Biotechnology Innovation Organization

Sustainable Sourcing: Plastics for Tomorrow

Plastic is versatile, durable and, as a result, one of the most popular materials in the world, but our obsession with plastics is damaging our planet—from pollution in our oceans to emissions from production. Biotechnology is creating plastic alternatives—**often called bioplastics**—that reduce environmental impact by using renewable chemicals.

Using renewable feedstocks, like plants, industrial and food waste, and agricultural residues, we can create renewable chemicals to replace fossil fuel-derived ingredients used in conventional plastics

RENEWABLE

Biotechnology allows us to make renewable chemicals that are identical to their petroleum equivalent. Given this equivalency, these products can be recyclable.

RECYCLABLE | BIODEGRADABLE

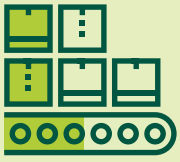
Using plants and other renewable resources, we can create bioplastics that are biodegradable and just as functional as conventional plastics.

BIOPLASTIC USES

As demand for green products increases and production methods advance to scale, the bioplastic market will swell.

PACKAGING

CONSTRUCTION



TRANSPORTATION

CONSUMER GOODS

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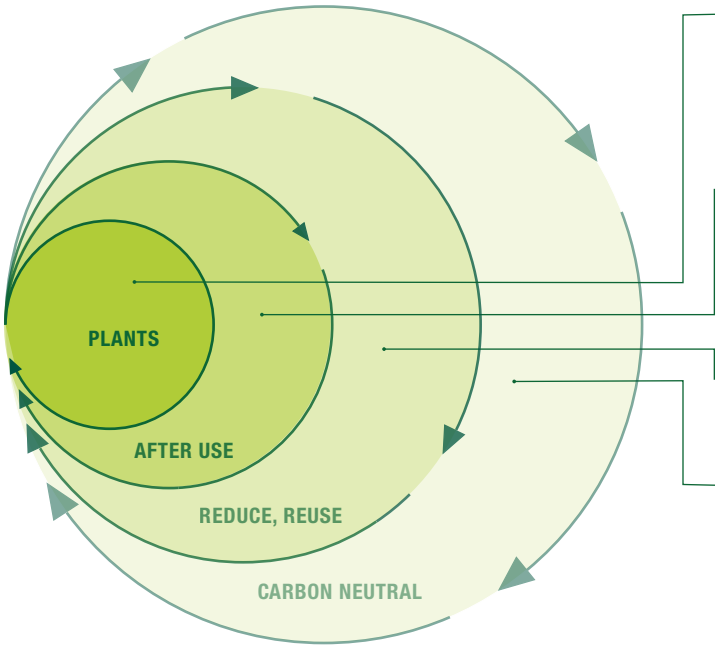
RENEWABLE CHEMICALS REDUCE ENVIRONMENTAL IMPACT

A wide range of feedstocks can be used to produce renewable chemicals for bioplastcs—from first generation feedstocks, like plants and ag waste, to more advanced ones like food and industrial waste. Biotechnology allows us to **close the loop on the circular economy and achieve carbon neutrality**.



Agricultural Commodities: Crops like corn, sugarcane and beets are some of the first feedstocks used to create renewable chemicals.

Organic Waste: Cooking oils, organic compost and discarded portions of food crops, can be converted to renewable chemicals to develop bioplastics. Researchers are now beginning to use ag residues, like wheat straw, corn stalks, and sugarcane bagasses.

Household Waste: Unsorted, recyclable household waste that would otherwise be landfilled or incinerated can be biologically converted via chemical recycling processes.

Industrial Waste: Gases from manufacturing can be captured and used to create renewable chemicals for bioplastics. By repurposing and redirecting gases from being emitted as pollution, renewable chemical innovators are reducing environmental impact through the circular economy.

POLICIES TO ADVANCE

As Congress seeks to pass climate legislation to reduce greenhouse gas emissions and waste from plastics, it should advance policies that support research, development and investment in biobased products and bioplastics derived from renewable chemicals.

FARM BILL ENERGY TITLE

Within the Farm Bill's energy title, the Biorefinery, Renewable Chemical and Biobased Product Manufacturing programs are critical to renewable chemical innovation and the growth of the biobased economy. Through this program, companies developing renewable chemicals and biofuels can secure financing through rural lenders.

RENEWABLE CHEMICAL TAX CREDITS

Several states, including Iowa, Maine and Minnesota, have established renewable chemical tax credits, providing incentives to companies making biobased alternatives. BIO continues to advocate for renewable chemical tax incentives in both the states and Congress to advance investment in renewable chemical innovation.

BIOPREFERRED PROGRAM

The goal of USDA's BioPreferred Program is to increase the purchase and use of biobased products, like bioplastics. Administered through the Farm Bill's Energy Title, BioPreferred provides a label to products that are biobased and prioritizes these products for federal procurement.

Look for this symbol which identifies USDA Certified Biobased Products