TYPES OF BIOPLASTIC

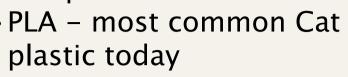
CATEGORY 3 -COMPOSTABLE

Petroleum based poly that is compostable PBAT most common compound today. Often blended with PLA or added to paper.



CATEGORY 1 - PLA

- ·Varying %s of renewable input
- Varying types of renewable input
- Most require industrial compost
- •PLA most common Cat





CATEGORY 4 -PETROLEUM BASED

Non compostable / biodegradable (though sometimes recyclable).



CATEGORY 2 -PLANT BASED

- Varying levels of renewable content
- Most are "drop-in" plastics that can be recycled with traditional plastic counterparts



Oxo-biodegradable plastics (with additives for rapid degradation) are not considered bioplastics. They are not derived from renewable materials nor are they biodegradable or compostable, and instead rapidly degrade into tiny bits of plastic. They encourage misguided consumer actions, have unknown and potentially harmful impacts on the recycling stream, and are harmful to ocean life because they result in increased microplastics.

BENEFISAND CHALLENGES OF BOPLASTIC

BENEFITS



CHALLENGES



Flexible, moisture proof, thin and lightweight

Category 1 and 3 plastic is not as strong, is sensitive to light and more air permeable than petro-plastic

Category 1 and 2 made from renewable resources R&D could lead to more sustainably produced over time - i.e. straw, bagasse, and food waste

Bioplastic = virgin material; no recycled content. Common inputs require resource intensive, industrial ag. Often only partially made with bioplastic.

Category 1 compostable in industrial settings. A SMALL set would biodegrade naturally / backyard compost

Access to industrial compost = limited Bioplastics=limited Vast majority never biodegrade as litter. Ocean pollution - customers being mislead.

Category 2 can often be recycled with petro-based plastics

Consumer confusion leads to high levels of contamination.

Lower GEG emissions than <u>virgin</u>, traditional plastic counterparts.

Often, higher GHG emissions than recycled traditional plastic