were discounted as the adhesive used interfered with the recycling or composting of the tray, so they developed what they call 'pressure' labels that utilise no glue, in a partnership with Belgian label company MCC Verstraete. As the MFL technology is patented, the two companies are keeping the exact detail of how the paper labels are attached to the fibre-based trays. Pagès Group is able to offer modular systems that allow flexibility, while also allowing for quick size changes.



Irish tortilla chip manufacturer moves to fully recyclable packaging

An Irish tortilla chip manufacturer has moved its range of corn tortilla chips to fully recyclable packaging. The company, Blanco Niño, is said to be the first brand of premium corn tortilla chips in the UK and Ireland to switch to 100% recyclable packaging. The new packaging is made from PP (polypropylene), which is regarded as widely recyclable. It is claimed that PP will keep the tortilla chips fresher for a longer period. The company says that consumers are demanding more sustainable products and that they were delighted to rise to the challenge. They also say that the move was not easy or straightforward, but that their research and development process made it possible. The company states that the product range itself, which includes lightly salted, blue corn and chilli & lime will remain unchanged. Blanco Niño tortilla chips are gluten-free, vegan-friendly as well as kosher certified.



Wool recycled for clothing insulation

The Traille Company is based in South-Western France, close to Biarritz. The company was set up when the owner discovered that the sheep farmers of the Pays Basque were not offered any opportunities to recycle their ewes' wool, despite the versatile properties it possesses. The company uses an innovative technical solution so that the wool, considered a waste product, could be used as an insulating material, replacing down or polyester in clothes or for packaging applications. The wool is collected from the wool of ewes of the Lacaune breed. Their wool has the ideal characteristics because it is curly, and therefore voluminous, and also has very fine fibres. The raw wool is washed, combed and thermally bonded, 15% of the bonding agent is based on maize starch to consolidate the wool, and a collection of 8 tonnes produces four clean tonnes. The company delivers to a clothing company at Saint-Palais, and a textile manufacturer in the Auvergne-Rhône-Alpes region.



Collaboration brings paper-based packaging solutions to market

Two German companies have collaborated to bring packaging solutions made of paper to the market. Mitsubishi Hitec Paper has been offering a range of recyclable barrier papers called Barricote for flexible food and non-food packaging for some time. SN Maschinenbau is known for its horizontal form, fill and seal machines for various products. Following extensive testing across a wide variety of products, especially food, the companies have now proven that the water-based coated Barricote papers can be processed on the pouch packaging machines from SN Maschinenbau just as reliably as plastic-based films. Expensive retrofitting of the machine technology is therefore said to be not necessary. Barricote papers offer barriers against water vapour, grease, oil, oxygen and aroma, and also against mineral oil migration. They can also be recycled in the waste paper cycle, are made from renewable raw materials, can be heat-sealed and are FSC and PEFC certified.



Recyclable board ice cream packaging to be launched in US

Finnish packaging manufacturer Huhtamaki is to launch recyclable ice cream packaging in the North American market. ICON cups and lids utilise a new water-based barrier coating that is re-pulpable, allowing cups to be recycled where local facilities exist. ICON is manufactured using 95% renewable bio-based materials and has been verified by the bio-based ASTM D6866 standard. By moving away from PE (polyethylene) coated cups to ICON, this eliminates 1.3 tons of polyethylene per 1 million cups, meaning a smaller footprint in the freezer section. Also, 21 tons of paperboard will be removed from landfills for every 1 million cups that are recycled. And, when recycled, over 90% of the paper fibre is recovered. All the consumer needs to do is give the cup a wash to remove any residue, flatten, and add to other paper and board packaging for recycling. The board used for ICON is SFIcertified and has a premium print surface.



Vegetable oil producer moves to PCR PE shrink film

Cargill Brazil has announced that after recently moving from corrugated boxes to PE (polyethylene) shrink film for its Liza vegetable oil range, it has now moved to a PCR (post-consumer recycled) version, called Ecofilm PCR. The company says that the change gave a 71% reduction in water consumption and 65% in the emission of greenhouse gases, calculated for a year of transporting Liza products. The use of shrink film with PCR content occurred after the LCA (life cycle analysis) showed better performance and minimization of the impact on the environment compared to other possibilities considered. Lord Brazil has started to supply the new shrink film, using the Ecofilm line of sustainable films produced with Revoloop resin, developed by Michigan-based Dow Chemicals. Ecofilm PCR is said to have the same performance and recycling qualities as virgin fossil-based PE.



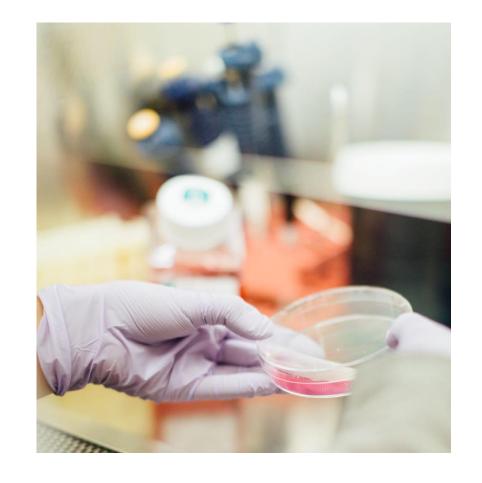
Researchers find new method for recycling EPS

Scientists at US research university Virginia Tech have announced that they have found a way to recycle EPS (expanded polystyrene). Current methods for recycling polystyrene yield a product that is often too lowquality to make the process economically viable. The solution that the researchers at Virginia Tech arrived at was to improve the recycling process to become economically attractive. The researchers found that by exposing the material to ultraviolet light and adding a chemical catalyst, this method created a product called diphenylmethane (DPM) that is seen as immensely useful. DPM is used as a precursor in drug development, polymer manufacturing, and even as a fragrance in consumer products. Importantly, DPM has a market price that is 10 times higher than other materials that can currently be made from recycled polystyrene. This method of upcycling creates an incentive for polystyrene to be collected and recycled instead of going into landfill or becoming plastic pollution.



Scientists develop enzyme platform for PET depolymerisation

Scientists at The Manchester Institute of Biotechnology (MIB) say that they have developed an engineering platform capable of evolving enzymes for PET depolymerisation. The researchers use an evolved enzyme called HotPETase that can selectively depolymerise the PET portion of a PET/PE composite film lid, leaving the PE portion to be recycled using alternative methods. HotPETase is an engineered version of IsPETase, designed to meet certain industrial recycling requirements. IsPETase is poorly active and thermostable, so it would not survive in an industrial process. HotPETase can depolymerise PET in reactions up to 70°C, and it is also a lot faster than IsPETase and other PET degrading enzymes. The researchers say that in the future, the platform could also be used to engineer enzymes that act on different types of plastics to create a suite of enzymes for a more comprehensive biocatalytic recycling strategy.



Successful trial conducted using PCR PP resin

Yorkshire-based PFF Group has announced that they have successfully completed a full-scale production trial using NEXTLOOPP's PPristine resin. NEXTLOOPP's PPristine is a PCR (post-consumer recycled) PP (polypropylene) resin. The trial successfully formed what is called a Desto banderole pot – often used to package hot fill applications such as porridge. These are typically manufactured from PP due to its ability to withstand high temperatures. PFF says that when the material is commercially available, it will be compatible with the UK's new Plastic Packaging Tax, which came into force in April 2022, as it is comprised of 30% recycled PP. PFF also utilised PPristine's marker technology, based on intelligent labels with invisible markers that can be detected and sorted using existing high-speed optical sorting systems. These use high-performing luminescent compounds for detection, allowing recycling facilities to separate food-grade packaging in the waste stream.



Margarine brand recycles 100% of packaging through offset scheme

Brazilian food processor BRF, owners of the Qualy margarine brand, has announced that it has recycled 100% of the 4,253 tonnes of PP (polypropylene) used for its pots this year. The move is thanks to a partnership with eureciclo, the largest reverse logistics certifier for packaging in Brazil. According to BRF and eureciclo, the packaging has already been recycled and reinserted into the chain. With eureciclo, the reverse logistics process is monitored and certified until completion. The partnership includes support for cooperatives to collect the equivalent of the polymer used in packaging and sell it to recyclers. Qualy's initiative with eureciclo involves 25 sorting centres, cooperatives that receive the materials collected in buildings or town halls and sort the types of material. After that, it is transformed into raw material for various types of product on the market such as home appliances, toys, carpets, auto parts, among others.



Foamed edge protection contains 100% recycled content

Packaging solutions provider Antalis has announced that they have developed a range of PE (polyethylene) foam-based edge protection products that are made from 100% recycled content, and which are also fully recyclable. The company says that its new foam profiles are available in an ocean green colour and provide corner and edge protection for many different applications. The flexible, shockabsorbent profiles reportedly mould around delicate edges to protect them from damage caused by knocks and drops. The company also says that the foam profiles are also dust and odour free, leaving no residue on goods. As well as the foam profiles being fully recyclable, as they are made from 100% recycled material they are exempt from the recently implemented UK Plastic Packaging Tax, which states that products must contain at least 30% recycled material to avoid taxation.



Vietnam market launches carton recycling initiative with beverage carton manufacturer

Multinational food packaging and processing company Tetra Pak, is teaming up with Packaging Recycling Organisation Vietnam to launch a pilot scheme to bring recycling of multi-layer beverage cartons to Ho Chi Minh City. By introducing the pilot project, they hope to increase recycling rates and provide income to freelance waste pickers. The pilot will take place throughout March 2023. The scheme will utilise the KOLEKT App from Circular Action to manage carton collection. The pilot scheme follows a 2020 feasibility study on strategies for collecting and recycling used beverage cartons in Vietnam as well as India. Larger waste collection centres will be paid an incentive fee for tons of Tetra Pak cartons sold to paper recycler Dong Tien Paper, which will recycle them into brown paper, chipboard or corrugated roofing. Those collection centres will also get a performance-based payment to pass on to waste pickers to secure supply.



Pilot Scheme will allow consumers to easily recycle cosmetics packaging

South Korean start up Innerbottle has announced that it is to partner with two other South Korean businesses to conduct a pilot scheme with its innovative solution, which will allow consumers to recycle their cosmetic packaging easily and effectively. Innerbottle solves the issue of residue in cosmetics packaging. The initiative consists of an inner bottle made from TPX, a variant of TPE (thermoplastic elastomer), when removed, leaves the outer bottle clean and ready for recycling. Innerbottle is partnering with LG Chem and CJ Logistics to launch IREON, a B2C beauty platform. IRLEON will feature four beauty brands, Akua, Green Atelier, ELLETTOBRENNI and Farm & Co. Once collected, the bottles are sent to LG Chem, who will process them into PCR (post consumer resin), to be made into more bottles. Innerbottle is also in the process of developing an app to make it easier for consumers to recycle their bottles.



Board carton designed to be more sustainable

Colbert Packaging Corp. is a US-based supplier of sustainable packaging solutions. They have now announced the One Clean Carton®, a waterbased paperboard carton designed to be more environmentally friendly, and which has passed a series of pharmaceutical and food-safe secondary packaging laboratory tests. The company says that all components of the One Clean Carton® are tested to ensure they meet environmental and safety agency standards to be safe for indirect food contact, which includes inks, coatings and adhesives. The water- and agri-based inks comply with the Swiss Ordinance regarding food-safe inks and coatings, while the aqueous coatings originate in the United States and meet or exceed U.S. federal and state guidelines. Clean Carton water-based adhesives meet or exceed V.O.C. (volatile organic compounds) emission requirements. The carton is made from Colbert paper, which is said to provide superior performance on press with less waste and lower consumption of raw materials and ink.



Premium gift box developed for organic herbal tea range

Kent-based Alexir Partnership has created a luxury gift box for Pukka Herbs, the Bristol-based herbal tea manufacturers. The Pukka Workday Wellness box is a selection of 90 sachets across six flavours and a variety of active teas, green teas and calming teas. A circular rigid board format became the preferred choice as it showcased the myriad of teas in a stunning layout. In addition, the circular shape with the central point, may be seen to replicate a clock and this resonated with the working day theme. The gift box is a beautifully presented circular pack with delicate foiling in complementary shades of colour. The organic herbal teas create a rainbow fan around the centre and are partitioned according to the state of the mood; find zen, boost, unwind, kickstart, centre and lighten. All components were delivered into Alexir Co-Packers where they were assembled, then returned as full pallets to Pukka.



Recycled PE used in dairy drinks is industry first

European dairy manufacturer Lactalis Nestlé is to use Recyclex in some of its Spanish and Portuguese products. Recyclex, manufactured by Spanish petrochemical company Repsol, uses advanced recycling technology for PE (polyethylene) that allows the resulting polymers to be used for food and makes it possible to reuse plastic waste not suitable for mechanical recycling, which is then transformed into new circular materials with the same quality and functionality as virgin plastic. Since June, bottles of the Nestlé Kefir range produced in Guadalajara for Spain and Portugal have been manufactured with 30% recycled PE. Also, the material used for the Yoggi brand drinking yoghurt bottles, marketed in Portugal, contain 10% recycled material. This collaboration makes Lactalis Nestlé the first refrigerated dairy company to use recycled plastics in its packaging.



Minnesota start-up intends to reduce takeaway packaging waste

A Minnesota start-up is tackling the issue of single-use takeaway packaging with a returnable container system. The packs are made from stainless steel with silicone lids. The Forever Ware platform and proprietary tracking system allows restaurants to check out the containers to their customers for a \$5 deposit per container. Customers then return the containers to any participating restaurant to get a new takeout order or their deposit back. Apparently, funding hasn't been much of a problem for the young company as much of Forever Ware's work has been grant funded from organizations like local startup accelerator Launch Minnesota. So far, Forever Ware say that they have saved roughly 10,000 containers from landfills in a year and a half of operation. Forever Ware offers insulated cups and bowls for hot drinks and hot meals and three sizes of rectangular containers for food that doesn't need to be kept at refrigerated temperature.



Tear tape solution contains 70% PCR content

Essentra Tapes, based near Oxford in the UK, has announced an addition to their SupaStrip range of adhesive tapes. SupaStrip PCR is a new high-performance tear tape containing at least 70% post-consumer material, designed for flexible packaging applications. Because of the 70% post-consumer recycled content of SupaStrip PCR, this means it falls outside the scope of most current plastic packaging taxes and other EPR reforms. The company states that SupaStrip enhances brand loyalty by providing a positive, easy-opening experience with additional brand owner value delivered via the engagement potential of print and increased efficiencies during manufacturing. SupaStrip PCR is said to offer the same 'gold standard performance' as SupaStrip but with improved sustainability benefits on top. The 23-micron tape is suitable across a variety of sectors, including tobacco, FMCG products and electronics.



Bespoke 100% wood cap for luxury fragrance collection

Barcelona-based Quadpack Wood has announced the development of a new, bespoke 100% wood cap for Shiseido's new fragrance collection. Quadpack say that the 100% wood bespoke caps were a result of intensive research and development, and were motivated by Shiseido's desire to have mono-material, biobased caps for its fragrance collection. The caps were developed from Quadpack's Woodacity range, and both the female fragrance bottle, topped with an elongated cap, and the male version, with a cap resembling a chunk of cedar wood, have a minimalist design, representing a 'return to essentials' and echoing the raw nature by which it's inspired. The sustainably-sourced 100% wood solution doesn't have plastic inserts, and, thanks to its unique 'Solo Push' rib pattern, can provide a tight closing system to protect the formula. The caps were developed for Shiseido's new fragrances: "L'Eau d'Issey Eau & Magnolia" and "L'Eau d'Issey pour Homme Eau & Cedre".



Fragrance brand collaborates with paper manufacturer for 30% recycled fibre packaging

London-based fragrance brand BelRebel has collaborated with specialist paper manufacturer James Cropper for its perfume bottle packaging and absorbent tester blotters. Boxes were developed for the brand's seven fragrances, the paper used was from James Cropper's Vanguard range of papers, which contain 30% recycled fibres. The Vanguard range of paper offers a choice of 28 different colours, from soft pastels with understated elegance, through to intense bolds and cheerful bright shades. The BelRebel team selected cherry, raspberry, daffodil and orange from the selection. A spokesperson for James Cropper said that FibreBlend Upcycled Technology means that they are able to provide off the shelf as well as bespoke papers which are not only beautiful and functional, but which also give new life to recovered fibre. Vanguard papers are available in a range of grammages, from 120 to 620gsm.



Vegetable spaghetti products move to 80% rPET packaging

Orsini & Damiani are Italian fruit and vegetable growers. One of the premium products from their Mangiatutto range is Spaghetti di Verdure (vegetable spaghetti). They have now moved these products into a recyclable tray and film lid, which is made from 80% rPET (recycled polyethylene terephthalate) mono-material. The company says that the choice of PET was chosen for its functional properties as well as its attractive appearance. The company says that vegetable spaghetti, and processed vegetables in general, release water even after days. The use of cardboard packaging would have compromised its quality, generating mould and, consequently, shortening its shelf life. There are no labels on the pack, and any useful information will all be printed directly onto the film itself, on the side of the pack. Orsini & Damiani Vegetable Spaghetti can be found in some of the main Italian supermarket chains and is available in five varieties.



French dairy introduces yoghurt pot with 50% recycled content

Eurial is a French dairy co-operative and owner of the Les 300 Laitiers Bio brand yoghurt. In a collaboration with US materials company Trinseo and Monaco-based thermoforming materials experts CEDAP, they have brought food contact compliant rPS (recycled polystyrene) for Eurial's yoghurt pots to market. The material used is Trinseo's STYRON CO2RE CR55 Polystyrene Resin which combines 55% recycled styrene monomer feedstock with virgin, fossil-based content. After refining and production, the material yields 50% rPS and this is what goes into the pots. Depolymerisation technology is used in the recycling process and allows PS (polystyrene) waste to be converted to its monomer (styrene), which is then combined with virgin content in manufacturing. Using the Trinseo rPS, CEDAP produces a PS sheet roll and sends it to Eurial Ultra-Frais for yoghurt pot thermoforming, filling, and sealing and, ultimately, delivery of the final Les 300 Laitiers Bio product to the retailer.



Foamed PP bottle uses feedstock from waste and residue streams

A collaboration between US injection moulding company Trexel, and Austrian producer of PE (polyethylene) and PP (polypropylene), Borealis has resulted in the development of a MuCell-foamed bottle based on renewably-sourced polypropylene from Borealis' Bornewables portfolio of circular polyolefins. MuCell is a patented process that creates 'microbubbles' in the core of plastic products by injecting gas into them as they are manufactured. The development has produced a new lightweight, recyclable and reusable bottle with a considerably lower overall CO2 footprint compared to rival products. The monomaterial bottle is based on a grade from Bornewables portfolio of polyolefins made using renewable feedstocks derived 100% from waste and residue streams. Designed for recycling, made with renewable feedstocks and produced with energy and material-saving technology, this new bottle ticks many boxes when it comes to closing the loop on plastic circularity.



In mould label approved for compatibility with EU PP recycling stream

Belgian IML (in mould label) specialists MCC Verstraete has announced that its NextCycle IML label has been approved by RecyClass and is fully compatible with the European rigid PP (polypropylene) recycling stream. Independent testing facilities positively assessed both its sorting behaviour and recycling compatibility. The results show that the recycled material produced from packaging containing the NextCycle IML technology can be used back in high-end, or even closed-loop applications. NextCycle IML labels are a new generation of IML that can get separated from the containers first at the grinding and then at the air elutriation stages – where separated label flakes are removed from the container flakes and sent to the flexible plastic streams. Tests demonstrated that more than 98% of the NextCycle IML was removed after grinding and air elutriation stages, enabling the plastic generated by the recycling process to be used back in closed-loop applications.



Granola brand moves to mono material pouch

Australian granola brand We* the many has announced that it has moved its stand-up pouch to a new-look mono material. The new recyclable pouches are supplied by flexible packaging specialist, Melbourne-based OF Pack. We* the many is known for its carbon-neutral breakfast range, so moving to a new single polymer plastic that can be recycled back into high-value products is seen as an important part of their sustainability model. The company says that it produces carbonneutral gourmet health food with the principal purpose of investing 50% of profits into projects that reduce carbon, confirming that it has invested in green bonds since launching in 2020, with its next climatepositive investment target of \$100,000. A partnership with Woolworths will see all four products, Prebiotic Granola, Antioxidant Granola, Turmeric Granola and Antioxidant Porridge, available nationwide. The range is claimed to be carbon neutral, preservative and additive free, non-GMO and vegan friendly.



Moulded pulp fibre bottle aims to replace single-use plastic bottles

Glasgow-based Cullen Packaging are manufacturers of sustainable packaging, including moulded pulp and corrugated products. They have now announced the full launch of a fully recyclable moulded pulp product known simply as 'The Fibre Bottle'. The company says that it is designed for dry goods and will potentially enable brands producing goods such as vitamins, supplements, dry foods, homecare and horticultural products to remove 270m single-use plastic bottles or pouches from shelves per year. The pioneering Fibre Bottle is made from 100% natural matter, recycled cardboard and water, and is biodegradable and compostable – in fact the company itself uses a closed-loop recycling system that cleverly utilises the waste they produce from their corrugated manufacturing process to make their moulded fibre products, including The Fibre Bottle. Cullen points out that for a product of the same size and functionality, moulded fibre has a 63% lower CO2 emission as compared to polystyrene and is 150% lower compared to PET.



Honey producer moves to 100% recyclable board container

Spanish honey producer Luna de Miel has announced that it is moving its Miel de Flores (blossom honey) to a 100% recyclable board container. The board used for the pack has the FSC (Forestry Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification) approvals to guarantee to the consumer that the entire manufacturing process, from the carrier to the distributor, has been carried out using raw materials obtained sustainably. As well as the board being certified, the inks used to print the container are solvent-free mineral inks. The company says that as the new board container is 10 times lighter than a conventional glass container, which would in turn, help to reduce the carbon footprint of the product. The honey is available in Carrefour stores at a sale price of €7.49 per 750 gr.



Joint venture aims to recycle paper-based cups in Europe

A joint venture between two Finnish companies has resulted in the launch of an ambitious programme to recycle paper-based drinking cups in Europe. Pulp and paper producer Stora Enso, and food packaging manufacturer Huhtamäki are launching The Cup Collective and are aiming to roll it out in Benelux countries by the end of 2022. The Cup Collective aims to recycle half a billion paper cups in the first two years and, as it is designed to be scalable, has the capacity to significantly increase recycling volumes across Europe. The programme is led by Co-cre8 – a UK-based company with over a decade of experience in designing and implementing recycling programmes across Europe. The Cup Collective says that it will work with partners across the supply chain, from the largest restaurant and cafe chains, retailers and transport hubs to independent cafes, collection partners, waste management operators and policymakers across Europe.



Minimalist board-based solution for beverage can multipacks

US packaging giant WestRock has announced the launch of CanCollar X, the latest addition to the CanCollar family of fibre-based beverage can packaging solutions. WestRock says that this new solution offers a similar fibre-based, glue-free, minimalist design preferred by many consumers as it maximises visibility and is comfortable to handle. According to the company, using CanCollar X can reduce materials by as much as 50% compared to conventional fully enclosed board options. CanCollar X is also aimed at replacing the quantities of PE (polyethylene) shrink film currently used worldwide for soft drinks, beer, or sparkling water. CanCollar X is packed using the CanCollar Fortuna platform, which is a newly patented beverage packaging machine that uses a series of star wheels and metering screws, along with a highly innovative linear drive system to seamlessly move containers through a travel path in the machine at high speeds.



Chinese multinational moves to 100% recyclable toothpaste tube

The NICE Group is a Chinese multinational enterprise specialising in home and personal care products. In a joint collaboration with Dow Chemicals and Amcor, they have now moved their previously nonrecyclable toothpaste tubes to a new, recyclable formulation. Standard toothpaste tubes traditionally contain an aluminium layer, rendering them unrecyclable. The new tubes are made from a PE/EVOH (polyethylene/ethylene vinyl alcohol) combination, and are made of Dow's high-barrier ELITE AT (Advanced Technology) PE resin, which is said to offer high processability as well as high shrink, ultra-high stiffness, sealability, and good organoleptics. This material was then passed on to Amcor, who designed and converted the tube, continuously adjusting its manufacturing and converting systems to ensure operational efficiency and safety. The new tube will be used across all of NICE Group's toothpaste brands, including its Cnice gum and tooth care line. The move is reported to prevent 3,000 tonnes of waste going to landfill.



Bedding manufacturer rolls out recycled packaging

Yorkshire, UK bedding manufacturer John Cotton Group has announced that it has completed the roll out of 30% recycled content in its packaging across its range of products in the UK. They say that the move is just the first part of the company's new packaging plan to reduce the use of natural resources. The company says that it has also introduced 50% and 100% recycled packaging on some of its lines. Supported by supplier partners, it is reported that John Cotton Group has removed 596 tonnes of plastic from its packaging compared to 2019 and is on track to meet its aim of a 50% virgin plastic reduction much earlier than their original target date of 2025. Brands under the John Cotton Group include Slumberdown, Snuggledown and Earthkind, as well as the retailer's own brand.



Brewery moves to fully recyclable board outer packaging

The Avery Brewing Company, based in Boulder, Colorado has announced that they have moved away from plastic outer packaging and have launched the full range of their 6-packs of beer in fully recyclable board packaging. The company says that the transition to board cartons will provide a sustainable solution in their effort to reduce waste, while elevating their branding to showcase the uniqueness of each individual beer. The new cartons will feature classic Avery branding, with bold colours and panels that share the story behind each beer. The new board packaging will begin rolling out to US retailers this week, with all plastic packaging being phased out within the coming months. The brewery produces a range of different beer styles, including Belgian-style white beers, a selection of IPAs, barrel-aged ales, as well as several alcoholic seltzers.



New black masterbatch allows sorting of dark PET

Two companies have come together to bring a recycling solution for black PET (polyethylene terephthalate). Currently, near-infrared technology is used to identify the resin types in each product. However, the most common black pigment, carbon black, is not compatible with near-infrared, meaning that dark-coloured packaging cannot be identified or separated by its resin fingerprint. Instead, it is sent to landfill. Now, Luxembourg-based masterbatch manufacturer Ampacet and French sorting technology company Pellenc ST are collaborating on REC-NIR-BLACK, a brand of alternative black masterbatch solutions said to allow PET packaging in dark colours to be recycled on existing recycling lines without compromising current sorting technology. Pellenc ST have now run the final validation tests in the semi-industrial trials of the HolyGrail 2.0 project, resulting in a 99% detection rate and the opportunity to develop new recycling technologies.





Getting Noticed

Getting Noticed

Despite the growth of online, the importance of creating impactful and noticeable packaging continues to create a point of difference. The packs have a role to get noticed on shelf as well as engage and delight in the consumer's hand and again this month we have some great examples. Despite the shift to online purchases, packaging that can get noticed continues to come to our attention. The importance of standing out on supermarket shelves or even in kitchen cupboards cannot be understated.

A pack's first impression can be the difference between success and failure in an ever-increasing competitive marketplace. We have tracked several examples that do just this. Also creating an impact in the hands of consumers is also important. A challenge for brands and retailers is to deliver pack finishes and decorations that meet the need to be sustainable.





Getting Noticed

Mini melons pack designed to attract children

Caps with unique effect developed for luxury fragrance

Mini melons pack designed to attract children

Agrícola Famosa, the largest producer of melons in Brazil, is hoping to introduce a new concept to the Brazilian market. 'Baby' or 'Mini' melons, which are fruits that have the same characteristics as conventional melons but only weigh up to 1 kilo. They are popular in European countries, and Agrícola Famosa hopes that a selection of three melon varieties will be available on the Brazilian market in the coming months, Cantaloupe melon, Galia and Charantais (known as the Italian Cantaloupe). The corrugated packaging for these packs was developed by WestRock Brazil, who were tasked with producing something that would stand out on-shelf. The creative team designed a fun and sustainable pack that could be reused by children, as it is shaped like a bus and can be used afterwards as a toy. By using photo-quality HyGraphics technology, the packaging makes the product more attractive and helps to create a connection with the consumer.



Caps with unique effect developed for luxury fragrance

British fragrance and luxury lifestyle brand Jo Malone London has collaborated with global cosmetics packaging manufacturer Quadpack. Together they have developed unique wooden caps for its new limited collection. Each year Jo Malone creates a range of limited-edition fragrances, and this year's fragrance is called Wild Swimming. Inspired by the pursuit of swimming in natural bodies of water, this aquatic pastime connects swimmers with nature. The caps feature individual wooden caps, each decorated with a unique driftwood effect, and are made of FSC®-certified (Forestry Stewardship Council) wood. The caps were produced by Quadpack Wood, based in Catalonia, Spain. The Catalonia plant is dedicated to making beautiful wooden components for cosmetics packaging. The final driftwood aesthetics is obtained using the layering technique followed by a sanding process, creating exclusive one-of-a-kind patterns for each individual cap. The natural beauty of the British Isles is explored in five limited-edition scents.





Refill Revolution

Refill Revolution

Refillable and reusable packaging continues to come through the innovation funnel. The growth is in part driven by the Plastic Pact aim to deliver reusable packaging by 2025. Many of the initiatives are from start-up and challenger brands with multinational brand owners also getting in on the act with small scale trails and pilots. The dry food, household and health and beauty sectors are the most active.

Reusable and refillable packaging examples have increased in occurrence as brands, retailers and suppliers look at ways of tackling single-use and difficult to recycle packaging. A change in consumer attitude is emerging with resistance to single-use packaging. The innovations collated can be segmented into the Ellen MacArthur Foundation's four reuse models – Refill at home, Return from home, Refill on the go and return on the go. Dry food, household and personal care sectors are the ones that are making the most ground. Many of the in-store examples listed are small trials and pilots as major retail chains test the water with a small number of initiatives in outlets. Their next moves will be eagerly anticipated.





Refill Revolution

First reusable bottle made of thermally hardened lightweight glass

German manufacturer launches reusable PP dome lid for on-the-go drinks

Luxury department store announces plans for refillable biscuit tins

Beauty brand launches reusable travel bottles

Reusable dishware and cutlery incorporates RFID tags

<u>Australian supermarket to trial bring-your-own deli containers</u>

Foldable shipping containers offer advantages for moving empty containers

Festival presenter is helping venues do away with single-use cups

Seafood producer announces launch of reusable packaging

New fragrance launched in sustainable packaging

French startup aims to automate the tracking and management of reusable packaging

Polish pilot scheme allows customers to fill own containers instore

Estonian startup provides reusable cup system for marathons

Recyclable refill pouch launched in Thailand

First reusable bottle made of thermally hardened lightweight glass

Vetropack, based in Switzerland, have announced the launch of Echovai, which is claimed to be the world's first reusable bottle made of thermally hardened lightweight glass. Developed over ten years, and with three years of testing with the Mohren Brewery in Vorarlberg, Austria, the pilot has shown that as well as being a lighter, more durable bottle, the logistics and CO2 emissions per bottle are reduced. The weight reduction is said to be 30% compared to standard 33cl bottles, and thanks to the hardening process they are also more resistant to abrasion. The curing process is adjusted very precisely to the individual container and its shape, and is said to be a very sophisticated, technologically demanding process. The bottles produced are also slightly smaller than standard bottles meaning that they can be stacked six high rather than five high on pallets, saving an estimated 1,000 tonnes of CO2 annually.



German manufacturer launches reusable PP dome lid for on-the-go drinks

German resealable lid manufacturer CUPEX has announced the launch of a reusable PP dome lid for on-the-go drinks. The new lid, called COMFORT, is made from PP (polypropylene) and consists of three individual parts that the consumer can pull apart and clean, either by hand or in a dishwasher. Conversely, when it reaches the end of its life, it is recyclable through channels such as Germany's Dual System. The lid is dome shaped, which is intended to accommodate liquids topped with cream or foam. Its opening is large, accessible, and resealable – releasing aromas when open to improve the taste of the drink inside, yet preventing spillage when it is closed with a simple sliding motion. CUPEX was set up by a small team of inventors, engineers, marketers and designers who were unhappy with the inadequate product properties of the different and widespread coffee-to-go lids.



Luxury department store announces plans for refillable biscuit tins

British luxury department store Fortnum & Mason is asking customers to keep their deluxe biscuit tins and buy refills as part of a green initiative. The store intends to roll out a system that will allow customers to order refills of biscuits by scanning a QR code on the back of products, including their iconic salty-sweet and chewy toffee Toffolosus biscuits. The move is the latest in a string of environmental policies being adopted by the high-end store, which includes plans to introduce new paper bags in its food hall. The store said it could remove more than 70 tonnes of single-use plastic from its business. The new bags, which now cost 10p, are made from chlorine-free paper, water-based inks and 20% recycled materials. The company has already introduced £85 reusable Christmas crackers and offers £5 gift cards to customers who return their wicker hampers.



Beauty brand launches reusable travel bottles

New York-based Ries is a new direct-to-consumer beauty brand that launched earlier this year. Its products are sold in reusable travel bottles and are currently available in two sizes. The company says that the bottles are designed and engineered to last for many years. They have now formed a partnership with the French multinational retailer of personal care and beauty products, Sephora. The move is Sephora's first in the reusable travel bottle sector. The company's Essential Travel Bottle retails for \$18 (3.4oz) or \$15 (1.7oz). Ries says that customers can choose to engrave the Ries' forest green bottles with its intended product use at no additional cost. Customers can also buy Ries bundles such as The Gym Set, The Hair Set and The Skin Set. The three-package sets start at \$45 (£38.27). Ries intends to increase the number of available sizes and colours of their containers.



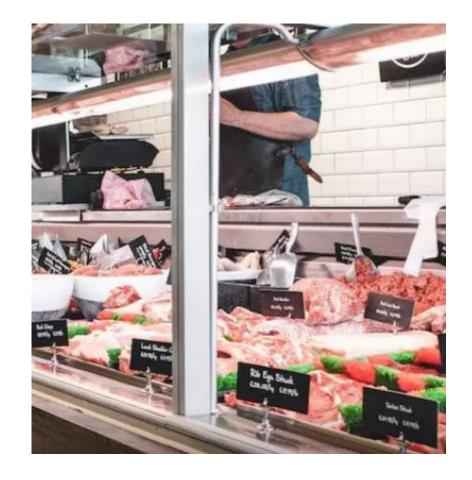
Reusable dishware and cutlery incorporates RFID tags

A German start-up called 1Less has launched a range of foodservice packaging incorporating RFID technology. Each item contains an RFID (radio frequency identification) tag, which means the company can harvest data, and items can be tracked through the entire collection, cleaning and re-use process. According to 1Less, every item can be used 800-1000 times and then fully recycled at the end of its life, with the tag removed and reused again. The point of difference of the 1Less System is the offer of a deposit-free, intelligent and automated smart re-use system for closed environments, making it very straightforward and user-friendly. For every kilogram of 1Less dishware items, it is possible to save 25 kilograms of single-use plastic packaging, resulting in almost 50 times less CO2 emissions. The company says that the system could create an entirely new way to deal with containers and cutlery at sporting events or music festivals.



Australian supermarket to trial bring-yourown deli containers

Australian supermarket chain Coles is to trial bring-your-own deli containers in South Australia. Customers who bring in their own clean containers with resealable lids can ask deli staff to pack cold cuts, small goods, and other deli favourites at eight Coles supermarkets. The initiative is part of Coles' Together to Zero Waste ambition. The company says that the trial will help them understand how best to provide this option to customers while still meeting stringent food safety standards. They intend to use customer feedback to decide whether to roll the initiative across more stores in South Australia, or around Australia generally. The list of stores in South Australia included in the BYO deli container trial is Firle, Unley, Bridgewater, Blackwood, St Peters, Burnside, Mount Barker and Murray Bridge.



Foldable shipping containers offer advantages for moving empty containers

New Jersey-based Staxxon is planning to sell a new, patented shipping container that is designed to fold in an accordion-style fashion and shrink to 1/5th the size of a regular container when empty. The company says that as standard shipping containers return home empty, cargo ships would be able to fit more of them on a return journey by collapsing them, helping ease today's supply chain issues. Staxxon says that the load-bearing strength of the upright design allows the container to be placed anywhere from top to bottom in a shipboard stack. Whether fully loaded or bundled together when empty, the company anticipates that its containers will be 100% interchangeable with standard ISO container fleets. The company says that it began accepting pre-order deposits last November "on a first-come, first-served basis," and they hope that the containers will become commercially available later this year.



Festival presenter is helping venues do away with single-use cups

American concert and festival presenter Live Nation is partnering with Turn Systems to help venues do away with single-use cups. Live Nation is investing \$5m in Turn Systems. Turn Systems provides reusable cups with a scannable code that activates a lid on smart bins for collection; both cups and bins can be branded. For cleaning the collected cups, the company uses specially designed dishwashers, which are said to be 700% faster than conventional washers. Their reusable patented cups can also be made of either aluminium or plastic. Trials carried out so far this year have produced varying return rates. At the recent Lollapalooza festival in Chicago, they experienced a return rate of 93%, but it has been as low as 58%. As an incentive, fans can also sign up via an app to be entered into giveaways for things like free merchandise and VIP upgrades.



Seafood producer announces launch of reusable packaging

As part of a three-way partnership with Tosca Reusable Containers, and Maine-based supermarket chain Hannaford, seafood producer Bristol Seafood has announced the completion of its transition to reusable containers. The company says that the programme was initiated as a part of its partnership to increase sustainability efforts. The business had an ambition to become more sustainable over the last ten years and they say that they have moved away from EPS (expanded polystyrene), starting with waxed corrugated board, then to recyclable cardboard, and now with reusable packaging. Tosca, who manages the containers says that their washing process is very thorough. The containers are prewashed before they're washed. They're inspected, then re-inspected seven steps later. Water temperatures are held to within a five degree variance to ensure food-safe sanitisation. Adenosine triphosphate (ATP) levels are measured every three hours to detect organic matter.



New fragrance launched in sustainable packaging

Italian retail clothing and accessories company Diesel has launched a new sustainable fragrance. D by Diesel Eau de Toilette is described as a 'gender fluid' fragrance, and has been designed to be a low impact product. The bottle the fragrance comes in is made from 25% recycled glass and is, of course, recyclable. The board outer packaging is made of 55% recycled material, with no plastic outer wrap. The bottle is also refillable and a 150ml refill bottle is said to be coming shortly. D by Diesel is a natural and vegan formulation with no animal derived ingredients or by-products, with sustainably sourced vanilla bourbon infusion and diva lavender heart. D by Diesel is available in three sizes, 30, 50 and 100ml, and costs £36, £54 and £74 respectively.



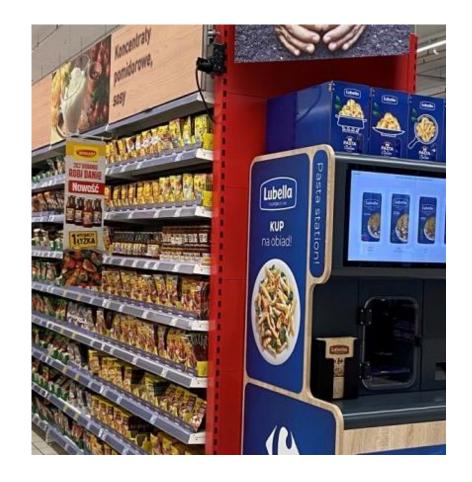
French startup aims to automate the tracking and management of reusable packaging

Goodfloow is a French startup that aims to automate the tracking and management of connected, reusable packaging. Switching from disposable cardboard industrial packaging to reusable helps eliminate packaging waste, reduces CO2 emissions and can improve the ergonomics of factory workstations. All of this can improve the CSR (corporate social responsibility) rating of the companies that use them. Utilizing the IOT (internet of things), Goodfloow can monitor reusable packaging anywhere in Europe, 24/7. Goodfloow makes the logistics loops more reliable and helps customers know their stock levels in real-time. It can also help reduce costs by preventing loss and/or theft. It can likewise help reduce the amount of over-stocking. Thanks to AI, there is real-time analysis of the position of each item of packaging, with managers assigned responsibility for each packaging item.



Polish pilot scheme allows customers to fill own containers instore

A Carrefour store in Warsaw Poland, has introduced a pilot scheme whereby customers can bring in their own containers for filling. The Pasta Station, introduced by the Lubella pasta brand is an automated machine that enables filling of pasta into paper bags, reusable bags and the customer's own packaging. In Carrefour Arkadia, customers can buy four types of Lubella pasta – spirals, shells, feathers and bows, each in capacities of 150, 250 and 350 grams. The customer selects the pasta type, the detailed information on the composition of the product, nutritional value, price and available capacity is displayed. The customer then chooses the type of packaging they would like. They then place their container underneath the dispensing door and the machine then automatically opens it for filling. Once filling is completed, the door opens and the machine automatically prints a label with all the necessary information about the purchased product and a barcode.



Estonian startup provides reusable cup system for marathons

Ringo Eco is an Estonian startup that provides restaurants, offices and events with a reusable packaging system. Their latest success has been supporting the Tallinn Marathon, and was the largest sports event in Northern Europe in 2022, to move away from single-use disposable cups. By using Ringo Eco's reusable cups, they saved an estimated 100,000 cups over three days. The system works by consumers registering on the Ringo website. When the consumer gets a reusable cup, they are charged a small deposit, which is returned when the QR code on the cup is scanned and returned to one of the collection points. Ringo says that industrial washing of cups uses 50-100 grams of water per cup, whereas research publications show that producing new cups each time would take 50-100 times more water per cup. Ringo Eco say they are already booking sports events and conferences in Scandinavia for 2022 and 2023.



Recyclable refill pouch launched in Thailand

Japanese manufacturer of detergent, soap, and other toiletries, Lion Corporation has collaborated with Dow Thailand Group to successfully develop fully recyclable 200-ml and 500-ml shower cream refill pouches for its beauty care brand, Shokubutsu Monogatari. The refill pouches will be made from Dow's INNATE TF Polyethylene Resins for Tenter Frame Biaxial Orientation (TF-BOPE). Dow says that their INNATE TF-BOPE has durable material properties, offering high toughness and excellent optics for stand-up shelf appeal and touch and feel. It also enables the development of a high-performance all-polyethylene structure that can be easily recycled, along with responsible disposal and recycling infrastructure. Although refill bags are relatively popular in Thailand, traditionally, they have not been recyclable due to the different plastics used for their manufacture. The recyclable Shokubutsu Monogatari shower cream refill bags will eventually replace the older bags and are now available for consumers across department stores and supermarkets in Thailand nationwide.





About Us

ThePackHub is a leading UK based packaging innovation consultancy specialising in delivering packaging solutions to brand owners, retailers and packaging suppliers. ThePackHub manages a market-leading innovation database called The Innovation Zone. The easy to use resource has over 6,500 packaging innovations from around the world updated at 25 initiatives a week. This internal insight and knowledge feeds into much of the consultancy we undertake. ThePackHub also has an unrivalled network of packaging contacts and connections across the industry.

thepackhub

www.thepackhub.com

Our team delivers technical support for packaging projects, large and small. From quick and helpful tips and advice through to the project management of significant packaging initiatives, ThePackHub has established a strong reputation for helping companies from start-ups to multinational organisations. Our recent clients for technical support have included EAT, Greencore, Able & Cole, Loch Duart, Innocent, Aunt Bessies, Waitrose, Leathams, WRAP, KP Snacks, Iglo, Fortnum and Masons, Church and Dwight, Aubrey Allen, Glanbia, Pip & Nut and Happen!

We have published several packaging reports covering sustainability, packaging trends, supplier guides, seasonal packaging and more. The PackHub also hosts packaging events. We have delivered a dozen face-to-face seminars that provide insight from expert speakers as well as bring the industry together to network and collaborate.

The Pack Hub has a wealth of experience helping many major companies with their packaging innovation. Clients include Arla Foods, Waitrose, Barilla, Coca Cola, PepsiCo, Mondi, Premier Foods, AB InBev, Kraft Heinz, Mondelez, Mars Wrigley, Church & Dwight, PZ Cussons, Meiyume, Walgreen Boots Alliance, Marks & Spencer, Lidl, Aldi and many more.