

Avantium raises 36 million euros for commercial bioplastic packing material factory

Source: Bioplastics Magazine

Posted: Aug 06, 2014

Avantium has announced that it has secured €36 million from the private sector to build a plant for the commercial production of the bioplastic polyethylene furanoate (PEF).

This has been developed by the Dutch firm, and is principally being marketed as a replacement for PET in packaging and other applications. The consortium that is pledging the €36 million represents a number of high-profile companies that are interested in the potential of PEF. The members are Coca-Cola, Danone, Alpla and Swire Pacific; they will join a series of venture capital firms that have already invested in Avantium.



Speaking on 5 June, Tom van Aken, CEO of Avantium, says: 'Today we made a huge step towards the first commercial-scale plant for PEF. This investment makes it possible for us to complete the industrial validation of PEF, and finalise the engineering and design of the first commercial-scale plant.'



Avantium's 100 % biobased bottles made from PEF

'It is really special that iconic players in the food and beverage industry invest in a technology partner like Avantium. That gives us a common goal: make 100% bio-based plastic bottles for their products. Together we believe that PEF is the packaging material of the future.'

Produced using Avantium's own Yxy technology, PEF is made from 100% bio feedstocks and is fully recyclable. Its production is currently limited to 20 tonnes per year from Avantium's pilot production line at Geleen in the Netherlands.

The new facility is expected to be in operation by 2017 and will produce 50 million kilograms per year. This will allow packaging designers to run more extensive tests on using the material. Another priority for Avantium is to find a new second-generation feedstock for making the plastic.

Amcor supports greening of UK bread brand with renewably-based packaging

Source: Food Contact World

Posted: Aug 06, 2014

Flexible packaging giant Amcor Flexibles is proud to be a driving force with Hovis Ltd in the development of the brand new Hovis Seed Sensations bread bag made with predominantly (PE).

This is a significant sustainability improvement for the brand as the Seed Sensations bread bags made with renewable plastic have a 75% lower product carbon footprint than the former traditional bread bags made with plastic from non-renewable fossil sources. Seed Sensations, the premium product in the Hovis range, is the first to be relaunched using renewable PE bags.

Hovis Limited is a stand-alone joint venture between The Gores Group and Premier Foods, established in April 2014, among other things, to grow the bread business and reinvigorate the – in the UK – venerable Hovis brand.

A key part of the relaunch of the Seed Sensations product is the environmental aspect of the new packaging. "We knew we had a breakthrough proposition with the new renewable PE bread bag and have been able to work closely with Amcor Flexibles to both maximize the development and ensure we gain official certification," said Richard McQuillan, Hovis Marketing Manager at Hovis Ltd.

"The Product Carbon Footprint of this product has been certified by the Carbon Trust. As part of the total Hovis Seed Sensations brand re-launch, we will be communicating about the reduction in carbon footprint on pack and on our website so that our consumers understand the importance of this change for the environment," he continued.

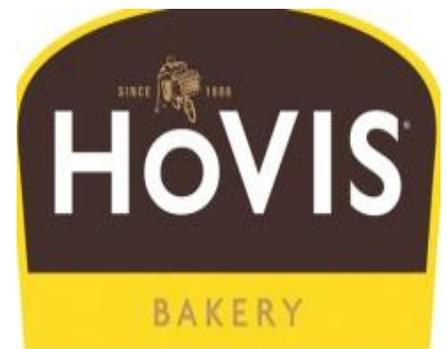
Amcor's in-house lifecycle assessment tool, ASSET played a major role in the transition to the new material. The tool provides comprehensive insight and calculations that include the raw material supply chain, conversion to final packaging and end-of-life of the post-consumer packaging waste. Distribution and filling operations can also be included. ASSET is certified by the Carbon Trust, an independent certification body and leader in product carbon footprint auditing.

"In May 2012, the background methodology and data content of ASSET successfully achieved certification from the Carbon Trust, a global leader in carbon management and carbon footprint certification," said Dr. Gerald Rebitzer, Amcor Flexibles Europe & Americas Sustainability Leader."

"We are delighted that we have been able to support the Hovis Seed Sensations re-launch with ASSET delivering a significant improvement that benefits the complete value chain."



Bread bags made with renewable plastic



UK bread brand

Pilot project turns wastewater to bioplastic

Source: Prague Post

Posted: Aug 07, 2014



Wastewater treatment plant

Belgium-based wastewater treatment company Aquiris, a subsidiary of the conglomerate Veolia, has a pilot project at its Brussels-North Wastewater Treatment Plant to turn wastewater into plastic.

"Until now, the sanitation concept has always consisted in eliminating the pollution in wastewater. " We have the know-how to both treat the wastewater and recover a by-product reusable as bioplastics in an existing plant. This is a revolutionary answer to the challenge of natural resource preservation," Marc Rigal, the general manager of Aquiris, said in a statement.

Right now, the technology is in a pilot phase and Aquiris is looking for business partners to make the plan a reality. The waste water from Brussels, with a population of 1.1 million, has the potential make 20,000 tons of bioplastic a year. "The initial expenses are high, but that will come down once it goes into production," Bernard Lambrey, who is heading up the project for Aquiris, told the press during a plant tour as part of the EU-sponsored Green Week. Some companies have shown interest in buying the process outright, but Aquiris is looking for investors to work with them in bioplastic production.

The process involves separating out volatile fatty acids from sludge and mixing is with wastewater and specially selected bacteria that convert the fatty acids into biopolymers. "We use a centrifuge to separate the fatty acids out," Lambrey said, adding that the mix had to be heated to a proper temperature for the bacteria, which are the key part of the process, to digest the fatty acids and produce polymer chains.

The idea first came about in 2007 with a trial in Sweden, once it was discovered that some bacteria used in wastewater treatment were producing polymers. The bacteria strain was refined over time to be more efficient, and testing was moved to Brussels, where the first successes came in 2011. The bacteria used in the process are put through famine and feast phases, which makes them more productive than if they were fed a steady diet of fatty acids and wastewater.

The biopolymers are refined into bioplastics and similar products. The rest of the sludge can be used to produce biogas of energy. The treated wastewater is not suitable for drinking but is checked for levels of contamination before being released back into the environment.

Since plants such as corn or hemp take carbon dioxide out of the atmosphere, bioplastics serve as a way to reduce greenhouse gases by storing that carbon. If the bioplastic items are recycled, the carbon is permanently removed from the atmosphere.

Alternatives to bioplastics based on corn will reduce dependence on oil-based plastics while at the same time they will help keep agricultural land in the food production cycle.



Bioplastics products

Cardia Bioplastics opening bag manufacturing plant in Brazil

Source: European Plastics News

Posted: Aug 19, 2014

Australia's Cardia Bioplastics Ltd. says the high demand for environmentally friendly bags has prompted it to set up a film and bag plant in São Paulo, Brazil, which is due to start production in September 2014.

The company says that the new factory is expected to deliver a production capacity of 500 million retail carry bags per year, which is over four times greater than that of the current Cardia Bioplastics manufacturing plant in Nanjing, China.

Earlier this year, Cardia expanded production in Nanjing to keep up with demand, including increased sales in Brazil. The Nanjing plant had been the only manufacturing site for the Melbourne-based company.

Cardia Bioplastics Latin America Managing Director João Paulo Mignot said, "We are thrilled with our new manufacturing facility. The Brazilian retail market is a major market for our Biohybrid carry bags. With our own production coming on stream, we are now poised to deliver the increasing orders that we have been receiving, whilst further growing the business."

Cardia Bioplastics Managing Director Frank Glatz said, "The establishment of Cardia's own production facilities in Brazil could not have come at a better time. We have seen strong growth in demand for Cardia Biohybrid bags — environmentally preferred bags that use less oil, have a lower carbon footprint and are heavy metal free, driven by consumer, retailers, brand owners, municipals and government."

Cardia Bioplastics says that A\$750,000 (US\$699,000) worth of machinery for the new plant has been funded using vendor finance during the past 12 months.



Cardia Bioplastics Ltd.'s new plant in Brazil will be its second manufacturing site

New bioplastic filaments coming to 3D printing from rice, spinach, cocoa and more

Source: Newsroom

Posted: Aug 27, 2014

Demand for plastic will grow worldwide as 3D printers are becoming a new typical electronic device in our homes. Petroleum-based plastics are not always suitable to be processed and melted at home, due to fumes containing toxic elements. This, alongside with a growing concern about a clean and healthy environment is leading to the raising of new bio-based plastics that can be easily recycled and biodegraded.

In fact, the PLA, one of the most widely used plastic for our home 3D printers is a bio-based plastic, but sometimes its performance and characteristics are not suitable for what we are looking for.

There are some initiatives all around the globe that either recycle petroleum-based plastic or develop new bioplastics.

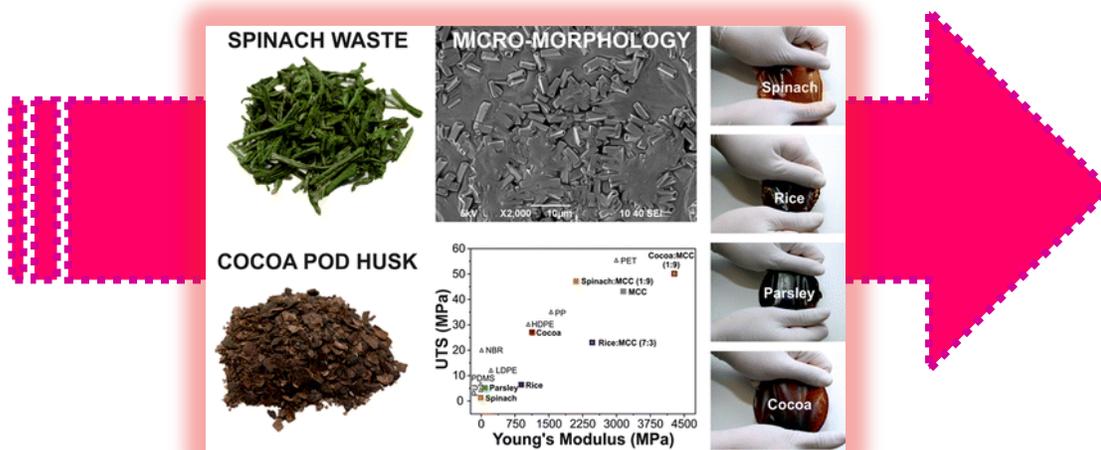
In the second case, there is a team of researchers at the Italian Institute of Technology whose members, Athanassia Athanassiou, José Alejandro Heredia-Guerrero, Luca Ceseracciu, Francesca Pignatelli, Roberta Ruffilli, Roberto Cingolani, Ilker S. Bayer, and Susana Guzman-Puyol, are working to create a new bioplastic from vegetables like rice, parsley, spinach or cocoa.

It's being made using an organic, naturally occurring acid called Trifluoroacetic acid (TFA), a colorless liquid with a sharp odor, similar to vinegar, but stronger. The scientist managed to produce cellulose, the main substance that gives plants their solidity, flexibility and tensile strength. The cellulose is then combined with the vegetables and after a few days, films with various attributes begin to form.

Some of these films are rigid and brittle while others are softer and flexible, but they all behave very similar to ABS, the most used plastic for 3D printers, but unfortunately derived from petroleum and not much environmental-friendly.

The findings have been published in the ACS journal, Macromolecules, and could pave the way to a new bioplastic filament for our 3D printers.

Despite this research using edible vegetable waste, these kind of researches are not controversy free. As far as they use vegetables used for human feed there are concerns it could lead to higher prices for these vegetables.



bioplastic filament for 3D printers