

BACKGROUND AND SUMMARY POINTS ON THE
**Review of the Life Cycle Analysis Report published by the
Oregon Department of Environmental Quality (DEQ)**



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BACKGROUND

In August of 2018, Oregon DEQ released a [report](#) titled, "The Significance of Environmental Attributes as Indicators of the Life Cycle Environmental Impacts of Packaging and Food Service Ware." In their [own words](#),

"DEQ was interested in understanding how successful common packaging attributes are at predicting reduced environmental outcomes. We wanted to understand where and when the relationship between attributes and the inferred environmental preference holds true and the scale of impact reduction."

The study sought to test the assumption that there is a relationship between certain attributes attributed to packaging and food serviceware and reduced environmental impacts. They looked at four attributes in this report – "Recycled Content", "Biobased", "Recyclable", and "Compostable". The report [explains](#).

"Many people assume that these attributes convey reduced environmental impacts relative to other options without that same attribute. But, how well do these descriptors actually predict lower impacts across the entire packaging life cycle?"

In order to take on questions like these, Life Cycle Analysis (LCA) is a commonly used tool. While LCA-based studies are perceived to be precise and objective exercises, they are only as accurate as their input data and assumptions. BPI Members with expertise in LCA methodology have reviewed the published report and the LCA studies it assessed, and found that for the "Compostable" attribute, several of the conclusions are based on flawed methodologies and outdated or misleading inputs. More importantly, the study fails to account for how compostable products are linked to value compost and the composting process and their impact on overall carbon emissions. Accounting for this impact is critically important for understanding the true environmental footprint of compostable materials. The points below summarize these findings and an in depth discussion can be found [here](#).

SUMMARY POINTS

1

No Credit Given for Carbon Sequestration or Recovery

In some of the referenced studies, non-compostable materials were assessed as more environmentally-friendly than compostables because of how they perform in a landfill, recycling or incineration. However, **in the assessment of compostable materials there is no credit given for the value of compost and the composting process itself for carbon sequestration or recovery. The real value of compost – improvements in soil structure and workability, reduced runoff, increased water holding capacity, increased biodiversity – is not captured at all in the studies referenced by the report.**

2

Increased Diversion of Food Waste is Ignored

The report shows a negative impact for composting at end of life due to the decomposition of compostable materials during the process. **At no point does the report's analysis capture how compostable products contribute to Global Warming Potential (GWP) benefits as they help divert food waste away from landfills and into organics recycling via composting.** The report author has [subsequently said](#) that noting this omission in the original report is sufficient, but it is [BPI's view](#) that this connection to food waste diversion is paramount. Using a compostable products is not just about addressing packaging or plastic waste, but, more critically, about recycling food waste through a process that can result in increased carbon sequestration and reduce food waste-related methane emissions from landfills. **BPI only certifies products and packaging associated with food waste and yard trimmings.**

3

Small Number Of Studies Referenced - 60% Are Not Relevant Due To Age

The report relies on 18 studies (11 for “Compostable Packaging Materials” and 7 for “Compostable Food Service Ware Materials”), which is an extremely small sample size. Further, this small number of studies referenced could only be achieved by expanding the initial search to include individual polymers. The data in these studies was used to compare the life cycle impacts of compostable and non-compostable materials. By international standards, for studies to be considered “relevant” in an LCA, they must have been completed within 5 years of the article or report referencing them. In this case, **60% of the studies referenced in the report do not meet that 5-year threshold.** In fact, the study that is relied on most was completed in 2010 – 8 years prior to the publication of this report.

4

Relevancy Is Critically Important With Emerging Technologies

“Relevancy” is particularly important with emerging technologies like biopolymers where manufacturing efficiencies are improving quickly with scale. As an example, published **total GHG emissions (cradle to factory gate) for PLA decreased by over 50% from 2010 to 2015, resulting in drastically different input data for LCA reporting.**

5

GWP Dataset Appears to be Based on One Study

In the data presented for Global Warming Potential (GWP) there are 375 data points. If you add up the number of comparisons that could have generated these data points from the surveyed literature, it becomes apparent that one study makes up 90% of the data presented. This single source of data appears to come from one of the oldest references that is also older the 5 year standard for studies included in LCAs.

6

Presentation of Data is Misleading

The reports use of histograms and summary charts to summarize findings gives the impression that the data being presented is categorical, as you might see in a typical bar chart. **Histograms are used to show distributions of data points, and are not appropriate for point-to-point comparisons** like those made in the report between compostable and non-compostable materials.

7

Majority of Referenced Studies Did Not Utilize Appropriate Method

LCA studies fall into one of two categories – Attributional or Consequential. **Consequential LCA is the preferred approach for modeling compostable packaging and food service ware accurately, but 13 of the 18 studies referenced are of the Attributional LCA variety.** Consequential LCA is preferred for compostable materials because it most accurately captures the indirect benefits these materials have as they help increase

8

False Assumptions Utilized for Behavior of PLA in Landfills

Many of the **studies referenced are based on false assumptions and estimations of PLA and its behavior in landfills**, which increased their estimated Global Warming Potential (GWP) for compostable materials. Published studies have shown that PLA is stable and does not significantly degrade in a landfill environment.

This LCA report is not alone in questioning the value of the recyclability and compostability attribute, in the broader context of zero waste. Last year [Greenpeace issued a report](#) calling into question compostable packaging, and [BPI issued a response](#) again emphasizing the key role compostable products have in increasing the collection and composting of food waste.

[Click here for a PDF of the complete Industry Response document](#)