

Coca-Cola Continues to Enhance 'PlantBottle' Technology



Coca-Cola Director, Yu Shi

The success of its PlantBottle has motivated Coca-Cola to set even more aggressive company goals toward sustainable development and seek more outside partners around the world – especially universities and research institutes – to advance technologies for further improvements to the packaging, according to Yu Shi, director Next Generation Materials & Sustainability Research, for Coca-Cola Company, Atlanta.

Yu Shi was on campus to attend Renewable Bioproducts Institute's inaugural symposium, "Renewable Bioproducts: Advances in Lignocellulosic Processes and Products," Oct. 1-2.

In 2009, the company rolled out the first fully recyclable PET plastic beverage bottle made partially – up to 30 percent – from plants. The PlantBottle delivers the same performance – shelf life, recyclability, weight, appearance – but it reduces potential carbon dioxide emissions from PET plastic bottles and dependence on fossil fuels, like petroleum, when compared to traditional PET plastic.

"We looked at this from the end user's perspective," she said. "We know that more and more of our consumers are concerned about the footprint they and the products they use are leaving behind. The PlantBottle has made a big impact on that footprint."

The bottle is now in 37 countries – more than 29 billion bottles in the world – and its use has removed more than 190,000 metric tons of carbon dioxide from the air, according to Shi, adding the company has set a 2020 goal of doubling that volume.

In some markets, Coca-Cola is combining materials from plants with recycled PET to enhance the package's environmental performance. For example, in Denmark, PlantBottle packaging is made with a combination of

up to 15 percent materials made from plants and 50 percent recycled materials.

The new packaging uses natural sugars found in plants to make ingredients identical to fossil-based ingredients traditionally used in polyester fibers and resin for bottles. Currently, PlantBottle is made using sugar cane ethanol from Brazil, the only first-generation biofuel widely recognized globally for its unique environmental and social performance.

The success of this project has been directly connected to the partnerships Coca-Cola formed with outside entities.

“We are seeking partners, even today, because there are still challenges – several challenges – we face as we move forward toward our goals for 2020 – offering a carbon neutral, 100 percent renewable, responsibly sourced bottle that is fully recyclable.”

Meeting that goal means looking outside Coca-Cola research labs for institutions that can provide additional minds.

“We did not do this all internally,” Yu Shi said. “We worked with academic researchers and we continue to work with partners to build a supply chain, connecting the dots to improve upon what we have now. We made the decision to include others in order to drive down the costs and get greater benefit. We are also working with our partners to crack the code on plant-based purified terephthalic acid (PTA) – which accounts for the other 70 percent of PET. We’re not there yet, but we can be.”

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