

A PLASTIC PLANET

3. SOURCE MATERIAL: PLANTS

Only 15-20% of the plants grown for food - usually the roots, fruits, seeds or juices - actually end up as food. Part of what remains is used for animal feed, but billions of tons of agricultural residue remain, often ending up as waste, which is burned or used for energy generation.

Wrapping foods in foods has a simple elegance about it. It is also a rapidly growing industry which has come under fire for displacing food crops. Sugarcane is one of the best-known examples of land displacement prompting several companies to adopt policies where responsible sourcing is central to their business model.

3a. CORN & VEGETABLES/ CLEAR FILM

STARTING LIFE

MATER-BI is an innovative family of biodegradable and compostable materials developed over 25 years of research in Italy. MATER-BI contains (a) Non genetically modified corn starch grown in Europe using traditional agricultural practices (b) vegetable oils from nontransgenic crops.

Evolving with each new design phase, MATER-BI's 4th generation contains a greater proportion of renewable raw materials with content typically > 40% and over 60% for some film grades. A higher level of mechanical performance has also been achieved.



WORKING LIFE

Products in the Mater-Bi family can be manufactured in a rigid or flexible format and are suitable for both fresh and dry foods. The range extends from transparent films, liners, wrappers for products like butter, netting, cardboard trays and clear bags for potatoes and carrots.

MATER-BI can be produced on standard plastic converting equipment which means Novamont's production line needs no new facilities or machinery.

ENDING LIFE

MATER-BI packaging is fully biodegradable and compostable. Ideally MATER-BI products are designed to be disposed of together with organic waste in separate collection systems and preferably sent to an in-vessel composting facility.

- OK Compost certified.
- European industrial composting certified (EN13432).

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WEBSITES

<http://www.novamont.com/eng/corporate-responsibility>

http://materbi.com/en/wp-content/uploads/sites/2/2016/05/packaging-solutions-_EN_LR.pdf

http://materbi.com/en/wp-content/uploads/sites/2/2015/12/Schedabioplastichecoltivazioni_EN_MR.pdf

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3b. TOMATO STALKS & LEAVES | PUNNETS

STARTING LIFE

In 2017 Waitrose trialed a new environmentally friendly punnet made from tomato leaves and stalk 'waste' mixed with recycled cardboard pulp for their organic tomato range. For red lentil and green pea pasta, boxes partly made from pulses are also being used, reducing virgin tree pulp by 15% and greenhouse gas emissions by 20%. And for Duchy Organic eggs, a box using a mixture of rye grass and recycled paper has been developed.



WORKING LIFE

Pending successful trial results, Waitrose predicts using the new punnet will save 3.5 million plastic trays per year. If a biomaterial film to seal this punnet were adopted, this would be a perfect example of using food to wrap food which comes full circle by composting down at the end of its life to create soils - to grow our food.

ENDING LIFE

Waitrose punnets can be mixed with food waste in household waste streams and are fully compostable

- OK Compost certified.
- European (EN13432) certified.

WEBSITES

<https://www.packagingnews.co.uk/news/environment/canadian-and-french-firms-introducepackaging-from-tomato-plants-03-01-2017>

<http://www.producebusinessuk.com/insight/insight-stories/2017/10/30/waitrose-pilots-punnet-made-from-dried-tomato-leaves>

<https://www.packagingnews.co.uk/news/environment/canadian-and-french-firms-introducepackaging-from-tomato-plants-03-01-2017>

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3c. MULTIPLE PLANT SOURCES MULTIPLE PRODUCTS



STARTING LIFE

NatureWorks is a manufacturer and visionary brand, the only completely compostable packaging company operating globally. With an extensive range of eco catering disposables offers quality environmentally-friendly products at competitive prices. Hot and cold drink cups, takeout boxes and food containers are low carbon, made from renewable or recycled materials, and all can be commercially composted with food waste where facilities exist.

Multiple source materials are used, including:

Palm leaf - Naturally shed palm leaf sheaths provide versatile packaging solutions as well as valuable employment for small village communities.

Sugarcane – Bagasse is a stylish eco alternative to polystyrene made from recycled sugarcane fibre, with 99% less carbon.

Wood pulp – NatureFlex, a clear, heat sealable and home compostable film.

Wood pulp - Sustainably sourced or recycled card and paper.

Plant based PLA – With up to 89% less carbon than conventional plastic.

WORKING LIFE

A wide range of packaging and catering products are made including cups, plates, cutlery, boxes, containers, tubs and films.

ENDING LIFE

All the materials are compostable, which means they break down in commercial composting facilities in less than 12 weeks.

- OK Compost certified.

- European industrial composting certified (EN13432)

WEBSITES

<https://www.vegware.com>