

September 2026

Biobased Products

Each month we review the latest news and select key announcements and commentary from across the biobased products sector.



**Announcements
& Commentary**



**Research &
Development**



Providing clients with a strategic view of feedstock, technology, policy and marketing opportunity across the bioeconomy.



Plastic is one of the most significant global environmental issues, causing biodiversity and habitat loss, as well as health issues across the animal kingdom – including humans – primarily caused by microplastic residues. Around 50% of plastic ever produced was manufactured within the last twenty years, testifying to the rapid and uncontrolled development of the industry. These trends are primarily attributed to disposable – often single-use – items, for which demand has consistently been on the rise. In light of this, it is crucial that less harmful alternatives be found, so that demand can continue to be met without continuing to pose a threat to the planet.

Research on biobased plastic alternatives is budding worldwide, intending to both reduce fossil fuel consumption during production and eliminate microplastic residue shedding at the end of the product's life. South Korean CJ Biomaterials has developed a supply chain which allows companies to produce biobased plastic utensils from biobased PHA pellets. Hence, developing a more direct supply chain and driving the biobased industry further forward. CJ Biomaterials also claims that no microplastics are released by their product. In a similar attempt to reduce end-of-life plastic pollution, SmartSolve has developed flushable single-dose packaging for detergents and toilet cleaners. The small sachets are designed to dissolve in water when flushed, without microplastic residues being released in the water and the environment. The first prototypes will be showcased later this year.

Low plastic recycling rates are the main cause of the accumulation of plastic pollution around the globe, it is therefore imperative to tackle this part of the plastic value chain as well. The Circular Biobased Europe Joint Undertaking has launched a large-scale trial demonstrating that biobased plastic can be identified and separated from conventional plastic packaging, paving the way for the establishment of new segregated recycling routes. This would allow for biobased plastic to re-enter the production chain, and to further strengthen the circularity of the industry and reduce the overall production of virgin materials.

Overconsumption remains the primary driver of plastic pollution, and a reduction in demand would most likely have the biggest positive impact. However, plastic use is here to stay and such innovations as those detailed here are crucial to the establishment of sustainable and resilient global and national economies.

Products, Research and Development

Kelpi's seaweed-based coating achieves US FDA food contact approval for packaging

Kelpi, the UK materials innovation company developing seaweed-based biomaterial coatings as an alternative to fossil-based plastics, today announced that its coating has cleared the US Food and Drug Administration's food contact notification process.

The approval allows Kelpi's coating to be used on paper and board food packaging sold in the United States, in contact with all food types at or below room temperature, including foods that are frozen or refrigerated. It also validates Kelpi's coating as suitable to package personal care and cosmetics products, opening access to one of the world's largest packaging markets and removing a key regulatory barrier to commercial adoption.

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Traditional plastic forks shed harmful microplastics. Plastic created from sugar is an alternative

At a Massachusetts lab, pebble-sized pellets are transformed into forks and films that won't leave persistent microplastics in the environment. These are bioplastic pellets. CJ Biomaterials ferments sugar to make plant-based polymers that microbes will consume. These alternatives to traditional plastics made of fossil fuels are seen by some as one of many solutions needed to confront global plastic pollution.

At the company's Woburn research facility, lab technicians recently poured pellets into a molding machine to make forks. The test forks were thin enough for home composting, though too bendy for stabbing a steak.

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EU project to produce biobased rubber from food waste

An EU-funded Horizon Europe initiative known as the Rubbio project is aiming to manufacture high-performance, bio-based synthetic rubbers: specifically polybutadiene (PB), styrene-butadiene rubber (SBR), and nitrile butadiene rubber (NBR), from starch-rich bread and potato waste. Besides the production of three rubber types, the project will aim to cut carbon emissions from butanediol production by 41% and reduce Europe's reliance on imported rubber.

The project will address the challenges by developing sustainable, scalable, and high-performance rubber materials through the synthesis of key intermediates (2,3-butanediol and propionic acid), monomers (1,3-butadiene, acrylonitrile, and styrene), and rubber types (polybutadiene rubber – PB, SBR, NBR) from starch-rich food waste, which serves as a source of sugars for microbial fermentation.

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Your next handbag could start with mushrooms

The search for leather alternatives has led researchers somewhere unexpected: fungi. Although traditional leather is durable, producing it requires animal agriculture, which carries negative environmental impacts. Meanwhile, vegan alternatives are typically made from petroleum-based plastics that are difficult to recycle.

Researchers report in ACS Applied Bio Materials that mycelium, the underground network of fibers below mushroom caps, can be pressed into a durable yet compostable leather-like fabric. They even sewed the fabric into a purse.

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Demeter Bio unveils PFAS-free coating for textiles and packaging

London-based company Demeter Bio has revealed a non-toxic coating designed to replace PFAS in textiles and packaging using biomaterials, suitable for applications such as clothing, upholstery, hygiene and packaging.

The Fibrepel technology is said to replicate per- and polyfluoroalkyl substances (PFAS)' water and stain-repellent properties. Commonly known as 'forever chemicals', the substances are often used in food packaging and have been linked to health issues and environmental leakage.

As PFAS regulations have increased across Europe, Demeter Bio says it noticed alternative coatings being developed relied on microplastics, which, despite being PFAS-free, are linked to health and contamination issues and 'do not perform as well' against oil and alcohol resistance. The company sought to develop a solution that solves these challenges without compromising the environment.

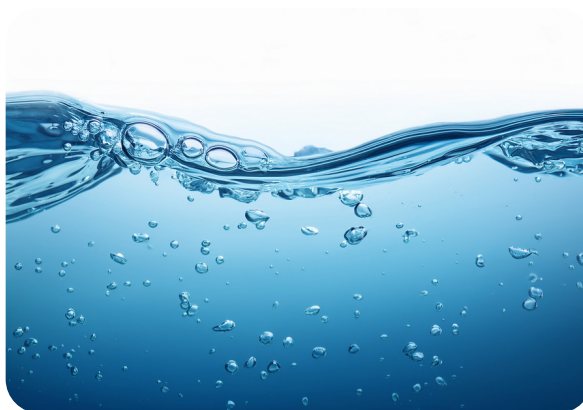
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A High-Temperature-Resilient All-Cellulose Barrier for Next-Generation Beverage Packaging

Kruger Inc. today announced a \$333 million investment marking its entry into the nonwovens sector and advancing its long-term portfolio diversification strategy. This new division will focus on manufacturing some of the industry's most sustainable materials for a broad range of wipe applications. Central to this major project is the installation of the first production line of its kind in Canada, to be built on Île-de-la-Potherie in Trois-Rivières, adjacent to Kruger's Wayagamack paper mill, with commissioning scheduled for 2028.

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'Flushable' biobased packaging for household cleaning revealed by SmartSolve



Canva.com

SmartSolve has launched PureNil 0 – a biobased, printable and 'flushable' pouching material for single-dose household cleaning products, designed to disperse in water.

Reportedly, single-dose detergent packaging is expected to grow more than 6% annually through 2035. The market is set to reach \$6.3 billion over time.

While consumers increasingly demand both convenience and sustainability, many mono-dose formats such as laundry pods and dish detergent tabs are made from polyvinyl alcohol (PVA).

SmartSolve warns that PVA formats are sometimes marketed as biodegradable, but points to research indicating that the polymer still contributes to microplastic pollution in water systems.

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Bio-based adhesive without compromise

Sustainability targets are becoming more demanding—especially in the automotive industry. But switching to greener materials often means accepting trade-offs in performance.

DELO has developed DELO PHOTOBOND SJ4192, a bio-based multi-purpose adhesive that meets high technical requirements and supports sustainability goals at the same time. It is the first DELO adhesive where renewable ingredients make up more than half of the formulation.

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Large-scale sorting trial shows that bio-based plastics can be reliably identified and separated from conventional packaging waste

A large-scale sorting trial shows that bio-based plastics can be reliably identified and separated from conventional packaging waste, paving the way for a dedicated recycling stream for these materials. The results come at a crucial time, as the EU's Packaging and Packaging Waste Regulation (PPWR), entering into force this August, raises the bar for the recyclability of packaging materials.

Bio-based plastics such as polylactic acid (PLA), starch blends and biopolyesters are gaining ground in packaging as a more sustainable alternative to fossil-based materials. But where they cannot be collected for composting, their environmental norms require other end of life solutions such as mechanical recycling. This is where sorting remains one of the biggest challenges. Most material recovery facilities rely on near-infrared (NIR) optical sorters that are not yet configured to recognise bio-based plastics, risking either contamination of existing recycling streams or losing the material altogether.

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China repurposing pharma mega-factories to make novel foods, GFI report reveals

China's industrial fermentation ecosystem is among the largest and most developed in the world. Decades of investment in fermentation-based pharmaceuticals and vitamins have created a manufacturing sector with vast production capacity, experienced technical talent, established supply chains, and competitive operating costs. Historically, these companies have shown limited interest in food applications, since pharmaceuticals are often produced in smaller volumes and can command far higher prices.

However, a new report authored for GFI APAC by Australian biotech and geopolitics expert Dr. Dirk van der Kley shows that due to the expansion of biopharmaceuticals capacity in China and increased competition from biosimilars (off-patent drugs that are broadly analogous to generics), the attractiveness of some pharmaceutical manufacturing markets has lessened.

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Kimberly-Clark unveils proprietary natural fiber innovation program

Kimberly-Clark Corporation has unveiled a proprietary innovation program focused on advancing alternative natural fibers as the foundation for a next-generation, high-performance, sustainable materials platform, furthering the Company's commitment to Better Care for a Better World. Company researchers and scientists developed a patented technology platform by transforming fibers from a rapidly renewable succulent plant into sustainable material. This breakthrough has the potential to power the Company's future hygiene products with enhanced performance, quality, and sustainability.

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