

# De-Bunking Misconceptions about Bioplastics

## Biobased, Biodegradable, Compostable are Not the Same

The general term “bioplastics” is often used to describe a wide variety of different materials, and the terms “bio-based,” “biodegradable” and “compostable” may be used incorrectly, which can contribute to consumers’ confusion. As we move toward a more circular way of life, biobased plastic material is a sustainable option to consider. Biobased plastics are derived from non-petroleum biological resources. They are not necessarily compostable or biodegradable.

Until recently, producers have been making plastic products that last longer, weigh less, and are more efficient, often disregarding the longer-term effects these products have on the planet. A more sustainable mindset is one that considers the intricate and interactive ecosystem that must be kept healthy in order to survive. Discussing and considering plastic material options made with renewable raw materials is a first step.

Words like “biobased” and “renewable” refer to the sources of the raw materials for products. Wood, corn, soybeans and grasses are all forms of biobased or renewable feedstocks. As an example, agricultural crops, such as corn and soybeans, can be harvested every year; therefore, they are annually renewable.

### Are biobased plastics biodegradable? Great question!

The terms biobased and biodegradable are sometimes used interchangeably, but they are not the same. In fact, not all biobased plastics are biodegradable. Biobased plastics derive from non-petroleum biological resources; the term “biobased” only refers to what was used to make the material.

Biodegradable plastics degrade via exposure to naturally occurring microbes, such as bacteria or other living organisms. Therefore, when evaluating sustainability options, it’s essential to understand when choosing a biobased plastic that you may not be choosing a biodegradable one.

The biobased plastics available today that also biodegrade are made of two materials: biomass

and polyesters derived from plants. There are two kinds of biobased polyesters: polylactide acid (PLA) and polyhydroxyalkanoate (PHA). Biomass based plastics are made of starch and cellulose obtained from crop residues, as well as wood from trees.

Many consumers and manufacturers believe that just because a material is based on a renewable resource, then it must be biodegradable and compostable, but this is not necessarily true.



Biodegradable and compostable plastics biodegrade under certain conditions. They may be made from fossil-fuel based materials. While they can contribute to reducing “unavoidable” littering, use of biodegradable and compostable plastics do not fully solve the littering problem. To help achieve a circular economy, biodegradable and compostable plastics should be used along with fossil-fuel based plastics that are recycled and reused.

Transitioning to either biobased or biodegradable resins can help keep the ecosystem of our Earth sustainable for us and for future generations.

**Discover how a partnership with Nexeo Plastics can help you with your sustainable material selection.**

## SOURCES

1. <https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/1751-7915.13502>. (<https://bpiworld.org/Resources/Documents/Confused%20by%20the%20terms%20Biodegradable%20Jan%202015.pdf>, PG 1)

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