

A PLASTIC PLANET

2. SOURCE MATERIAL: TREES

Dating back to the 1st and 2nd centuries when Mulberry tree bark was used in China to wrap foods, paper-based packaging is still going strong and constantly evolving into new and exciting food packaging solutions. In the EU, more paper-based packaging is recycled than any other packaging material combined.

2a. WOOD FIBRE BEER BOTTLES



STARTING LIFE

Billed as the product of tomorrow, the Green Fibre Bottle is under development through a 3-year collaboration between the Technical University of Denmark, Carlsberg, the Danish Technological Institute, and BillerudKorsnäs, Sweden.

Under the slogan – ‘If we can dream it, we can make it’ - the Green Fibre Bottle aims to find a solution to the lack of current sustainable solutions for carbonated beverages. Using fibre based structures and specialized 3D-Forming, the bottles are formed using a technology called thermoformed fibre using sustained pressure and heat giving a more controlled process. The fibers will be sourced from responsibly managed forests replanted at the same rate as they are harvested.

WORKING LIFE

The Green Fibre Bottle is currently in the trial phase with a pilot market test scheduled in 2018.

ENDING LIFE

While the Green Fibre Bottle will degrade into environmentally non-harmful materials if discarded randomly, the intention is that it will form part of a proper waste management system, like bottles and cans.

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WEBSITES

<https://www.billerudkorsnas.com/sustainability/increased-customer-value/sustainableinnovation>

<https://packagingeurope.com/best-bio-based-innovation-award-2017/>

<https://carlsberggroup.com/newsroom/carlsberg-unveils-new-green-fiber-bottle-design/>

<http://www.ecopac.dk/green-fiber-bottle/>

A PLASTIC PLANET

2. SOURCE MATERIAL: TREES

A surprising and exciting innovation using wood pulp is netting for fruits and vegetables. The netting which looks like its plastic counterparts is softer to the touch, but equally durable, and most importantly, it is fully compostable.

2b. CELLULOSE TUBE NETTING

STARTING LIFE

PACKNATUR® net bags are manufactured exclusively from beech wood sourced from the forestry industry with one-third sourced from Austria and two-thirds from Central Europe. These PEFC-certified sustainable forests are grown to a certain height, and then some are thinned out to give the remaining trees enough space and light to grow. This byproduct of wood thinnings is then chipped and broken down into pulp, spun into a stringlike material, and then knitted together into a net tube, ready for use.



WORKING LIFE

PACKNATUR® Cellulose tube netting looks almost identical to its plastic counterpart. It is tear-resistant, making it suitable for fruits and vegetables including lemons, oranges, onions, and potatoes. And the netting regulates humidity, helping to keep the foodstuffs fresh for up to 2-3 days, delaying the premature sprouting of potatoes and onions as well as mold formation.

ENDING LIFE

PACKNATUR® Cellulose tube netting (coloured and uncoloured) conform to the Oeko-Tex® Standard and is certified for Home composting in the US and Europe.

100% bio-based

100% compostable.

WEBSITES

<https://vpz.at>

CURRENT UPTAKE

PACKNATUR® Cellulose bags have been adopted by all leading supermarkets in Austria, by Co-op in Switzerland and have just been adopted by the UK's Riverford.

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One of the most prized plastic packaging items are strong, clear bags predominantly used for dry foods. Now compostable wood-pulp versions are available.

2c. BIOFILMS

STARTING LIFE

NatureFlex™ biofilms are made from wood pulp, derived from FSC and/or PEFC certified sources only. The finished films are typically ~95% from renewable resources. from renewable resources.

WORKING LIFE

NatureFlex™ is suitable for direct use for a wide variety of ambient foods including fresh fruit and vegetables, dried foods, cheese, tea and coffee. Products such as meat and fish need a laminate using NatureFlex for barrier and another film for hermetic seals and better moisture resistance. NatureFlex™ is not suitable for very wet products or liquids.



ENDING LIFE

NatureFlex™ composts down to biomass, CO₂ and water under home and industrial compost conditions, as well as Anaerobic Digestion and waste-water.

- European industrial composting certified (EN13432).
- American industrial composting certified (ASTM D6400)
- All films OK Compost Home certified.

WEBSITES

<http://www.futamura.com>

CURRENT UPTAKE

- Ekoplaza/The Netherlands
- Nestle Quality Street™
- Numerous ethical food, coffee & tea companies (e.g. Tea Pigs)
- Compostable coffee pod films

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One of the most prized plastic packaging items are strong, clear bags predominantly used for dry foods. Now compostable wood-pulp versions are available. As are colourful snack packaging solutions - which look and feel like conventional plastic – but fully compost.

2d. BIO PACKAGING

STARTING LIFE

Tipa's sustainable packaging line contains a wide range of transparent, durable and impermeable packaging formats ranging from open and sealable bags to wrappers. The company uses a mix of source materials including wood pulp, corn, sugar cane and rice straw.

WORKING LIFE

This sustainable packaging line is suitable for dry, baked and frozen goods, as well as fruits and vegetables. In 2016, TIPA partnered with fruit brand Snact to produce a snack product covered in flexible, fully biodegradable plastic packaging. When the packaging comes to the end of its useful life, consumers can dispose of it like they would with organic food waste.

ENDING LIFE

- All TIPA's products are compostable certified.
- European industrial composting certified (EN13432).
 - American industrial composting certified (ASTM D6400)
 - All films OK Compost Home certified. WEBSITES

WEBSITES

<https://tipa-corp.com>

<https://packagingeurope.com/innovation-arises-from-shared-passion-for-compostablepackag/>

CURRENT UPTAKE

- Ekoplaza/The Netherlands
- SNACT



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2. SOURCE MATERIAL: TREES

The robust egg box is a familiar example of a Moulded Fiber Product (MFP). Made from a pulp of cardboard, recycled paper and newsprint. Today MFP is enjoying a renaissance. With new technologies, MFP designers and manufacturers are delivering new precision MFP with sharp edges and angles and a quality of embossing and de-bossing not seen before.

2e. MOULDED FIBER PAPER

STARTING LIFE

James Cropper's renewable wood fibre is sourced from sustainably managed forests - and used coffee cups.

WORKING LIFE

Using advanced manufacturing techniques, James Cropper 3DP have created a line called COLOURFORM™. Sourced from renewable sources, 100% natural, recyclable, and unlike typical MFP, which feels rough and ready, Cropper's COLOURFORM™ is smooth to the touch and professional. With precision embossing and meshing, any pattern, image or wording can be built into these 3D designs.



One of J Cropper's clients is LUSH cosmetics. A partnership with a twist. Instead of the classic MFP source materials, the packaging designed and launched used 100% recycled content from used coffee cups.

ENDING LIFE

As moulded paper is just paper, it is 100% recyclable and compostable

WEBSITES

<https://www.colourformpackaging.com>

CURRENT UPTAKE

LUSH Cosmetics
Floral Street Perfumes