Welcome

Welcome to ThePackHub's Packaging Innovation Briefing Report for August 2023.

In this comprehensive and unique monthly report, created exclusively for Innovation Zone members, you'll find a wealth of information on the latest packaging innovations and industry news.

With 133 pages of content, including 105 new packaging innovations for the month, you can be sure that you'll stay informed and up-to-date on all the latest developments in the packaging industry.

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Summary

ThePackHub's latest monthly review underlines the latest developments in the field of packaging innovation, highlighting active areas such as bio-based packaging, recycling initiatives, reduction of plastic use, as well as many refillable and reusable packaging examples. Sustainability stays at the forefront, constituting around 80% of the latest activities, all of which are centred around environmental priorities.

The bio-based packaging market is undergoing rapid growth put mainly still at development stage. The momentum towards refillable and reusable packaging is increasing, with an abundance of initiatives being seen in areas such as dry food, household goods, and personal care products.

Recycling initiatives continue as some of the most frequent sustainability measures, powered by the rigorous commitments from international Plastic Pacts, packaging tax regulations and internal pledges.

The Nine Trends →

The innovations featured track ThePackHub's nine trend areas:

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Naturally done

This month, we've seen a continued emphasis on biobased packaging, with an introduction of 25 initiatives in this area. The development of biodegradable, compostable packaging, and novel biobased substitutes to plastic are continuing unabated. Nevertheless, the absence of widely available industrial composting infrastructures in many markets significantly hinders widespread adoption.

Moreover, there is an ongoing concern that compostable and biodegradable packages might contaminate existing recycling processes. Despite these hindrances, the bio-based packaging industry is experiencing strong growth, with numerous new projects underway, many of which may never reach store shelves.

However, the adoption of these innovative packaging solutions is not yet widespread among major brands, and their use is primarily confined to small, emerging brands seeking to establish a unique sustainable angle.

In recent times, the development of seaweed packaging has emerged as a particularly robust area.

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Stationery manufacturer moves to transparent fibre-based window

A three-way collaboration has resulted in developing a transparent fibre-based window for an eraser product. French stationery brand Maped worked with Finnish fibre materials producer Ahlstrom, and German flexible packaging supplier adapa to move away from the previous classic blister pack. The new pack utilises Ahlstrom's Cristal base papers which are said to be ideal for transparent packaging. Cristal is made from natural cellulose fibres, yet the paper offers the same level of functionality and durability as traditional plastic packaging. By using renewable and biodegradable materials, Cristal offers a sustainable alternative without compromising on quality. The entire process, from papermaking to converting, was 100% made in France. By working with regional divisions of the parent companies, Maped's overall product footprint was reduced through this collaborative value chain. A spokesperson for Ahlstrom said that the collaboration between the companies was an example of their shared commitment to sustainability and responsible business practices.

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Researchers develop biodegradable film that extends shelf life

As petroleum-derived packaging materials degrade very slowly and are rarely recycled, the food industry is investing in developing more sustainable packaging alternatives that preserve nutritional quality and organoleptic traits such as colour, taste, smell, and texture. To this end, a Brazilian research group in São Paulo state, have developed a film made of a compound derived from limonene, the main component of citrus fruit peel, and chitosan, a biopolymer derived from the chitin present in exoskeletons of crustaceans. The group focused on limonene because Brazil is one of the world's largest producers of oranges and São Paulo is the leading orange-producing state. Chitosan was chosen for the film matrix because it is a natural polymer with well-known antioxidant and anti-microbial properties. The films are not yet available for use by manufacturers, mainly because chitosan-based plastic is not yet produced on a sufficiently large scale to be competitive.

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Spanish university develops biodegradable packaging from agri-waste

Researchers from the Higher Technical School of Industrial Engineers of the Polytechnic University of Madrid (UPM) have led a study in which they have managed to develop biodegradable active packaging from agri-food waste. The extraction of particles and nanoparticles with active properties from agri-food waste, such as yerba mate, coffee, algae, fruit peels and, kombucha drink allows these wastes to be revalued, giving them a second useful life. The extraction of natural additives from agro-industrial residues has shown that residues can be used to obtain bioactive components of interest to the plastic materials industry since they not only improve the mechanical and thermal properties of biopolymers but also provide them with specific properties that allow the shelf life of food to be extended without the need to add preservatives. Furthermore, once the materials have reached their useful life, they disintegrate under composting conditions in approximately one month.

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Bioplastic with added nanomaterials extends food shelf life

A team of scientists from the Institute of Organoelement Compounds of the Russian Academy of Sciences, Moscow, have developed a composite film for food packaging based on vegetable polymers, which protects food from ultraviolet radiation, bacteria and moisture while allowing it to breathe. The proposed material could be used for packaging applications. The composite film is completely biodegradable and therefore could be a good alternative to multi-layer non-recyclable packaging. The team also found a way to extend the shelf life of this film, by introducing tea tree oil microparticles wrapped in nanocontainers. Experiments have shown that the developed films have antibacterial properties and block ultraviolet radiation, to slow down spoilage of products. In addition, the proposed materials showed good wear resistance, strength and moisture resistance.

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Biodegradable plastic dissolves in water leaving no trace

Solutum is an Israeli company that has developed a novel bioplastic material that dissolves and biodegrades when placed in water (fresh or marine) at ambient temperature after a predetermined delay time. Natural microbes found in all types of water break down the plastic into carbon dioxide, water, and biomass, leaving no toxic residue or resulting microplastics or nanoplastics. Solutum's product can be used for a multitude of single-use packaging applications, including bags and shrink wrap, and can be manufactured on existing production lines. Solutum's biodegradable material stands up to conventional plastic's capabilities. The compound can easily replace resin in the converting process and produces a higher tensile strength, more extended elasticity, and a more potent puncture-resistant alternative to conventional plastic. Solutum is able to offer their bioplastic with a range of predetermined temperatures and dissolving times, allowing a broader range of plastic applications and substitutions.

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Brazilian researchers create biodegradable film from collagen and essential oils

Researchers from the Federal University of Santa Maria, Brazil, have created biodegradable packaging based on collagen and essential oils. The researchers originally tested starch, rice husks, avocado pits and other by-products for the creation of the film. They then decided on collagen, as its extraction was already being carried out in the university's laboratory. Essential oils were then added, which, when applied to packaging, can prevent contamination and prolong the shelf life of products. To produce the film, the collagen fibre is mixed with a material with a function similar to detergent to mix water and oil. Then a glycerol plasticiser is added, which modifies the elasticity and resistance, and then polyvinyl alcohol, a synthetic polymer, biodegradable and soluble in water, is added. The drying process takes time and is completed in 24 hours. Presently it is still a laboratory-scale prototype, but there is apparently equipment in Brazil to upscale the process.

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Indian company uses seaweed to make sustainable, compostable products

Sea6 Energy is a seaweed company based in Bangalore, India, that focuses on cultivating and processing tropical seaweed species. The company has developed a proprietary cultivation mechanism called the SeaCombine, which can simultaneously harvest and replant seaweed in deep ocean waters, enabling cost-competitive production at scale. The company has also developed technologies to convert fresh seaweed into environmentally friendly products for various industries. Products that Sea6 produce include compostable bioplastic films that can be used for packaging FMCG goods and fast foods. These films, when discarded into the environment, will compost in a few months. They also produce a bioplastic coating intended to replace the plastic coatings on paper products for food and non-food applications. The compostable coating is grease-proof and heat sealable. They also produce a biodegradable bioplastic straw that does not become soggy as paper straws are prone to do.

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Researchers develop edible material made from bio-cellulose

Researchers at The Chinese University of Hong Kong (CUHK) have developed an edible, transparent and biodegradable material made from bio-cellulose that they believe has considerable potential for applications in food packaging. A team at CUHK has turned its attention to bacterial cellulose (BC), an organic compound derived from certain types of bacteria, which has garnered attention as a sustainable, easily available, and non-toxic solution to the use of plastics. Unlike the cellulose found in the cell walls of plants, BC can be produced through microbial fermentation, eliminating the need for harvesting trees or crops and making it a more sustainable material alternative to plant cellulose. The study demonstrated that the plastic alternative could completely degrade within 1-2 months. The material developed is also edible, making it safe for sea life to consume without causing aquatic toxicity in the ocean.

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Patented process for food packaging claims CO2 emission reduction of 95%

Envirocor says it is a leading Indian manufacturer of sustainable food packaging. Their products are called Oko, which the company says is “earth-friendly packaging”, and is made from plant-based, home-compostable and recyclable materials. Oko food packaging suits all types of food, is non-toxic, is made from unbleached paper and is sealed with a leak-proof plant-based lining. The company’s production of Oko material is made on their patented Cortec-Revolution systems and is said to be unique regarding CO2 reduction and sustainable raw material supply. Their use of manufacturing technologies that require no heat input reduces CO2 emissions by up to 95% to comparative material. One of the many unique features of the Cortec-Revolution process is that it produces a V-shaped fluted structure that the company calls V-Strong Flute incorporated into the Oko material. The fluted structure adds strength and rigidity. Envirocor’s packaging uses no adhesive during manufacture as it is ultrasonically sealed.

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Project looks to produce bioplastics from Honduran agrowaste

A project partially funded by the Agencia Española de Cooperación Internacional (AECID) has been studying the evaluation of different Honduran agrowaste, taro (a root vegetable), yucca, and banana as raw materials for bioplastics. The study successfully produced stable flours with suitable characteristics after a process of drying and grinding the agrowastes. The study found that banana bioplastics had the best mechanical properties (with a Young's modulus around 300 MPa), while taro bioplastics had the highest water-uptake capacity (200%). The study's findings suggest that agro-industrial wastes can be used as raw materials for bioplastics, with the developed bioplastics possessing inherent properties that make them ideal for various industries, including the food, cosmetics, biomedical, and agricultural sectors. Overall, the research contribution of this study is significant as it presents a sustainable alternative to traditional plastics and promotes the circular economy in the agro-industrial sector.

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Universities develop bioplastic from pineapple waste

Universities from Thailand and Malaysia have collaborated to develop a new bioplastic using pineapple stems from agricultural waste. The researchers created a bioplastic sheet using a byproduct of the bromelain industry, especially utilising the leftover pineapple stems from agricultural waste. The team used the starch from the pineapple stems as the main ingredient. They added glycerol and calcium carbonate to make the material easy to shape and give strength. By altering the proportions of these ingredients, the team made samples with different strengths and properties. The newly developed material was found to be resistant to water and did not absorb as much water as similar materials. When buried in soil, it completely degraded into tiny pieces in a time span of just two weeks. The team made a test version of a bread clip using this material, which reportedly served its purpose efficiently.

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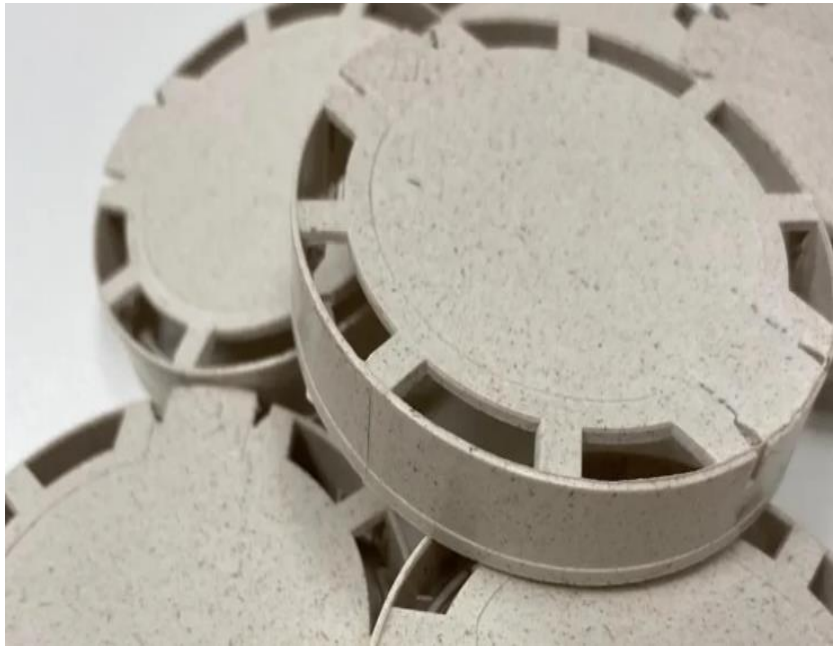
Partnership with brewing giant replaces keg caps with compostable eco-resin

Highline Beta is a startup co-creation company that launches new ventures with leading corporations and founders. It has brought together international brewers AB InBev and erthos, who create plant-based alternatives to traditional plastics. Ethos started by developing compostable alternatives to styrofoam but then moved to China to further develop compostable resins. Highline Beta helped design AB InBev's 100+ Accelerator, which is dedicated to working with startups with innovative solutions to four key challenges: climate action, circular packaging, smart agriculture and water stewardship. Having previously had contact with ethos, Highline Beta put them in touch with AB InBev and decided on two products they wanted to produce using erthos eco-resin: keg caps and 6-pack rings. By replacing just these two products, in one year alone, they will be able to reduce CO2 by 5.2 million kg, and divert 3,000 tonnes of plastic (equivalent to 350 million plastic bottles).



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Sustainable shoe packaging is made from seaweed

Ales Grey is a Los Angeles-based certified sustainable footwear company. The company collaborated with Oakland-based Sway Innovation to replace the industry standard cardboard box with compostable packaging, which is made from seaweed. The 100% biobased, home or industrial compostable film guards against dust and scuffing while eliminating over 50% of the overall packaging. Sway's packaging is sapphire blue in colour, said to be reminiscent of pristine ocean water. The packaging also uses a band to communicate the fact that the seaweed-based pouch is "plastic-free", with information about ocean-farmed seaweed and how it helps coastal communities and improves their ecosystems. Sway sources seaweed from ocean farms and processors, who harvest and dry the seaweed. Processors extract its natural polymers. Sway then blends these polymers with renewable starches and sugars, and then transforms this proprietary formulation into packaging with the help of manufacturers.

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Biomaterial made from eggshells allows up to 50% plastic reduction

Taiwan-based Spark Sourcing's GEX bio-calcium is a resin derived from eggshells. The resin is produced through a multistep process and transformed into an ultra-fine bio-calcium powder with particles as small as one micron, which is then pelletised. It is claimed that the resultant material can be blended with virgin plastic and achieve a plastic content reduction of between 30% and 50%. GEX is said to pair well with recycled plastics and bioplastics to create sustainable products. It is also compatible with PP, PE, HDPE, PET, EVA, PS, ABS, rubber, PVC, and PLA. It can be used in processes such as injection moulding, blow moulding, film blowing, calendaring, thermoforming, and vacuum forming. All products manufactured with the resin are apparently recyclable, and the resin aims to help companies meet upcoming plastic reduction mandates. The material has already been granted patents in the US, UK, Taiwan, and China with an Australian patent pending.

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Compostable bioplastic made from powdered algae

A team of researchers led by the University of Washington has developed a bioplastic that will degrade in the home compost bin. It's made entirely from powdered spirulina, a type of blue-green algae commonly used as a dietary supplement that is more often mixed into a drink as a powder or taken in a tablet for those on a health kick. Using heat and pressure – the same process used to create conventional plastics – the researchers formed the spirulina powder into various shapes. This means that if the process was to be increased to industrial scales, redesigning manufacturing lines from scratch would not be necessary. Spirulina was chosen because it can be cultivated on a large scale, and its cells sequester carbon dioxide as they grow, making it carbon-neutral and potentially carbon-negative.

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Breakfast cereal producer switches to compostable packaging

Yorkshire-based Parkside Flexibles has partnered with premium breakfast cereal producer Yockenthwaite Farm to develop a pack that replaces the original polypropylene (PP) bag and paper label packaging with a new bag-in-a-box format. A home compostable laminate bag made from Parkside's patented Park2Nature material is used. Park2Nature is manufactured from renewable resources such as plant fibres and has accreditation from PEFC (Programme for the Endorsement of Forest Certification). Park2Nature is TÜV certified as home compostable and decomposes in less than 12 weeks in Industrial composting and 26 weeks when composting at home at ambient temperatures. The project with Yockenthwaite Farm highlights the potential of Park2Nature in applications with high barrier requirements, as the granola must be protected against moisture and oxygen ingress throughout the supply chain. Park2Nature Is the result of over a decade of intense R&D to develop a fully-accredited home compostable, high-performance flexible packaging material.

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University develops edible packaging from olive oil production waste

Researchers at the Lodz University of Technology, Poland, have developed a technology for producing edible packaging and tableware. The team's invention uses post-production waste from the oil industry and the addition of flour from the grain industry. Olive pomace obtained after obtaining oil from them constitutes 70-80%. Olive pulp is a by-product with high nutritional values. The pomace is characterised, among others, by a high antioxidant potential, and also contains valuable omega acids, which is why it was chosen as the base for edible packaging. Packaging and dishes made according to the technology developed are edible and contain a lot of dietary fibre and health-promoting compounds. The researchers say that the products made of the mixture will biodegrade in a maximum of 30 days. The packaging can be used for hot and cold drinks, serving liquid dishes or loose food products. The process has already been submitted for patent protection.

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Indian company uses waste sugar cane fibre to make pulp tableware

Yash Pakka is the Indian manufacturer of CHUK pulp tableware made from agri-residue. The company uses waste material from sugar production, using the leftover fibrous stalks, which had previously been burnt. The company says that the short fibres of sugar cane residue are ideal for making the differing shapes of their plates and bowls. Their products are left the natural colour of the fibres, so no bleaching chemicals are used. Once the consumer has finished with their container, it can be composted in around 180 days. The company supplies fast-food restaurants, business canteens and caterers. The range of products includes plates and bowls, including leak-proof options. They are also ovenable, microwavable and freezable. The company produces compartmentalised plates with either three, four, five, or eight compartments. They can also supply what they call the 'Party Caddy', which contains ten plates, spoons and tissues.

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Absorbent clay sachets replace conventional dessicant packs

Switzerland-based chemical company Clariant has launched Desi Pak ECO, a bio-based, absorbent natural clay alternative to conventional desiccant packs. The material used for the sachet is made of paper from sustainably grown raw materials, and only water-based inks and adhesive are used. The clay inside the sachets is highly absorbent bentonite clay granules as an alternative to the synthetic desiccants traditionally used. Operators can request packs containing clay desiccant that comply with relevant U.S. FDA (21 CFR) and with U.S. Pharmacopeia USP <670> testing requirements for Auxillary Packaging Components. Sachets are available in standard 1g, 2g, 5g, 10g, and 33g sizes, while custom sizes are also available. Its potential applications are said to include clothing and textiles, automotive, machinery, tools, nutraceuticals, and food. An LCA carried out suggests that its simplified production process results in a lower carbon footprint and reduced consumption of both energy and water.

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Premium label papers are made from recycled material and hemp

Multinational manufacturer of adhesive materials Avery Dennison, has announced the launch of a range of four labelling papers crafted from recycled pulp and alternative fibres for the premium packaging segment. The new label range consists of Fasson rPaper Black FSC, Fasson rMartelé Black FSC, Fasson rMartelé Blanc FSC papers made from 100% recycled fibres, and Fasson Hemp 50% FSC from hemp fibres. The company says that these solutions are particularly beneficial for industries such as wine, spirits, craft beverages, gourmet food, beauty and fragrances, where brand differentiation is paramount. The company says that the launch of this range of labels comes at a time when industrial regulations, company environmental policies, and consumer demand contribute to the growing need for sustainable labelling and packaging solutions. These labels will be available in Europe, the Middle East and North Africa regions.

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Researchers develop cellulose film with increased flexibility

Cellulose-based films have been around for over a hundred years and are once again being considered to be a replacement for fossil-based plastics. These films, however, possess little flexibility and elongation. Now, researchers from South Dakota State University have been looking at ways of adding plasticiser during film preparation to soften them and help improve the film's flexibility and workability. For this project, the team have been looking at plasticisers such as glycerol and sorbitol, and results have shown that glycerol-added films possess higher flexibility, solubility, water absorption and water solubility than sorbitol films, while tensile strength is high for sorbitol. All the films biodegrade more than 80% at 24% moisture content within 30-60 days. The researchers will continue to investigate cellulose-based films as an alternative, emphasising cellulose extraction through agricultural byproducts. The team plans to use corn cobs and soyhulls as the cellulose source and make films.

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Patent granted for plant-based soluble paper

Ohio-based SmartSolve have developed what they say is an innovative, water soluble, plant-based packaging solution. SmartSolve is made from bio-based materials, primarily wood pulp from FSC (Forestry Stewardship Council) certified forests, combined with biopolymers. When the material comes into contact with water, the inert content dissolves, and the wood pulp fibres pull apart into tiny microfibres. Then, naturally occurring microorganisms and bacteria, found in abundance throughout the earth, break down the remaining wood pulp fibres, allowing the pack to biodegrade fully, leaving no waste. The company has plans to go to market early in 2024, with the material aimed at food packaging with low barrier requirements, such as dry powders and granular products, which are usually bag-in-box types of packaging. SmartSolve was awarded a patent in early 2023 for a combination of water-soluble paper and any biopolymeric coating. It has also been independently validated as “drain-safe” and flushable.

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Degradable adhesive has similar properties to conventional products

Scientists from the University of Surrey have developed an experimental new degradable adhesive which is described as being very similar to that used on commercial packaging tape. The challenge with conventional adhesives is that machinery at municipal recycling facilities often gets jammed up with adhesives utilized on items such as jar labels and cardboard boxes. Adhesive waste can also clog the facilities' water systems and even make its way into what ends up being lower-quality recycled materials. While other degradable adhesives do exist, most of them lack the strength of their conventional counterparts. The key ingredient of the new adhesive is a chemical additive known as thionolactone, which makes up just 0.25% of its composition. The adhesive is degraded via the simple processes of either aminolysis (a chemical reaction with ammonia) or thiolysis (a reaction with a molecule called coenzyme A).

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Japanese cake served in edible packaging

In the Yamanashi region of Japan, near Mount Fuji, a local signature cake is called Kikyo Shingen Mochi. This rice cake is traditionally served in slices in a small, square plastic container, dusted with kinako soybean powder, topped with kuromitsu (brown sugar syrup), and eaten with a wooden toothpick-like utensil. Many complain that it's hard to eat out of its plastic container, digging out bits of jiggly mochi from a flimsy plastic box, so the maker of Shingen Mochi, Kikyoya, has come up with a new way to serve it: in an edible container. Only a limited number of products are sold each day, and because it's a high-demand item, customers are limited to one box of each size. The packs are priced at 700 yen (£4.75) for the three-pack or 1,800 yen (£12.20) for the eight-pack and are available at Kikyoya stores in Ichinomiya, Kofu, and Kobuchizawa.

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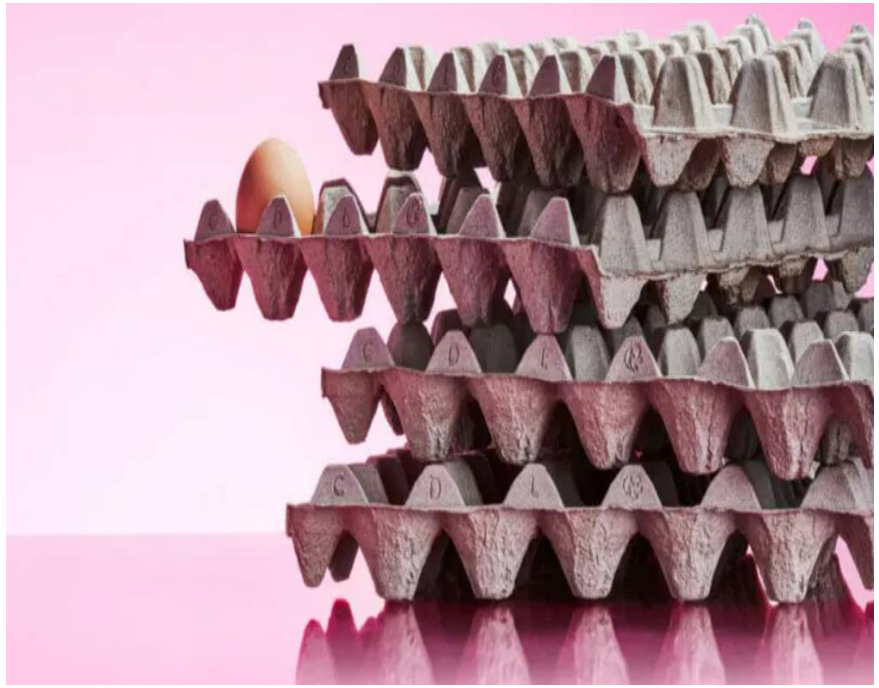
Manufacturer of moulded fibre products goes digital

France-based moulded fibre packaging producer Omni-Pac Group are collaborating with HP Development to digitise its industrial moulded fibre production. HP's Moulded Fibre Tooling solution offers a customised digital solution for increased efficiency and sustainability. The solution includes new HP Moulded Fibre Advanced Tooling technology that optimises manufacturing processes and delivers high-quality products with improved performance through Computational Fluid Dynamics (CFD) and custom features such as logos and patterns. HP's technology also improves the sustainability of moulded fibre packaging solutions by reducing the carbon footprint during tooling and part production, resulting in lighter parts with equal or better performance. Omni-Pac has also calculated that by going digital, they can save over 500 tons of CO2 per machine per year, and they expect that CO2 reduction will continue to improve through extending their working relationship with HP.



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The Online Surge

The e-commerce industry has experienced substantial growth in recent times, and this trend is influencing packaging development. The COVID-19 pandemic has accelerated this trend, as the need for online-specific packaging remains significant.

The e-commerce market has seen a significant spike due to the pandemic, as consumers worldwide shift from physical stores to online platforms. A significant number of these consumers are online shopping for the first time, and it is likely that many will continue to do so. The role of shopping and packaging has changed permanently as a result.

As the e-commerce market continues to expand, there are increasing opportunities for brands and retailers to offer packaging solutions that are tailored specifically for this channel, rather than simply replicating the packaging used in physical stores. Packaging designed for e-commerce does not require the same level of security measures, as the purchase decision is made on a screen and bright on-pack messaging is not necessary. Additionally, packaging does not need to be explicitly designed to be attractive on a physical store shelf.

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Home delivery meal company chooses zero-waste packaging

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Collaboration on sustainable air capsule packaging for e-commerce

U.S.-based global materials science company Dow is collaborating with Procter & Gamble China (P&G China) to develop an air capsule packaging system designed for the e-commerce sector. This initiative aims to facilitate recyclability and reduce packaging waste. The air capsule design offers product protection and reduces packaging material weight by 40% compared to traditional corrugated parcel boxes. The packaging, made entirely of polyethylene (PE), offers features such as a tamper-free opening, an easy-to-tear strip, and an auto-deflate function for effortless disposal. Furthermore, it requires less trucking and storage space. The rise of e-commerce has inevitably led to increased packaging waste, and through this collaboration, Dow and P&G aim to provide solutions that balance performance, sustainability, and recyclability. This partnership aligns with P&G's commitment to achieving 100% recyclable or reusable packaging by 2030.

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Home delivery meal company chooses zero-waste packaging

The Minnow delivers meals, prepped and ready to cook, to families in Portland, Oregon, whose ingredients are primarily sourced from local farms and product makers. Minnow was founded as a circular meal delivery service with convenient delivery and pick-up service using zero-emissions vehicles. As a company dedicated to sustainability and ethical practices, Minnow sought a packaging solution that would reflect these values while keeping their meals safe and fresh during delivery. Minnow partnered with Bold Reuse (also based in Portland) as their reuse service provider for meal delivery. Together, they developed a zero-waste packaging strategy that carefully selected reusable thermal bags, containers, and ice packs for durability and versatility. After use, customers rinse and empty the containers and return them to the insulated bags. These bags are collected the following week, cleaned, sanitized, dried, repackaged by Bold Reuse, and reused.

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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.

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Pre-cut aluminium foil sheets aimed at foodservice industry
Multi-dose smart blister pack wins European award
Easy-open pouch concept aimed at snacking market
New material could be used for self-opening and closing packaging
Advancement in customizable dispensing technology
New foil ring-pull for cans reduces carbon emissions

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Pre-cut aluminium foil sheets aimed at foodservice industry

Prowrap is a Bristol-based manufacturer of cling film, aluminium foil and baking parchments for the foodservice industry. The company has now launched pre-cut foil sheets, aimed at catering operations where speed and efficiency are key. The packs of 500 sheets are supplied in a practical pop-up dispenser box and are interleaved for easy dispensing, ensuring that each durable, tear-resistant sheet is ready to use. Made from premium-grade aluminium foil, the 270mm x 300mm sheets, the company says that they are ideal food wraps for serving burritos, burgers, sandwiches and kebabs, retaining the heat and ensuring the contents maintain a fresh, premium appearance. Also, as the pre-cut sheets are thicker than most foil available on rolls, it means that there's no need for double-wrapping. The sheets are made in the UK, with both the foil and its packaging being recyclable.

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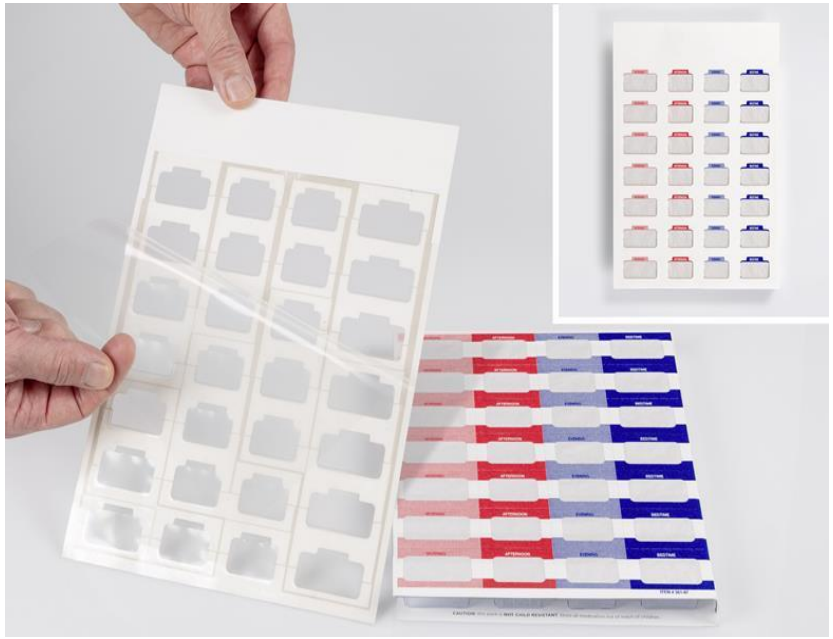
Multi-dose smart blister pack wins European award

Munich-based Schreiner MediPharm has been awarded a prize by the European Association of the Self-Adhesive Label Industry (FINAT) for its Smart Blister Card, which takes the multi-dose blister pack to another level, by enabling tracking of medication intake in real-time. Complex medication plans do not always make it easy for patients to take the right medicine at the right time, which may have serious consequences. After filling and sealing the blister pack, the card is simply attached to the back of the pack without impairing the filling process, meaning the technology can be inconspicuously integrated into the packaging design. Data is generated as soon as the patient pushes tablets out of a cavity, such as the exact time of pill removal, the respective cavity, and the dose it contains. The data is stored in the Smart Blister Card and transmitted to a database via a smartphone app or a reader using NFC or Bluetooth technology.



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Easy-open pouch concept aimed at snacking market

Finnish packaging manufacturer Walki has announced the launch of what it says is a new, easy-open pouch concept for the snack segment. The pouch is constructed with a laminate of an MDO-PE (Machine Direction Oriented) film and a newly developed LDPE-based film. The pouch features a laser perforation along the centre of the side gusset fold of the bag, which is the starting point for the opening. By weakening the laminate in a controlled way, the material is thin enough to allow for a controlled pouch opening but still thick enough to protect the snack inside. The consumer opens the pouch in the centre, and the opening starts to tear in both directions until it reaches the cross seams that are transverse to make the pouch stable. As it is a mono material, this makes it easy to recycle. The pouch was developed closely with Fernwald, Germany-based packaging machine producer Rovema.

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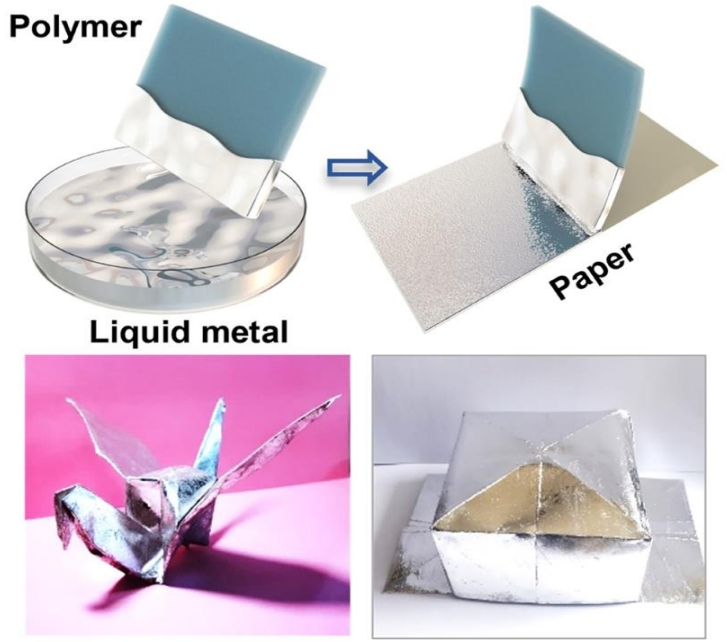
New material could be used for self-opening and closing packaging

Scientists at Tsinghua University in China have developed a liquid metal coating that can transform regular paper into a newly fabricated material with additional functionalities, such as improved electrical conductivity, increased stiffness variability and enhanced thermal conductivity. The researchers say that the coated paper has potential for making multifunctional smart materials from applications in wearable sensors, actuators, intelligent switches and printable circuits, to packaging boxes that could open and close by themselves. Using a stamping technique, the team applied the formulated liquid alloy to paper eliminating the need for adhesives. The metal-coated paper retains the ability to be folded and can be switched between soft and rigid states via phase change of liquid metal. Besides the mechanical performance, the authors highlight that the treatment is reversible, meaning the paper can return to its original state after peeling off the liquid-metal coating.



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Advancement in customizable dispensing technology

Selig Group, a leading packaging solutions provider, showcased its innovative PortionPeel dispensing technology and Ecoflex PP mono material packaging material at Interpack 2023. The PortionPeel technology, offering both hermetic container closure and easy opening, can be customized for various applications, including tablets, liquids, powders, or granules, and helps promote sustainability by eliminating the need for neck adjustments and complex dispensing closures. This technology is consumer-friendly and designed with an easy-open tab. The Ecoflex packaging material, made from recyclable polypropylene and certified by RecyClass, is seen as being ideal for manufacturers in the baby food, confectionery, snacks, and pharmaceutical sectors. Alongside these solutions, Selig presented its foam liner ranges and OenoSeal bottle seal for the wine industry. Its foam liners offer both single-layer and multi-layer options, while the OenoSeal provides an excellent oxygen barrier, ensuring no adverse impact on wines and preventing volatile sulphur compounds.

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New foil ring-pull for cans reduces carbon emissions

Swiss metal packaging manufacturer Eviosys has announced the launch of a new closure designed to replace the ring pull on food cans. Ecopeel replaces the ring-pull with foil, which is directly sealed onto the body of the can. It is said to reduce carbon emissions by 20% per can due to the lighter material. A spokesperson for the company said that the sealing surface for the new format closure was “created with the inclusion and the reduction of food waste in mind”, and also that the 45° angle reduces the force necessary for opening and allows for 100% full access of the can. Ecopeel has been developed with Eviosys’ customers, Jealsa and Friscos. Eviosys is also in discussions with other businesses across Europe to enhance the product’s rollout and expand the range to other markets, including pâté, pet food, and olives.

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The packaging industry is experiencing a substantial shift in materials, primarily driven by objectives centered around sustainability. The replacement of plastic remains a priority for many brands and retailers, as they seek alternatives that may provide a smaller environmental footprint or at least be more favourably received by consumers focused on anti-plastic initiatives. This month, we tracked 21 new initiatives in this direction.

ThePackHub continues to document numerous cases of brands and retailers transitioning primarily from plastic to other, often paper-based, alternatives. While some substantiate their moves with positive environmental impact data, not all changes can withstand rigorous environmental examination. The truth is that we're currently in a period of substantial transformation, where recyclable plastic is often replaced with different materials because consumers perceive it as the environmentally conscious choice. Most material changes typically follow significant investments in machinery and novel processes. These changes are made with a long-term view, and any backtracking seems far in the future.

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Stand-up pouch format for water reduces CO2 emissions

Brazilian water brand Oh a Água has launched its alkaline water in what it calls “ecological bottles”. The company was not comfortable with the usual methods of packing water, such as PET (polyethylene terephthalate) bottles, glass or Tetra Pak formats, all of which use more than three different materials, all being seen as heavy and demanding a lot of energy and CO2 emissions to produce. The technology used by Oh a Água resulted in a ‘stand-up pouch’ bottle weighing only 3 grams. It is tamperproof, BPA-free, with no migration of chemical products into the liquid. The patented packaging is a mono material, which is 100% recyclable. Compared to traditional water packaging, the Oh a Água pouch is reported to generate 75% less waste by weight. CO2 emissions are also 70% lower due to the cold manufacturing process and at the end of its lifecycle, the pouch has reduced electricity use by 90%.

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American toilet paper manufacturer switches to paper packaging

American pulp and paper company Quilted Northern, is launching paper packaging for their bestselling packs of its Ultra Soft & Strong line, making it the first national toilet paper brand to offer recyclable paper packaging in major retailers. The new paper packaging replaces the previous LDPE (low density polyethylene) wrapper, and the company was keen to find a solution with the same attributes, namely puncture and water resistance. The new paper format, therefore, was designed to withstand potential tears and punctures throughout the supply chain, from the manufacturing facility in Louisiana to the customer's home, and while not 'waterproof,' the paper packaging was designed to provide adequate water resistance to protect the product during normal transport by the customer. The new packaging incorporates some adhesive coatings, but these do not affect recyclability. The new paper product also runs on existing equipment with minor modifications.

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Gene editing could make paper-making more sustainable

Scientists at North Carolina State University have used CRISPR gene editing to adjust the genomes of poplar trees to make them easier to turn into paper products. CRISPR gene editing is a genetic engineering technique in molecular biology by which the genomes of living organisms may be modified. In paper and board-making, lignin, a natural polymer which is found in plants that gives strength, must be removed during the process. So, the researchers have been experimenting with growing plants with less lignin. Traditional breeding methods can take years to see progress, so scientists are using CRISPR gene editing techniques that could make that turn-around much faster. Downstream, the team modelled how much more sustainable pulp production could be from these CRISPR trees. They found that reducing lignin could help mills produce up to 40% more fibres more sustainably, and reduce greenhouse gas emissions from the process by up to 20%.

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Berry producer launches paper packaging in UK supermarkets

California-based Driscoll's, who are a global market leader for fresh strawberries, blueberries, raspberries and blackberries, has announced that it has launched its branded paper pack offer into a major UK supermarket for the first time. Driscoll's, who originally launched their paper pack in the UK in Wholefoods in 2021, will now supply Asda stores across south-east England and also Booths' stores, expanding its availability in the UK for consumers. It is also the first time Driscoll's will feature British-grown berries in the paper pack. This expansion aims to help retailers and consumers reduce their reliance on plastic, offering consumers the chance to purchase berries in a paper pack format that they can recycle. With the change to FSC-certified paper instead of plastic, the amount of plastic in the packaging is reduced by 94% – the pack does feature a little plastic – a recyclable window.

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US specialty paper maker launches range of barrier papers

Pennsylvania-based Pixelle, the supplier of specialty papers, has launched a new range of barrier paper solutions, called ARMOR. The range has been launched as a more sustainable alternative to single-use plastic packaging. It offers barrier protection from mineral oil, oxygen, and various aromas for chocolate packaging. It also provides oil and grease resistance and a moisture vapour barrier. The company says that such barrier packaging solutions can also be used individually or in multiple layers to offer a more enhanced packaging performance. The ARMOR portfolio features two per and polyfluoroalkyl substances (PFAS)-free and plastic-free product lines – FlexArmor and SelectArmor. FlexArmor has been designed for uncoated applications while the SelectArmor line has a coated surface to provide enhanced printability. The FDA has certified the portfolio for use in direct and indirect food applications.

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Insulated packaging manufacturer switches from plastic to paper

Munich-based easy2cool manufactures insulating paper-based packaging for temperature-controlled shipping. Their paperfloc Eco-Liner bag contains shredded recycled paper to insulate cold products, keeping contents frozen or chilled for up to 48 hours. The company's problem was that the outer layer was a mono PE (polyethylene), so they approached global sustainable packaging company Mondi to try and find a more sustainable alternative. Mondi offered easy2cool their FunctionalBarrier Paper, which ensures that no condensation water – naturally occurring during the insulation process – reaches the insulation material where it could compromise its integrity. It also seals the packaging, offering a strong, shock-absorbent outer layer to keep the contents safe. This development means that easy2cool's customers can opt to deliver their goods in responsibly sourced packaging created from renewable resources, in the form of insulated pouches or liners within a corrugated box.

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British noodle snack to trial paper-based packaging

British instant snack brand, Pot Noodle, part of the Unilever stable, will conduct a limited trial on a 90% paper-based pot design. The pilot of 500,000 pots will be launched exclusively in Tesco stores on their Chicken & Mushroom flavour. Unilever expects the trial to last approximately four weeks, after which they will return to plastic, while the company collates and assesses customer feedback. The company has the ambition to roll this innovation out across the whole portfolio in the near future. Unilever's packaging and manufacturing teams have been developing and refining the paper pot for over three years, significantly reducing plastic usage while ensuring the packaging retains its shape and delivers the same quality eating experience. The pots can be recycled at home with other cardboard and paper packaging, including OPRL recycling labels. Unilever has estimated that the move could remove 4,000 tonnes of virgin plastic each year.

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UK supermarket moves own-label steaks to board-based packaging

UK supermarket chain Sainsbury's has announced that it is moving away from plastic trays to a board-based alternative for its own brand steak range. The move means that the new packs now contain 70% less plastic than the previous pack. Sainsbury's says that the move will result in a saving of 249 tonnes of plastic per annum. The trays can be recycled at home by rinsing the cardboard before placing them in a kerbside recycling bin. The new format was originally introduced for its Taste the Difference and So Organic steaks and is now being rolled out on the full range of ten steak products. The move is part of Sainsbury's Plan for Better commitments, through which the company is trying to reduce plastic packaging across its own brand ranges. The new packs will be available in stores from July 2023.

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Juice brand launches paper wrapping for its straws

Sustainable juice brand Flawsome has introduced a new carton range titled “Wonky Fruit Water”, targeted at children’s lunchboxes and featuring paper wrapping for its straws. This paper-based packaging initiative, a reported first in the children’s soft drink sector, is expected to reduce the company’s plastic usage by 252 kilograms and halve its carbon footprint compared to the average small juice brand. Each 200ml serving of the Wonky Fruit Water is fortified with iron, vitamin D, and vitamin C, contains no more than 39 calories, and up to 8.5g of sugar. Co-founder Karina Sudenyte expressed her excitement about the launch, highlighting Flawsome’s commitment to sustainability and innovation in its operations.

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Malaysian water bottles go label-free

Malaysia-based bottled water company Spritzer has launched label-free bottles for its silica-rich Natural Mineral Water product. The label-free bottles will be available on the company's 1.25 litre and 550ml mineral water offerings, and the bottles are also 100% recyclable and made from recycled plastic. Initially, these bottles will have a limited distribution, being available only through the company's online store and at the Spritzer EcoPark, located near Air Kuning in Taiping, Perak, next to the Spritzer headquarters. The company said that there is no change in the quality and taste of the water itself. Introducing label-free bottles is part of its commitment towards reducing plastic usage while minimising environmental impact. The move also aligns with the company's commitment to become a fully circular brand by 2030.

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Food-grade sustainable paperboard uses 70% less chemicals

Brazilian paperboard manufacturer Ibema's Naturale paperboard is their offering for customers looking for a more sustainable option. The company says that Naturale is a high rigidity product that is produced with a renewable source and 70% less chemical addition. Naturale is made of uncoated paperboard, with the top ply and bottom ply being made of unbleached hardwood kraft pulp and the middle ply of high bulk mechanical pulp. The company says that it is ideal for packaging fast food, delivery, and takeaway, as it is suitable for direct food contact. Other potential uses include cosmetics, personal and home hygiene and e-commerce items. Naturale is available in a range of grammages, from 200 to 320 gsm. A spokesperson for Ibema said that consumers want fully sustainable experiences, from the packaging to the product, and Naturale was launched to meet those needs.

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Salad producer moves to peel and reseal format, reduces plastic use by 35%

California-based Earthbound Farm is a producer of organic salad products. They have announced that by moving their salad blends to a peel and reseal format, they have eliminated around 35% of its plastic use. The company has calculated that this equates to 3.5 million pounds (1.59 million kgs) of plastic annually. The company says that the reduction was achieved due to replacing a rigid top film and also removing top and base labels. Consumer feedback has been reported as very positive, with consumers citing freshness, improved sustainability, and convenience. On the back of this innovation, the company has launched three new Bright and Crunchy blends that bring new flavour, colour, and crunch combinations to the organic salad set. They are Romaine + Butter Crunch, Little Gem Kale Crunch, and Little Gem Butter Crunch.

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Whisky packaging redesign reduces bottle weight by 32%, CO2 emissions by 65%

Islay-based whisky brand Bruichladdich has collaborated with Glasgow design agency Thirst Craft, who specialise in working with leading beverage brands. While having secondary packaging had previously been a sign of luxury, both Thirst and Bruichladdich identified that the outer tin had become an unnecessary embellishment, and removed it. Thirst also redesigned the shape of the bottle, giving it a smaller neck and a slimmer profile. The previous Classic Laddie bottle contained an average of 15% recycled glass, whereas the new version has around 60% recycled content and is also 32% lighter than its predecessor. The new shape and increased use of recycled materials seek to reduce Bruichladdich's global environmental impact, as it can now transport 60% more bottles per pallet, cutting its CO2 packaging emissions by a reported 65%. Other sustainable features include using a water-based, organic ink coating and the polypropylene closure and cork, made from synthetic resin from bio-based sources.

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Rewinding machine produces coreless aluminium foil rolls

Italian machinery manufacturer IMS Technologies recently launched the Rotomac Icebreaker 167, a rewinding machine producing coreless aluminium foil rolls. The standard solid board core is replaced by just a thin paper sheet at the heart of the roll, positively impacting operating costs and the environment. The absence of a core reduces stock and logistics costs of around -87.5%. Weight and storage are also reduced, as a box of cores is 10 kg, containing 280 items, whilst 10 kg of paper sheets are around 1500 items, taking up less storage space. CO2 emissions are also lowered: for the same number of rolls produced, the number of trucks needed to deliver paper sheets is 1/8 the number of trucks that would be necessary to transport traditional cores. Glue is also not needed because the inner edge is wrapped without using hot melt glue compared to standard cores.

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Flavour company chooses sustainable, cost effective bulk shipping solution

Turkish flavour company Aromsa, whose products include sauces, toppings, extracts and seasonings, was faced with a challenge. A new customer wanted to use stainless-steel containers for shipping. This would have required investment to purchase approximately 250 stainless-steel containers, a costly packaging solution. In addition to the high price, there are also the logistical costs of storage and maintenance, washing and sterilising the containers. To find a more sustainable and cost-effective solution, the company approached Mondi, who proposed their TankerBox. After a few months of close collaboration and innovation at the Aromsa facilities, the TankerBox was ready for Aromsa's commercial use. The TankerBox's optimised design creates cost advantages from efficiencies in storage and logistics, as it does not need to be chemically cleaned or returned as empty cargo. Additional benefits include easy handling and integration into filling lines as well as printability for branding opportunities.

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University develops new glass that is 10x stronger and has lower emissions

Researchers at PennState University have developed a new glass product they are calling LionGlass that is said to be ten times stronger than regular glass, while also requiring significantly less energy to produce. This new family of new glass compositions swaps out the soda ash and limestone for non-carbonate materials – the exact composition of which is still undisclosed, due to the pending patent. Swapping out the carbonates not only cuts their direct emissions during melting but lowers the required temperatures by up to 400 °C (720 °F). That reduces the energy consumption by about 30% and, as such, cuts their emissions. The researchers also found that some compositions of LionGlass were found to boost crack resistance that was at least ten times higher than that of standard soda lime glass. The team has filed for a patent and hopes to be able to bring it to market soon.

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Champagne brand moves to ‘virgin tree-free’ board for gift box

For its EcoYellow gift box, luxury champagne producer Veuve Clicquot has moved away from board made from virgin fibres, to one made from 50% recycled paper and 50% hemp. Hemp was chosen due to its reported environmental benefits, as it absorbs four times more CO2 than a hectare of forests. Also, the hemp used has been sourced locally from La Chanvrière, who are situated 120 km (75 miles) away from Veuve Clicquot’s Reims production site, meaning reduced CO2 emissions. The development team’s challenge when working with hemp was achieving the Clicquot sunburst-yellow tint on the material. Hemp also makes the paper more sensitive to temperature and humidity variations, and the sheets tend to vary in size, making varnishing and embossing more challenging. Companies involved include Italian company Favini, which converts the hemp to paper, and DS Smith, who converts the hemp and fibre paper into gift boxes from its plant in Angoulême, France.

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Glue-free packaging solution enhances sustainability with Dotlock technology

Crailsheim, Germany-based Schubert Group are always researching and developing new concepts together with their partners. The business has announced the introduction of Dotlock, a technology for glue-free cardboard bonding. The novel solution is an entirely new type of technology designed to assemble cardboard boxes without glue. By eliminating glue, Dotlock helps conserve raw materials and energy while simplifying the recycling process. This technology works by finely piercing overlapping materials at selected points and pressing the folded-over cardboard fibres to create a tension-resistant bond, yielding a sturdy pack. Schubert Group is currently working on fully automating this packaging process.

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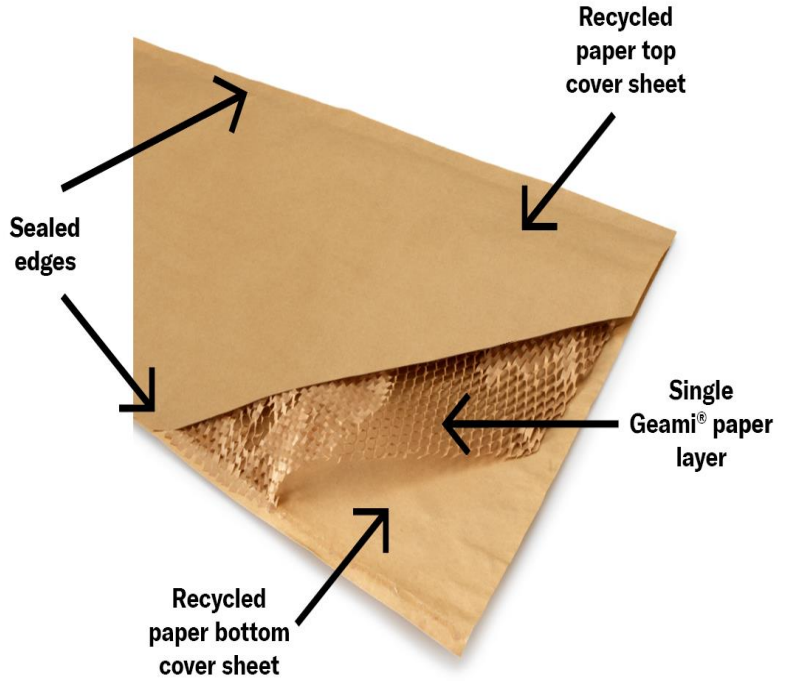
Thermal protection for food and beverages with recyclable paper liner

Ohio, USA-based Ranpak has developed an innovative solution for sustainable thermal protection of food and beverages known as RecyCold climaliner. This paper thermal liner can maintain stable temperatures for frozen, chilled, and ambient products for up to 48 hours, offering protection from temperature fluctuations. Conveniently, climaliner pads are ready to use upon delivery and are available in predefined standard liner lengths, satisfying 90% of conventional customer needs. Through a dedicated distribution network, these liners widely available throughout the USA. The climaliner is more than 98.5% paper, making it recyclable, renewable, and biodegradable. Its thin, paper-based packaging optimizes box volume and size flexibility while saving on return flow costs. It reportedly offers a unique unboxing experience due to its strength, paper-based structure, and user-friendly design, with custom liner printing available upon request.



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Dairy co-operative funds development of fibre-based milk bottle cap

Scandinavian dairy co-operative Arla has formed a partnership with Swedish start-up Blue Ocean Closures, who specialise in sustainable closures. The businesses are edging closer to the introduction of a new cap made from biodegradable and recyclable fibre material. The closure would reduce Arla's plastic consumption by 500 metric tons annually. Due to Blue Ocean's novel vacuum press forming technique, the cap can be made of a bio-based material that can degrade in the ocean or preferably be recycled as paper. The material consists of FSC-certified fibre with a thin coating for protection. Caps make up around 23% of plastic packaging used in Arla's cartons, and the company is now focusing on reducing the closure's environmental impact to reach its commitment to eliminate fossil-based virgin plastic in packaging by 2030. Blue Ocean will use funding from Arla Foods to develop a fully functional cap prototype and complete testing in early 2024.

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Protect and Preserve

Solutions that prolong shelf life, decrease food waste, and safeguard contents have both environmental and economic benefits. We continue to observe new developments in this area. The COVID-19 pandemic has led to an increase in supply chain-based initiatives that aim to safely distribute vaccines.

Preventing food waste remains a crucial goal, and we are monitoring various packaging formats that have been engineered to reduce food waste. It is widely reported that between 33-50% of all food produced globally goes to waste, with a value of over $1 trillion. Advancements in technology are playing a role in addressing this issue, with many recent developments using technology to detect and communicate changes in the state of food. Packaging plays a vital role in minimizing food waste. In this section, we will focus on examples that enhance the environment by extending shelf life or reducing waste, as well as packaging that protects the product through improved secondary packaging solutions that take into account environmental or cost considerations.

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Colour-coded stickers help extend shelf life of fruit and veg

Colombian supermarket chain Makro and creative agency Grey Colombia have launched Life Extending Stickers, an initiative that seeks to extend the lifespan of fruits and vegetables by providing consumers with information and recipe suggestions based on their level of ripeness. The colour-coded stickers, which are like any traditional 1 sq. inch produce sticker, are an initiative that addresses the global and local issue of food waste in a simple way using colours, not technology. Consumers can gauge the ripeness of their fruits and vegetables using the colour of the label as a guide, and have a recipe via Instagram suggested for using them according to their level of ripeness. Makro have created a series of easy-to-prepare recipes for each stage, mainly for the ripest stage. According to Colombia's National Planning Department (DNP), approximately 6.1 million tons of food are wasted yearly in Colombia.

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New first-to-market oxygen absorber eliminates PFAS

Mitsubishi Gas Chemical has launched a first-ever PFAS-free (per- and polyfluoroalkyl substances) oxygen absorber. PFAS, known as “forever chemicals,” have been under public scrutiny for their inability to break down in the environment and because of potential adverse health effects. Mitsubishi has revolutionised its absorber technology by eliminating PFAS and replacing them with an advanced proprietary formula to meet new stringent regulations. By removing a toxic grease-proofing agent from its oxygen absorber, Mitsubishi is introducing a packaging solution that is 100% PFAS-free but doesn’t compromise quality, performance, and safety. Mitsubishi’s AGELESS oxygen absorber can create a 99.9% oxygen-free pack within 24 hours, which keeps a variety of foods fresh without the use of unhealthy preservatives – drastically extending product shelf life, reducing waste, and improving product quality. It can protect and preserve various products, including processed meats, baked goods, dried fruits, coffee, pet treats, and pharmaceuticals.

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Russian scientists develop sustainable antibacterial food packaging material

Russian scientists have developed an innovative food packaging material that decomposes rapidly when exposed to the environment, offering a potential solution to the environmental issues caused by excessive consumption of oil-based plastics. Infused with antibacterial tea tree oil, it is reported that the material can preserve various food types outside of refrigeration for several weeks. Valentin Novikov, the project leader from the Moscow Institute of Physics and Technology (MIPT), said plans were underway to enhance the material's mechanical and water-resistant properties. Although currently ten times more expensive than polyethylene, Novikov expressed optimism that the cost would decrease in the future. The scientists confirmed the material's superior capabilities over polyethylene through various tests with fruit products and anticipate that it could extend the shelf life of most foods that do not release much water during storage.

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Champagne producer moves to digital traceability solution

Belgian supply chain solutions provider Zetes is supplying champagne producer Maison Burtin with digitalised traceability solutions through automated processes using new label printing, application and picking technologies. Maison Burtin chose the ZetesAtlas, a packaging execution system that provides identification, serialization and aggregation on packaging lines, combined with Zetes MD smart printing and applicator labelling stations. These systems are linked to the warehouse solution ZetesMedea to improve order fulfilment. ZetesMedea allows warehouse workers to perform tasks quicker and more accurately, from goods-in to goods-out. The project originated because large retailers and logistics companies required Maison Burtin to identify their products with an EAN 128 code. All champagne cases leaving the site must be marked with adhesive labels containing a specific organized set of information. With its traceability guarantee, Maison Burtin says it can now provide all its customers with optimised service quality.

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Polypropylene containers chosen for freezer integrity

Gat Foods is an Israel-based global supplier of advanced fruit-based solutions for the beverage and cereals industries. It has chosen two distinct packaging options from Berry Global to provide absolute freezer safety for its range of high-quality fruit juice concentrates. Gat decided that Berry's 21L SuperCube container and 280ml custom version of its UniPak container were ideal for their requirements due to both packs' robust design that ensures product protection and integrity throughout the supply chain. In addition to freezer safety, the PP (polypropylene) Berry containers have provided important additional benefits to Gat Foods' palletising processes and packaging artwork quality. Previously, the vulnerability of the lids to cracking prevented the automated palletising of the large containers, resulting in the need for manual sealing of each drum using a hammer. The introduction of Berry's SuperCube has enabled Gat Foods to automate this process, saving significant time and streamlining its operations.

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Tech companies join forces to increase QR code security

Prague-based PiQR has entered a strategic partnership with London QR code solutions provider Unitag in an effort to increase brands' confidence in on-pack QR codes by optimising their security, copy-detection, and authentication, as QR codes have become a prominent target for counterfeiters. The partnership between Unitag and PiQR expects to result in secure and accessible QR solutions that enable brands to use QR codes in their packaging. This includes dynamic content delivery, product authentication, loyalty programmes, and real-time consumer engagement. Enhanced copy protection from PiQR will apparently authenticate an on-pack QR code's validity and provide further access to such features as detailed product information, promotions, and instructional videos. The companies say that their mission is to empower brands to engage with their customers more effectively and personally, ultimately enhancing customer experiences and driving business growth.

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Packaging systems provider introduces coating technology for PET bottles

Packaging solutions provider KHS India has introduced Plasmax coating technology for beverage packaging in PET bottles. The Dortmund-based KHS Group, which holds a 60% stake in the Indian operation, has invested ₹50 crore (£4.74m) in order to expand its facility on the outskirts of Ahmedabad. KHS India says its Plasmax coating combines a glass bottle's protective properties with a PET container's lightweight benefits. With the Plasmax technology, the coated bottle's inside is covered with an ultra-thin protective layer of glass. Products such as fruit juice, wine, beer, soft drinks, ketchup, sauces and other liquid foods will get an additional layer of protection to retain their quality, taste and nutrients. KHS India exports 20-25% of its overall order book and witnessed a steep increase in demand for beverage packaging solutions.

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Colour-changing smart packaging signals food spoilage

Researchers from the Department of Chemistry and Industrial Chemistry at the University of Genoa, Italy, have developed an innovative smart packaging technology to tackle the issue of food spoilage, a problem that leads to foodborne illnesses affecting one in six Americans annually. This smart packaging changes colour to signal spoilage, offering a more efficient alternative to laboratory-based amine detection methods, which are considered time-consuming and costly. This is achieved by using a sensor embedded in the packaging, which reacts to amines, byproducts of protein degradation in foods like meat, fish, and dairy. The sensor consists of alternating polymer layers forming photonic crystals. When they interact with amines in the packaged food's air, these layers swell, causing a colour change visible to the naked eye. To overcome the problem of false negatives due to bond reversibility, a compound was added to the polymer layers, creating an irreversible bond with the amines. The technology has demonstrated high accuracy and reliability in lab tests, with the potential for commercial scalability.

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In pack label can double shelf-life of fresh produce

Fresh Inset is a Polish technology company in the post-harvest freshness preservation and food-tech space. Their product, called Vidre+, is a solution with a timed and gradual release mechanism that allows produce to be treated by 1-MCP directly in packaging. 1-Methylcyclopropene (1-MCP) is a synthetic compound used in agriculture to delay the ripening process of fruits and vegetables. 1-MCP has been used worldwide for about 20 years and is Generally Regarded As Safe (GRAS) by the U.S. Food and Drug Administration. Vidre+ also works by blocking the effects of ethylene. However, the Vidre+ delivery system provides a next-generation application of 1-MCP, which the company says is game-changing technology. Vidre+ is 1-MCP application on stickers, which means that producers can change a punnet, carton, clamshell, etc., from just a pack into a smart freshness system, meaning a sealed environment infrastructure or qualified application staff is not required while also being affordable.

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E-label for wine can provide required information for new EU legislation

Cellr is an Australian technology start-up focusing on connected packaging, brand protection, and consumer engagement. Upcoming EU legislation coming into force from December 2023 will require wine sold in the EU to declare ingredient, allergen and nutrition information on its labels. In preparation for this, Cellr have created an e-label featuring a QR code that can be implemented onto bottle labels so packagers can cleanly incorporate the upcoming required information without crowding the bottle's look. EU label legislation has approved e-labels to deliver ingredient and nutrition information on wine bottles, thereby enabling Cellr's solution. The digital solutions company says its product allows winery production, sales and export teams to set up label artwork now, with the opportunity to change and update the e-label content as more clarity on legislation is delivered. The e-label can also provide information such as manufacturing details, sustainability certifications and product history.

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Researchers develop packaging that alerts consumers of contamination

Researchers at McMaster University in Ontario, Canada, have developed a tray that can alert consumers that salmonella or other dangerous pathogens are present in raw or cooked food packs, such as chicken. The prototype tray, shaped rather like a shallow boat, is lined with a food-safe reagent that allows a built-in sensor to detect and signal the presence of salmonella. The technology can also apparently be readily adapted to test for other common food-borne contaminants, such as E. coli and Listeria. The sloped sides of the tray direct juices to a sensor embedded in a window at the bottom. Without the need for any additional lab work, users can scan the underside of the sealed pack with a mobile phone and know immediately whether the food is contaminated. The team has worked to make the new contamination sensor as adaptable and economical as possible.

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Cellulose-based crystals could be used for indicating product damage

Researchers at Switzerland's Empa Research Institute have developed what they say are bio-based and inexpensive 3D-printed sensors that change colour to indicate whether something has become too warm or has been subjected to too much stress. The technology involved in the development is a substance known as hydroxypropyl cellulose (HPC), which is already utilised as a carrier for active ingredients in things like pharmaceuticals and foods. HPC forms liquid crystals when mixed with water. Thanks to the microstructure of those crystals, they only reflect certain wavelengths of the visible light spectrum, causing them to appear as those colours when viewed by the human eye. The same principle is naturally utilised by vividly coloured butterfly wings, among other things. The scientists have so far utilised the technology to produce a seven-segment numeric display and a strain sensor that changes colour in response to a piezoelectric (the process of using crystals to convert mechanical energy into electrical energy) current generated by mechanical deformation.

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Advancing product protection with innovative security labels for luxury items

Austrian-based security label producer Securikett is enhancing its product protection services with the introduction of DiamondVOID. This innovative security label is specifically designed for brand owners, aiming to provide robust protection against counterfeiting for luxury products without compromising their aesthetic appeal. The fully transparent DiamondVOID labels are applicable to any product packaging and feature unique opening effects which visually enhance the packaging. When the label is peeled off, a previously imperceptible motif becomes visible, creating an unforgettable unboxing experience for consumers. Customization options allow company logos or corporate designs to be seamlessly integrated. Securikett's DiamondVOID labels, originally developed for champagne boxes, represent a simple yet effective solution to increase the protection of high-value products from counterfeiting and tampering.

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Recycling Resurgence

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Recycling Resurgence

This comprehensive segment encompasses both recycling initiatives and packaging that now integrates more recycled content. Numerous instances of mono-material developments and other measures aimed at boosting recycling rates are reported. The advent of Packaging Taxes, influencing packaging recycling, is also on the horizon. The UK has already set this in motion in April 2022, implementing a tax on plastic packaging with less than 30% recycled content. These activities inevitably drive the demand for packaging reduction efforts.

However, there's still a significant journey ahead in terms of consumer education and the crucial transformations needed in infrastructure and capabilities to enhance recycling rates. We're seeing an increase in the number of chemical recycling initiatives, albeit modest at this stage. Mechanical recycling processes continue to be the prevailing method for delivering recycled packaging, and this trend looks set to continue.

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Cross-industry collaboration boost European recycling of PS yoghurt pots

In a cross-industrial collaboration, Plastiques Venthenat, Amcor, Olga, Cedap, and Arcil-Synerlink have developed a form-fill-seal yoghurt pot composed of 98.5% polystyrene (PS), designed to streamline sorting and recycling processes. Polystyrene is the primary plastic resin used in European yoghurt and dessert packaging, with the form-fill-seal machines highly compatible with this material. The collaboration was prompted by a 2019 eco-design project call from not-for-profit recycling experts CITEO. The outcome was a ‘standard yoghurt and dessert cup’ now constructed from a polystyrene film, ink, and heat seal varnish, leading to a pack that reported as 98.5% PS. This new design improves recycling efficiency, as confirmed by tests with existing near infra-red sorting technologies, and supports recycling polystyrene back into the same packaging, adhering to RecyClass and COTREP’s recyclability guidelines.

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Partnership looks to chemically recycle currently unrecyclable plastic

German waste and recycling management company PreZero, and British multinational oil and gas company Shell have announced that they have signed a cooperation agreement to develop a chemical recycling solution for currently unrecyclable plastic waste. As mechanical recycling cannot handle certain types of plastic waste, it ends up being incinerated or sent to landfill instead of keeping it in the loop. The two companies are partnering to bridge this gap in the recycling system, and will to that end, develop a number of joint projects, with each company bringing its own specific expertise to bear. PreZero will leverage its experience in feedstock collection, sorting, and pre-treatment to develop new solutions for selecting and converting plastic waste into plastic recyclates. Shell will develop, scale and deploy technologies to establish a process to transform plastic waste into the chemicals needed to produce new plastics.

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Fruit juice manufacturer moves to tethered cap ahead of EU legislation

Austrian fruit juice and iced tea manufacturer Pfanner Getränke is rolling out its first few containers with closures that remain firmly attached to the packaging. Starting in July 2024, all caps on drink bottles or composite cartons in the EU must remain attached even after the bottle or container has been opened. The tethered caps are intended to reduce the amount of waste entering the environment and increase the recycling rate. The company made the decision to move to the new cap ahead of the upcoming legislation, and contacted Alpla, another Austrian company located close to Pfanner's factory. Pfanner chose the 'click' variant of Alpla's Soul solution. The cap can be bent up by about 160 degrees after opening and locks into place after a click to prevent the cap from springing back. The company says that the simple, safe and convenient solution quickly became a success.

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Roll out of 100% recyclable bottle cap commences

Kraft Heinz will soon equip its Heinz Tomato Ketchup squeeze bottles with a ‘100% recyclable’ cap, a shift expected to make the entire pack suitable for standard kerbside collection and facilitate the recycling of 300 million plastic caps annually. The mono-material cap is designed for seamless recycling and replaces the flexible silicone valve in the previous hard-to-recycle cap. Arriving at this mono-material alternative was not without its challenges. The process reportedly spanned nine years and entailed 185,000 hours of development. The cap, constructed from polypropylene (PP), consists of two components forming an indirect outlet for dispensing the product when the bottle is squeezed. When the consumer releases their grip, air surges back in, generating a controlled portion. It reportedly took forty-five iterations to successfully emulate the existing closure’s performance. Heinz’s research indicates that the revamped cap assists consumers in extracting more ketchup from the nearly emptied bottle. Bottles featuring the new design will be clearly identifiable via a ‘100% recyclable’ imprint on the cap. Initially, the caps will be utilised for 400ml and larger top-down bottles of Heinz Tomato Ketchup and its 50% Less Sugar and Salt variants.

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Food giant joins digital deposit return scheme pilot in Wales

Nestlé has announced that it is participating in a first-of-its-kind recycling trial in Brecon, Powys, in South Wales. The company's Buxton water bottles will form part of a Scan|Recycle|Reward digital deposit return scheme (DDRS) trial, encouraging those living and working in the town to claim 10p rewards for recycling by scanning uniquely labelled drink containers. Participants in the pilot will be able to scan single Buxton bottles of all sizes, with their mobile phones and then recycle the packaging through their kerbside collection or using return points around the town. A Nestlé spokesperson said they were excited to work on the large-scale DDRS trial, seeing it as a great opportunity for them to understand how digital solutions may be incorporated into a deposit return scheme and how a digital recycling solution can engage with consumers. The trial runs for 12 weeks.

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US winery moves to 100% rPET bottles

The Ron Rubin Winery, based in California, has announced the launch of the first premium wine bottle made from 100% recycled PET (polyethylene terephthalate) in the United States. Working in partnership with Amcor Rigid Packaging, a global packaging leader, the wine brand, called BLUE BIN has customised 750ml bottles that are designed to be smaller, lighter, shatterproof, and fully recyclable, introducing wine to the places it used to not go, such as campsites, boats, the pool, and the beach. Ron Rubin Winery conducted a two-year formal assessment of wine packaging to develop a premium wine for eco-conscious wine lovers. Each 100% recyclable BLUE BIN bottle is lined with KHS's Plasmax, an ultra-thin protective layer of glass, to ensure the wine's taste and quality. It's estimated that glass bottles account for 30% of wine's carbon footprint – the single biggest factor – and less than 30% of wine bottles in the U.S. are actually recycled.

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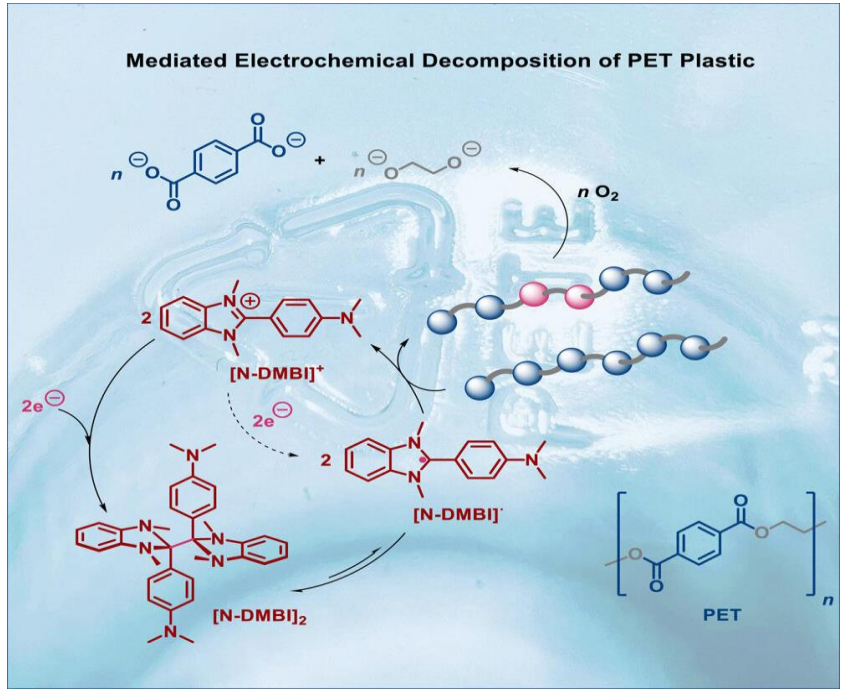
Researchers use electricity to recycle PET

Scientists at the University of Colorado, Boulder have developed a new way to recycle one of the most common types of plastic, PET (polyethylene terephthalate), used often for drinks bottles. The chemists ground up plastic bottles then mixed the powder into a solution. Next, the team added an extra ingredient, a molecule known as [N-DMBI]+ salt, to the solution. It was explained that in the presence of electricity, this molecule forms a “reactive mediator” that can donate its extra electron to the PET, causing the grains of plastic to come undone. Using only tabletop equipment in their lab, the researchers reported that they could break down about 40 milligrams (a small pinch) of PET over several hours. They were able to break down the PET into its basic building blocks – which the group could then recover and, potentially, use to make something new.



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Innovative packaging format encourages battery recycling

Ontario-based Better Battery Co is a start-up that wants to make it easier for consumers to recycle their products. The company sells boxes of the most common batteries used by households, such as AA and AAA. The packaging also doubles as a container for their return, simplifying the recycling process. The box, which is made from recycled cardboard, is designed to help the user identify which batteries are new and which are used. The batteries sit tidily inside the box, with individual slots to keep them in place. The batteries are organised in a winding trail, so the consumer can take out one battery at a time. Each one has a white end and a blue end. When the consumer puts a used battery back in the box, they turn it upside down, making the white end visible. When the trail path has turned from blue to white, it's ready to recycle the batteries.

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Collaboration brings food grade PE packaging to market

Canadian producer of PE (polyethylene) resins, NOVA Chemicals Corporation has collaborated with Illinois-based flexible packaging manufacturer Pregis. They will bring to market high-performing, sustainable packaging solutions for food applications that are used in stand-up pouches, fitment or spout pouches, and lay-flat bags. The resin to be used in this collaboration is NOVA Chemicals' recycled polyethylene, SYNDIGO rPE-0860-FC resin. It leverages state-of-the-art production technology and is a low-carbon solution allowing for superior performance ideally suited for food packaging applications. Excellent printability and clarity are said to be achieved in the final product because of the outstanding aesthetic features. NOVA Chemicals and Pregis are dedicated to meeting the evolving needs of customers while reducing their environmental footprint. By collaborating on developing food-safe circular packaging, brand owners and retailers can now access options that allow their products and packaging to directly contribute to a circular economy for plastics.

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Cleaning products company moves to 100% PCR HDPE bottles

International plastic packaging company Berry Global has created a range of reusable bottles for Hull-based cleaning products manufacturer Bio-D. The bottles are made from 100% PCR (post-consumer recycled) plastic. The company has calculated that by moving to the recycled bottles CO2 emissions are reduced by 13 tonnes per annum compared to bottles made from virgin plastic. The range of HDPE (high-density polyethylene) bottles includes 750ml, 1L and 5L sizes for a range of liquid products, including laundry liquid, fabric conditioner, dishwasher rinse aid, washing up liquid and home & garden cleaner. Berry explained that it was essential that the bottles delivered a high level of performance, most notably regarding durability and longevity. The new bottle's design is said to facilitate reuse, as it can be refilled multiple times at over 300 refill stores across the UK. Furthermore, the bottles can finally be recycled at their end of life.

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Sustainability boost with 70% recycled plastic in lubricant packaging

Spanish energy company Cepsa is escalating its sustainability efforts as part of its Positive Motion strategy, aiming to significantly increase the use of recycled plastic for its lubricant packaging. Following its previous success in producing packaging with 30% recycled plastic, Cepsa now aims to increase this percentage to 70%. The company will also use labels made from 100% recycled material. These initiatives are projected to prevent the consumption of over 350 tons of virgin plastic annually, reducing CO2 emissions by more than 430 tons per year. While the changes have been implemented in smaller containers (1, 4, and 5 litres), Cepsa plans to replace the current 20-litre plastic drums with metal ones soon. The company will implement these packaging changes on its new production line at the San Roque lubricant manufacturing and packaging plant, which promises enhanced safety, increased productivity, and reduced environmental impact by using energy-efficient technologies.

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Mono-material bag innovates packaging for cosmetics and hygiene items

Wiener Neudorf, Austria based Adapa has introduced an enhanced EcoString bag composed of 80% post-consumer recycled (PCR) content, designed for hygiene and cosmetic items. This mono-material solution features both the bag and the drawstring made from highly printable polyethylene, ensuring complete recyclability. The bag's previous viscose drawstring has been replaced with a plastic one, maintaining functionality while ensuring ease of recycling as no component separation is required. Available as pre-made bags with holes for simplified order picking, EcoString bags are one of the thinnest on the market, starting at film thicknesses of 30 µm, thus conserving resources. The drawstrings are made from bag production edge trimmings, further emphasizing resource conservation. Adapa offers up to ten high-quality colour prints on the bags, with matte or glossy finish options for enhanced visual appeal. The challenges of utilizing PCR materials, such as sourcing high-quality PCR and adhering to quality and consumer protection specifications, are effectively managed by Adapa in-house.

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Trials bring goal of recycled food-grade PP closer

Three-way collaboration between Nextloopp, the organisation that promotes food-grade recycling of PP (polypropylene), Norwegian recycling systems provider Tomra, and Belgian packaging producer MCC Verstraete, who are suppliers of IML (in mould labelling) packaging progresses food-grade recycling of PP. The companies successfully trialled adhesive-free and fully printed PP label wrapping dubbed NextCycle IML for removing ink residues from IML surfaces, which have previously been problematic in food-grade recycled plastics. Trials were undertaken at Tomra as part of Nextloopp's lead-up to demonstrate its PolyPPRISM technology, which sorts packaging using luminescent materials encoded on labels or sleeves. The trials, which resulted in 100% purity and 100% yield during internal tests, propel the multi-participant project a step closer to its goal of producing high-quality recycled food-grade PP. Through the technology, brands can have fully decorated IML containers that are used over natural PP substrates to provide a separate stream of natural PP free from print and label residues.

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Film recycling achieved through carbon dioxide process

The COTooCLEAN project by UK plastic recycling consultancy Nextek is pioneering a new technology aimed at facilitating the recycling of post-consumer polyolefin (LDPE, LLDPE, HDPE, PP) films into food-grade material. Current recycling methods, utilizing a mixture of aqueous or organic solvent washing, drying, and thermal desorption, are energy-intensive and fail to meet food-grade compliance. COTooCLEAN's unique process employs a Supercritical Carbon Dioxide (ScCO2) cleaning process, a non-toxic, non-flammable, and non-corrosive solvent that selectively removes contaminants, yielding food-grade quality recyclate. In a single step, this process can remove oils, inks, adhesives, labels, and chemical contamination from post-consumer polyolefin films. COTooCLEAN anticipates establishing a valuable market for polyolefin films. Its potential for global adoption due to its simple integration into existing mechanical recycling processes further enhances its projected impact.

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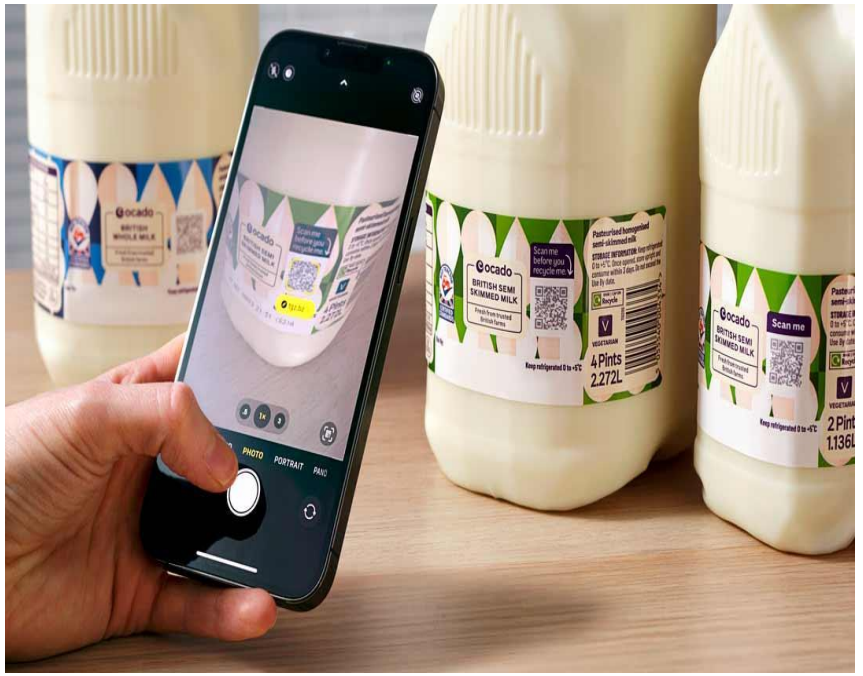
UK online grocery retailer trials digital deposit return scheme

A three-way partnership of UK online retailer Ocado, along with recycling technology company Polytag, and recycling app provider Bower is testing the viability of Digital Deposit Return Schemes (DDRS) through a world-first recycling reward initiative. Customers can scan one of the unique-every-time QR codes printed onto Ocado's Own-Brand two and four-pint milk bottles. The first 20,000 codes scanned will see consumers receive a 20p reward which will appear in their digital wallet in the Bower app. The serialised codes can only be scanned once, preventing consumers from repeatedly claiming back a deposit from the same pack. Additionally, the Bower app uses in-app GPS technology to validate that the consumer is claiming their reward from the correct bin by standing within a close distance of a registered home recycling bin. In addition, the on-pack QR codes also enable brands to access real-time data on packaging lifecycles, including if, when and where packaging is recycled.



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Partnership brings 100% recyclable vacuum film to market

US chemical company Dow has formed a partnership with German flexible packaging company Klöckner Pentaplast to develop KP Flexivac, a multi-layer recyclable vacuum film. Flexivac has been certified 100% recyclable as PE (polyethylene) by recycling centre cyclos–HTP and recycling alliance Interseroh. The product uses Dow‘s Fusabond technology, making the film recyclable without compromising performance or aesthetics. KP Flexivac’s high tensile strength is suitable for packaging bone-in fresh meat and poultry cuts. Combined with its hermetic seal, the films offer food protection and safety throughout the supply chain. A spokesperson for Dow said that the company’s compatibilizer offering enables the recyclability of barrier films, which they say is the first step towards a circular economy for food packaging flexible films.

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New joint venture to enhance recycling of secondary plastic packaging

Agricultural film recyclers LyondellBasell and AFA Nord have launched a 50:50 joint venture, named LMF Nord, to boost the circularity of secondary plastic packaging. The partnership will focus on recycling post-commercial flexible secondary packaging waste into high-quality recycled plastic. The companies plan to construct a mechanical recycling plant in Northern Germany to convert Linear Low Density Polyethylene (LLDPE) and Low Density Polyethylene (LDPE) waste into reusable plastic materials. These materials are commonly used in stretch or shrink films safeguarding consumer goods during transport and storage. Production at the new plant is set to begin in early 2025. The venture aims to address the industry's challenges in recycling secondary plastic packaging into premium raw materials suitable for packaging. The initiative underscores the commitment of LyondellBasell and AFA Nord to sustainability and the advancement of the circular economy.

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Beverage carton recycling line opens in Poland after €29m investment

A joint investment of €29 million (£24.8 million) by Tetra Pak and Stora Enso has resulted in the opening of a new beverage carton recycling line in Poland. It is hoped that this new line will triple the country's annual recycling capacity for beverage cartons, taking Poland's annual beverage carton recycling capacity from 25,000 to 75,000 tonnes, as well as absorbing additional beverage carton volumes sold in Czechia, Hungary, Slovakia, Latvia, Estonia, and Lithuania. The line in Ostrołęka handles the separation of beverage carton materials, detaching fibres from polymers and aluminium to recycle them into cardboard materials. As such, it aims to close the loop on paper packaging materials and reduce the use of virgin fibres. An increased beverage carton recycling rate throughout Central and Eastern Europe aims to support the circularity goals in the EU's Packaging and Packaging Waste Regulation, demonstrating the beverage carton industry's commitment to its targets.

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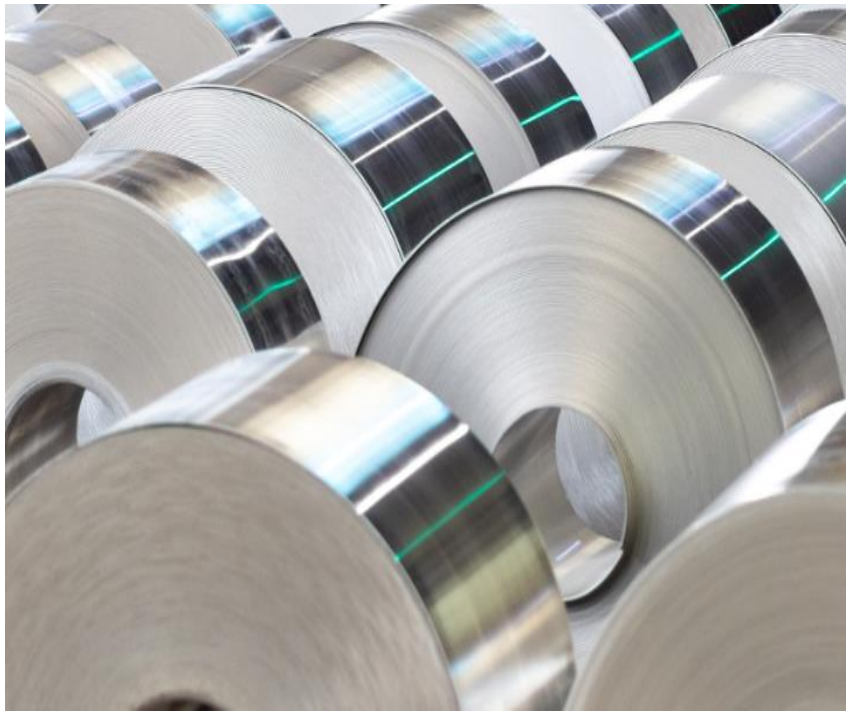
CO2 emissions reduced by over 50% for new screwcaps

France-based Amcor Capsules and European aluminium supplier Aludium (previously known as Alcoa) have formed a partnership to produce a low-carbon aluminium product for use in screwcaps. The companies say that this new product delivers a more than 50% reduction in carbon, compared to the average footprint for primary aluminium sold in Europe. The combined use of recycled content and low-carbon primary aluminium means that the new technology produces less than 4 tonnes of CO2 equivalent per tonne of aluminium, from raw material extraction up until delivery. Amcor's spokesperson said they were passionate about bringing more sustainable products to market. They say that they are already leading the market with 96% of products being recycle-ready. But they intend to go further and reduce the levels of CO2 emitted during manufacturing. The new aluminium screw caps are said to offer a more sustainable alternative for wine and spirits brands and distributors.



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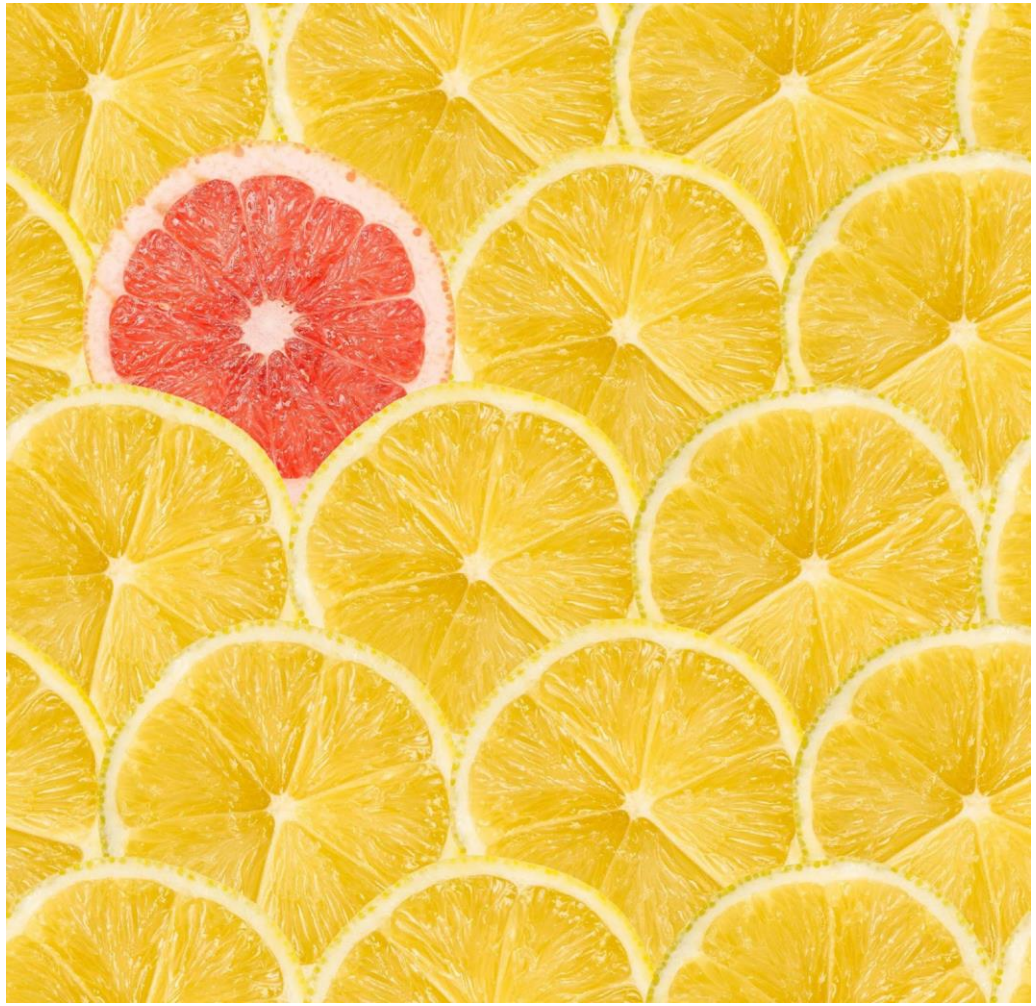

Getting Noticed

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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.

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Australian can maker installs digital printing solution

Indian batter mix pack features improved dispensing and product visibility

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Australian can maker installs digital printing solution

Orora Beverage Cans, based in Victoria, Australia, has launched a first-to-market high-speed digital printing solution, Helio. Helio is being touted as a game changer for customisation of can design and decoration, while also enabling fast speed to market for new products and promotions. To deliver the technology, Orora has signed an agreement to team with Israel-based global provider, Velox-digital, to supply new direct-to-shape digital printing solutions, a first for this region. In terms of the agreement, Orora will purchase Velox-digital printing machines, inks and consumables. The new line will be installed in June next year and running by Q3 2024. Orora is launching Helio now and says they are already engaging in conversations with brand owners as they plan summer campaigns for next year. Due to Helio's strong in-house can decoration capability, the company says that this digital solution adds even greater value to Orora's customer service offering.

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Indian batter mix pack features improved dispensing and product visibility

iD Fresh Food, based in Bengaluru, southern India, has announced the launch of iD Squeeze & Fry Vada Batter 2.0, which the company says will create a new benchmark in the food industry. The new packaging will include a resealable section that allows consumers to add their preferred masalas/condiments into the vada batter. Vada is a category of savoury fried snacks and can be described variously as fritters, cutlets, or dumplings. The upgraded spout of the 2.0 version ensures that finer particles can pass through it and that the batter doesn't stick around the dispensing area. This time the pack has been revamped with a transparent window so that consumers can see if the masala is mixed. The company says they have incorporated all the valuable customer feedback they have received over the years to deliver a better product and a happier customer experience.

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Refill Revolution

The trend towards refillable and reusable packaging is gaining momentum as more companies explore ways to reduce their use of single-use, hard-to-recycle packaging. This growth is partly driven by the goal of the Plastic Pact to deliver reusable packaging by 2025. Many of these initiatives are coming from startup and smaller brands, but multinational companies are also beginning to test the waters with small-scale trials and pilots. The dry food, household, and health and beauty sectors are currently the most active in this area.

Consumer attitudes towards single-use packaging are shifting, with a growing resistance to disposable packaging. The innovations in refillable and reusable packaging can be categorized into the four models outlined by the Ellen MacArthur Foundation: Refill at home, Return from home, Refill on the go, and Return on the go. The dry food, household, and personal care sectors are leading the way in this area. Many of the in-store examples of refillable and reusable packaging are currently small trials and pilots, as major retail chains test the waters with a limited number of initiatives in select outlets. The next steps of these major retailers will be watched with interest.

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American organic soap producer launches refill carton
Skincare start-up chooses glass bottles and biodegradable refill pouches
Grand Slam moves to refillable water bottles for players
Partnership to offer customers refill station for cosmetic products
Supermarket chain moves to reusable, recyclable, plastic-free carrier bags
German glass maker introduces reusable bottle pool
Reusable packaging for agri-chemicals reduces plastic use by 95%
New trigger spray contains 67% PCR material
Swedish grocery chain to trial reusable bags for home deliveries
Germany parcel delivery service trials returnable packaging
German pilot will assess feasibility of reusable packaging
Fast food giant introduces RFID technology for its reusable packaging
Reusable packaging scheme in Ontario has over 200 participating businesses

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Luxury fragrance incorporates 20% recycled glass in 30% lighter bottle

Ralph Lauren Fragrances, part of L'Oréal, has moved its Polo Earth fragrance to a refillable bottle that, while incorporating 20% recycled glass, is also reported to be 30% lighter than conventional Ralph Lauren Fragrance bottles. The pack also features a carton that contains 55% post-consumer recycled fibres and a wooden cap. The carton, cap, and label are all certified by FSC (Forestry Stewardship Council). The company is also removing the outer wrap from its products in order to cut down on plastic packaging waste. Polo Earth is described as a 97% natural-origin, vegan fragrance-free of sulphates, phthalates, artificial preservatives, or colourants. A spokesperson for the company said that they were seeing a growing demand from consumers for their ingredients to be safe, biodegradable, and sourced in a way that respects the environment. These changes are intended to contribute towards Ralph Lauren's wider sustainability targets.

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Cosmetics refill pots are made from formed pulp

Papacks is a Cologne-based company that produces formed pulp packaging items, including trays, inserts and bottles. They are now offering what they are calling refill CAPS, that can replace refill variants made of plastic for numerous products, though they are mainly aimed at the cosmetics category. The refill pots are made from renewable fibre and have an organic coating with oxygen, fat and water vapour barriers. A heat-sealable lid which can be printed on is also available. The pots are available in either brown or a cream colour. The pots are available in various sizes, including 15, 30, 50, 100, and 200ml. The materials the Papacks use are obtained from sustainable forest cultivation and are FSC-certified (Forestry Stewardship Council), with a new tree planted for every one felled. The pots are also 100% home-compostable.

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Airless paper dispenser meets consumer demands

Chinese multinational conglomerate Tianshi has introduced rebo Paper, a sustainable paper dispenser solution. The dispenser's lid and outer container are made from paper. The small inner container is made entirely from 100% recycled plastic. The rebo Paper dispenser is reported to be fully recyclable design. The dispenser features a hassle-free twisting mechanism, providing a convenient and user-friendly experience. It is also reported to be refillable and reusable to reduce waste and offer long-term value. rebo Paper also allows for excellent printing and embellishment options, offering better surface print options than plastic or glass. The dispenser's ability to directly imprint product information eliminates the need for additional external packaging, reducing costs and minimizing environmental impact. The lightproof nature of the paper dispenser makes it ideal for light-sensitive cosmetic products, ensuring product integrity.

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Dutch machinery manufacturer launches mess-free refilling station

Fyllar are machinery manufacturers based in the Netherlands. They have launched what they say is the world's first mess-free, fully optimised refilling station. Their solution has what it calls a 'smart cap', which adjusts to any size aperture. With a user-friendly touchscreen interface, customers pick their products and quantities with a finger tap or two. The smart cap's RFID tag ensures that the right product enters the right container. The dispensing process is fully automated. The station stays clean with the help of a 'smart system', preventing spilling or overfilling. When a refilled pack is removed from the machine, the SmartSeal valve automatically closes. It is designed to withstand up to 200kg so that no product will leak on its way home. Fyllar says that there is a dispenser to suit every liquid product, from washing detergent to hand soap.

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Luxury brand moves to refillable foundation compacts

Paris-based luxury fashion house Chanel is collaborating with beauty packaging manufacturer Texen to roll out refillable PET (polyethylene terephthalate) compacts for its Le Blanc and Les Beiges foundation products. Previously made from ABS ((Acrylonitrile Butadiene Styrene), the Le Blanc pack is now made entirely from PET except for the pin and mirror. Texen's XXL compact for Les Beiges, previously in rPET, has also moved to PET to improve colour stability and match the compact's pale colour. A pin used to join the lid and hinge is clipped into the well, enabling consumers to replace the product with a new refill easily. Texen's work with Chanel draws upon previous compact designs with the intention of maintaining the quality expected of a luxury brand while pursuing a more sustainable solution. These developments expect to benefit Chanel's pursuit of eco-design and meet with changes in European legislation surrounding cosmetic materials.

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American organic soap producer launches refill carton

Dr. Bronner's is an American producer of organic soap and personal care products based in Vista, California. They have recently launched a refill pack that uses 82% less plastic than the company's standard PCR PET (post consumer recycled polyethylene terephthalate) bottles. The company says that according to an LCA (life cycle analysis) they have carried out, the carton has less of an environmental impact than a single-use PCR PET bottle being recycled. According to Dr Bronner's, this is due to the materials and manufacturing of the containers making up a larger portion of the environmental impact than the end of life of the container. The carton is a multi-layer carton made of 69% FSC paper (Forestry Stewardship Council), 5% aluminium, and 26% PE with a PP cap. To use the refill, consumers add three parts filtered water to one part soap from the refill pack to the consumer's dispenser.

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Skincare start-up chooses glass bottles and biodegradable refill pouches

Necessary Good is a recently launched London-based refillable skincare essentials brand. The company uses bottles from Croxsons Glass, based in Sutton, Greater London, which are refilled with pouches. The pouches, which are said to be 100% biodegradable, are made from cellulose and a bio-based biodegradable film and are supplied by OnRepeat, also based in London. Croxsons produced two sizes of slope shoulder cylindrical glass bottles in 100ml and 200ml, sprayed in a leaf green Pantone. Both bottles include screw atomisers, overcap dip tubes, lotion pumps and screw caps as closures. When consumers begin to run low on their Necessary Good products, they can simply order a refill pouch and transfer its contents, after having received it within two days. The company firmly believes that compostable, bio-based and biodegradable packaging presents the ideal solution for addressing waste issues within the beauty industry.

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Grand Slam moves to refillable water bottles for players

At this year's Wimbledon tennis tournament, the organisers have partnered with evian mineral water to launch a refillable system pilot for players. The move will enable some of the world's biggest tennis stars to ditch single-use plastic bottles during the tournament. Players will receive reusable bottles to be refilled with evian natural mineral water on the court and at designated player areas, including practice courts, dressing rooms, and restaurants. On-court dispensers positioned beneath the umpire's chair will be available at courts 2-18, allowing players to refill their bottles themselves. Ball boys and girls will also be available to assist with refills. In addition to evian, Barclays has unveiled its plans for its inaugural year as the Official Banking Partner of The Championships. Collaborating with Unreasonable Impact company CLUBZERØ, Barclays will offer customers complimentary juice options served in reusable cups, which will undergo daily washing and redistribution throughout the tournament.

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Partnership to offer customers refill station for cosmetic products

French multinational pharmaceutical and cosmetics company Pierre Fabre has joined forces with four other French laboratories to offer 15 iconic dermo-cosmetic products in an eco-responsible bottle to be refilled in pharmacies. Called the “Pharma-Recharge”, besides Pierre Fabre, the other participants are Expanscience, Garancia, La Rosée Cosmétiques and Bioderma from NAOS. The companies are offering the consumer a refill point which will initially be tested in a Parisian pharmacy (Pharmacie Carré Opéra on the Chaussée d’Antin) before rolling out the experience in other points of sale. The 15 products will be offered in a reusable bottle of 500ml. The recommended price for pharmacies is said to be advantageous compared to that of the standard offer in non-reusable bottles on the shelves. A standard glass bottle was chosen by the companies that is compatible with most products. They chose Mobil Wood, an eco-designed wooden furniture company of French origin for the refill station.

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Supermarket chain moves to reusable, recyclable, plastic-free carrier bags

Italian discount supermarket chain Todis has moved to wood-based recyclable and reusable carrier bags from Espoo, Finland-based Paptic as a replacement for plastic bags. Todis had originally considered using a traditional paper bag, but because the company also sells refrigerated and frozen food, they needed a material that would not break down when in contact with wet and frozen products. Todis, therefore, decided on moisture-resistant Paptic material as a perfect choice for their requirements. Also, due to the Paptic material's strength, the company could choose a lower grammage than would have been possible with a conventional paper bag, and the new Paptic bags use 20% less raw material. The flexibility and strength properties of the material allow the bags to be reused multiple times, as they are easy to fold to fit into customers' pockets, and at the end of the bag's life, it can be easily recycled with kerbside paper and board collections.

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German glass maker introduces reusable bottle pool

Verallia Deutschland AG, part of the world's third-largest manufacturer of glass containers for food and beverages, is investing in its own national reusable pool of wine bottles. The company, therefore, becomes a service provider for delivery, cleaning and return logistics in Germany. The system consists of a newly designed 0.75l wine bottle, which is available in two different colours, and a 6-bottle crate. During development, special attention was paid to creating a standard container that can be easily combined with all types of wine. It offers the bottler many different decoration options and meets the special requirements of a robust, reusable container. The bottles are suitable for bottling wine and semi-sparkling wine with a carbonation of up to 4 g/l. It is claimed that reusable glass makes a very significant contribution through the so-called "double recycling economy", with up to 50-time reuse before 100% recycling.

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Reusable packaging for agri-chemicals reduces plastic use by 95%

Agricultural technology company Syngenta has announced the launch of reusable packaging that they say reduces the use of plastic by 95%. The packaging concerned is an IBC (Intermediate Bulk Container), which can be reused up to five times, avoiding the environmental impact of plastic waste. It also saves water since it avoids the triple washing that conventional containers require and increases safety in handling and traceability in the handling of products. The water savings have been calculated to be of at least 1,500 litres by avoiding the washing required by conventional 20-litre containers. Syngenta says that using IBC containers also ensures simpler and more efficient handling of inputs since it allows the producer to increase product replacement times and facilitates logistics and handling during storage, use, transit and final disposal. It also has technology that allows its geolocation, giving greater traceability of the containers.

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New trigger spray contains 67% PCR material

AFA Dispensing, based in Eindhoven, have launched the OpUs Verte+ trigger sprayer, which the company says contains 67% PCR (post-consumer recycled) resin. This new trigger is said to have a guaranteed lifespan of over 10,000 strokes, which the business says can be reused for up to 27 bottles of a 500ml liquid product. While certain components are still made from virgin resin, the company states that this brings durability and longevity to the sprayer's design. The new model is a further development of the OpUs Verte, which was released in 2019 and offered a PCR resin content of 47%. The OpUs Verte+ hopes to meet the growing demand for environmentally conscious packaging, cut down on single-use plastics, and increase recycled material content on the market. Also, the company states that the new sprayer does not come with a price premium.

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Swedish grocery chain to trial reusable bags for home deliveries

Co-op Sweden and Stockholm-based Gordon Delivery are starting a joint pilot project where consumers who buy their food online receive their home deliveries in a circular reusable bag instead of paper bags. The system is called Gordon Circular and Co-op is the first grocery chain to test it. The packaging used in the pilot includes an outer, hard shell that protects the goods before they reach the consumer and a soft reusable bag adapted for Co-op's picking and handling from store to consumer. Gordon delivers the food in crates to Co-op's customers, who in turn return them to Gordon on their next delivery. The crates are then washed and made ready for a new delivery from Co-op. A life cycle analysis from Linköping University shows that the bag only needs to make five loops for the entire system to have a lower climate impact than a paper bag that would be used only once.

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Germany parcel delivery service trials returnable packaging

Parcel delivery service DPD Germany is currently conducting a pilot test with reusable shipping packaging together with the Munich-based returnable shipping system start-up Hey Circle, and the German clothing manufacturer Trigema. The practical suitability of the reusable boxes from Hey Circle in size XL (60 x 40 x 20 centimetres) will be tested under real conditions. With Hey Circle, the sustainably designed reusable solutions were tested over several months in the DPD system last year. In close cooperation with Hey Circle and Trigema, the potential and effort of the logistics process is now being examined in an internal test phase between Trigema headquarters and test shops. The companies involved rely on a multi-stage test procedure: after a test phase with 100 boxes, the number was doubled for the next step. In April, DPD and the start-up Boomerang used such packaging successfully in the systems and sorting facilities at DPD Depot 120 in Hamburg.

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German pilot will assess feasibility of reusable packaging

A pilot project in the German municipality of Haar, Munich, is starting to increase the proportion of reusable packaging and simplify return logistics used in the area. The pilot is being conducted by ReFrastructure, together with the reusable system providers Recup, reCircle and Relevo, and will be the first pilot project in Germany, and starts in July 2023. Citizens will be able to use these providers' reusable cups and bowls and then return them to all participating catering establishments. With the pilot project, ReFrastructure is pursuing the goal of subjecting the specially developed infrastructure to a field test, while the knowledge gained should also help to further promote the relevance of reusable systems for consumers at a national level and make a sustainable contribution to climate protection. The project is financially supported by the Federal Environment Agency, the German Federal Foundation for the Environment and private donors.

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Fast food giant introduces RFID technology for its reusable packaging

Following the introduction in early 2023 banning single-use packaging for takeaway food and restaurants, McDonald's France is introducing RFID hardware and software in its takeaway restaurants for its reusable packaging. McDonald's will use Checkpoint Systems' technology, which will provide food-safe, heat and water-resistant RFID solutions which are suitable for all reusable containers, from cups and bottles to french fry trays. The packaging can be monitored and tracked using an automated database. This platform provides McDonald's France with real-time data on their stock levels, including the type and quantity of containers – and the replenishment requirements, with an accuracy of up to 99%. The automated track-and-trace feature also enables restaurants to determine the location of nearby reusable packaging – for example, in the event that a container was accidentally disposed of in a waste receptacle.

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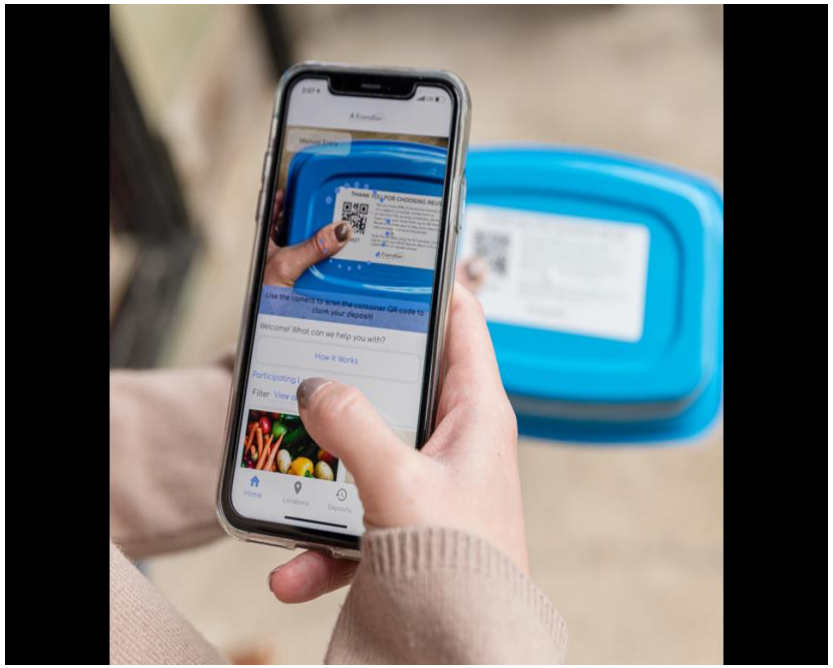
Reusable packaging scheme in Ontario has over 200 participating businesses

Friendlier is an Ontario-based company that has established itself as a leader in reusable plastic packaging for food service. When a customer purchases a product from a shop or restaurant, they can opt to purchase it in one of their reusable PP (polypropylene) containers. A small deposit of $0.50 – $1.00 (30 – 59p) may be charged, which will be returned when the container is returned. After use, it doesn't need to be washed, just any remaining food emptied from the container. Using the Friendlier mobile app, a QR code on the container is scanned so that the deposit can be returned. The container can then be deposited in a bin at any participating location. The deposit is returned within two weeks, when the customer can donate it to charity. Friendlier's reusable containers are now found in over 200 food service businesses throughout Ontario.



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About Us

ThePackHub is a UK-based packaging innovation consultancy that provides packaging solutions to brand owners, retailers, and packaging suppliers. They offer technical support for packaging projects of all sizes, with a strong reputation for assisting start-ups to multinational organizations.

ThePackHub manages a comprehensive innovation database called The Innovation Zone, featuring over 7,400 packaging innovations worldwide, with 25 new initiatives added weekly. They have a vast network of packaging contacts across the industry that helps inform much of their consultancy work. Additionally, they have published several packaging reports, covering sustainability, packaging trends, supplier guides, seasonal packaging, and more. ThePackHub hosts face-to-face seminars that provide insight from expert speakers and bring the industry together to network and collaborate.

ThePackHub has a wealth of experience helping many major companies with their packaging innovation. Clients include Arla Foods, Waitrose, Barilla, Kellogg's, Coca Cola, PepsiCo, Mondi, Premier Foods, AB InBev, Kraft Heinz, Twinings, Mars Wrigley, Church & Dwight, PZ Cussons, Starbucks, Walgreen Boots Alliance, Marks & Spencer, Lidl, Muller and many more.

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