FAQ Bio-based/sourced plastics, bio-degradable and compostable plastics (08/04/2024)

Note: sorting and recycling technologies are constantly evolving, therefore, the design for recycling guidelines evolve too. Please make sure you have the latest version of this file, by verifying the date of the last update on Fost Plus' website.

What are "bio-plastics"?

On OVAM's website, you can find a complete and very clear explanation of the differences between bio-based/bio-sourced and bio-degradable plastics:

According to OVAM:
"*Bioplastic is not a type of plastic, but a collective name for plastics that differ greatly. The 'bio' in bioplastics refers to two different aspects that are often confused with each other, namely:*

- ***Bio-based/Bio-sourced plastic: the origin of the material.*** *Plastics made from biomass (bio-based plastics), organic substances, CO2 or CH4 (instead of petroleum).*
- ***Bio-degradable plastic: the property of the material****. The material is bio-degradable or compostable.*

The origin of the material and its properties are completely unrelated. Bio-degradable plastics are not necessarily made from biological material and, conversely, bio-based plastics are not always bio-degradable. This figure illustrates which types of bioplastics you can distinguish."

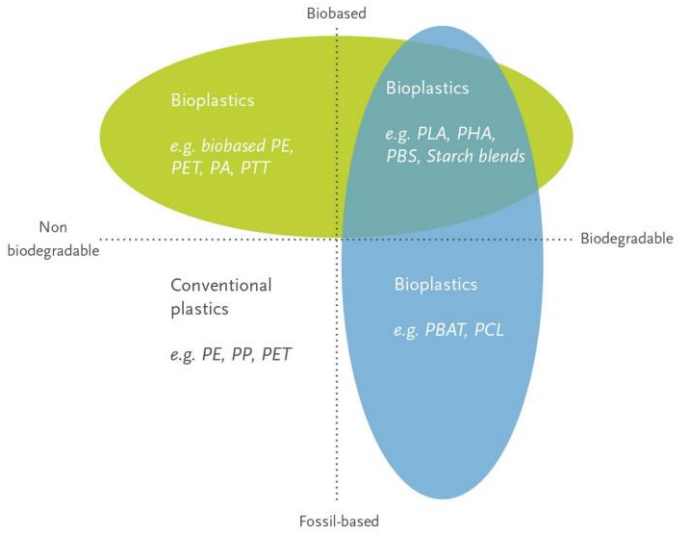

Figure 1. From OVAM's website - https://ovam.vlaanderen.be/bioplastics?p_l_back_url=%2Fzoeken%3Fq%3Dbioplastic

What is the difference between biodegradable and compostable?

Compostable materials are a sub-category of biodegradable materials. Only certain biodegradable materials are also compostable. The Ellen MacArthur Foundation gives a clear definition of both terms:

- ***Biodegradable***: able to be broken down into carbon dioxide, water, and biomass by the natural action of microorganisms over an unspecified length of time and in undefined conditions.
- ***Compostable***: able to be broken down into carbon dioxide, water, and biomass within a specific time-frame under specific conditions. This can mean either home-compostable (at ambient temperatures and

with a natural microbial community) or industrially compostable (under increased temperatures, humidity, and specifically formulated microbial conditions). Compostable material can be made from either bio-based or petro-chemical inputs. Compostable packaging is subject to certification standards in North America, Japan, and Europe.

Are bio-based/sourced plastics compatible with recycling?

If a fossil-based plastic is accepted in the blue PMD bag, then the same bio-based plastic is accepted as well as they have the same chemical structure. Consequently, a fossil-based plastic and its bio-based equivalent will behave the same way in a sorting center and during the recycling process (e.g. bio-sourced PE, bio-sourced PP, bio-sourced PET or bio-sourced PS are all accepted in the PMD bag).

Are bio-degradable (including compostable) plastics compatible with recycling?

Bio-degradable and compostable packaging are not compatible with recycling and have all been listed by the Interregional Commission of Packaging (IVCIE) as "disturbing" packaging (i.e. "discouraged" in the declaration in MyFost), meaning that they are applied the highest Green Dot rate. They are not accepted in the PMD blue bag in Belgium.

First of all, there is a great risk that the consumer doesn't dispose of the bio-degradable or compostable plastic packaging properly, especially when both "conventional" (fossil-based non-biodegradable) plastics and bio-degradable or compostable plastics can be used for the same application on the market. There is a high possibility that, in spite of labelling instructions, the consumer would dispose of the bio-degradable or compostable plastic in the PMD bag because it looks like a conventional plastic (e.g. a PLA bottle looks like a PET bottle). Then, in the sorting center, the bio-degradable packaging can be identified by mistake as another plastic, and directed to a recycling stream where it creates contamination and decreases the value of the output recyclate.

Furthermore, there is a risk of encouraging littering by using bio-degradable plastic packaging, aggravated by the difficulties of the consumer to distinguish between conventional plastics and bio-degradable plastics.

Finally, the regulations in Europe tend to be cautious about these packaging, in the image of the PPWR proposal of November 2022, proposing to limit the bio-degradable packaging to a very restricted list of applications. The European Commission also published a communication in November 2022, regarding bio-based, bio-degradable and compostable plastics, that can provide further details on their position: https://environment.ec.europa.eu/publications/communication-eu-policy-framework-biobased-biodegradable-and-compostable-plastics_en.

As of the 1st of January 2024 sorting food waste is mandatory across Europe. All three Regions have transposed this obligation into their legislation and therefore it is no longer allowed to throw organic waste together with residual waste. Please note that anyone who composts at home and therefore processes vegetable, fruit and garden waste themselves is not obligated to use an organic waste container/bag. However, bio-degradable and compostable plastic packaging are not accepted in most organic streams in Belgium, regardless of the labelling instructions. For the instructions regarding organic waste, please refer to your region.