

BIOPLASTICS

SOME OF ITS PROS AND CONS

Bioplastic is the term used to describe plastics made out of biological materials (eg. plants) instead of petroleum. This potential solution to the plastic pollution problem has gained a lot of popularity over recent years due to scientists claiming how bioplastics will reduce our world's carbon footprint.

However, if we consider the environmental impact of cultivating crops for producing bioplastics, it brings about a whole set of issues such as pollution from fertilizers, the repurposing of land that could've been used for food production, etc. At the end of the day, there's still a lot of uncertainty around whether or not bioplastics are really worth the hype.



QUICK FACTS



A study done on bioplastics in 2017 determined that switching from traditional plastic to corn-based PLA (a specific type of bioplastic) would cut U.S. greenhouse gas emissions by **25 percent**.



PLA, the most common type of bioplastic, can be **20 to 50 percent more expensive** than using virgin and/or petroleum-based plastics because of the complex process used to convert crops into bioplastic.



Bioplastics are considered to be less toxic than petroleum-based plastics. **They do not contain BPA**, which is a toxic chemical found in traditional plastics that is capable of negatively impacting one's health.



Not all bioplastics are biodegradable. Even among the biodegradable bioplastics, they still need to be sent to industrial composting facilities since the material can only break down at high temperatures.



In 2019, **over 3.4 million acres** of land were required to grow crops that were used solely to produce bioplastics. Many worry whether bioplastics are the best use of land, given growing demands for food and agriculture.



Bioplastics **generate more pollutants** than petroleum plastics because of the fertilizers/pesticides used for crop growth and the byproducts of chemical processes required to turn these crops into plastic.

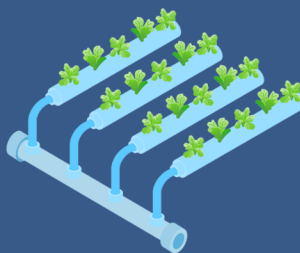
NEW SOLUTIONS

WASTEWATER PLASTICS



Some scientists have developed systems to transform solid waste and wastewater into bioplastics. If this solution turns out to be viable, these wastewater plastics will be cheaper and more environmentally friendly.

USING FOOD WASTE



Another form of bioplastic has been the repurposing of food waste into plastics. The startup Full Cycle Bioplastics has already begun making PHA (a type of bioplastic) from organic waste - the material is biodegradable and non-toxic.

PLASTICS FROM BACTERIA



Various labs have created bioplastics from cyanobacteria (AKA a type of algae). While the solution is far too expensive to mass market at the moment, researchers are continuing to identify newer production methods for this bioplastic.

DESIGNED BY THE PLASTIC SHIFT

To learn more about bioplastics, visit www.theplasticshift.com
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