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"Biodegradable" is one of Packaging's Most Misused Terms

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If I were to select the single most misused and misunderstood word used today in the packaging arena, I would have to say "biodegradable." A better example of the latest hype than a stroll through the aisles of PACK EXPO International 2008. After polling vendors about what data substantiates these claims, it seems that the term, "biodegradable" should raise a greenwash warning flag, especially for fossil fuel-based plastics.

Like the term "renewable," there is a sense that use of the term, "biodegradable" communicates something inherently environmental. Nature biodegrades some things pretty well: leaves, people and other bio-based materials—all current carbohydrates that microbes can recognize and eat as food, leaving behind nutrients, minerals and evolving heat and carbon dioxide. The situation is very different for synthetic, fossil fuel-based polymers that microbes don't necessarily recognize as food. Despite this, "biodegradable" is perceived by consumers and there is widespread belief that "biodegradable" means that something disappears, according to an American

Even if we successfully engineer fossil fuel-based polymers to be truly biodegradable within a timeframe that is meaningful to the environmental benefit of taking a 100 million-year-old fossil fuel-based polymer that is non-renewable and adding it to a landfill already oversaturated with respect to carbon that the last thing we need is to add more fossil carbon to the system. What we need to do is to collect and recover plastics much like they do in Europe.



We do an abysmal job of collecting and recovering plastic packaging in the United States—less than 10 percent of all fossil-fuel-based plastic packaging. Perhaps the biggest misperception is that biodegradation solves over-dependence on landfills. But this misperception is compounded by the lack of a coherent, national strategy for post-consumer plastic waste. A significant misperception is that landfills are big compost piles. They aren't.

Today, landfills are built and lined with heavy-gauge plastic to prevent any leaks. When a landfill is capped to prevent any moisture from entering,

Landfills are designed to entomb things, not to encourage biodegradation. In a landfill, the moisture, oxygen and microbial conditions for biodegradation don't readily exist. We find newspapers in

The exception to this general rule is wet organic materials, like food and yard trimmings, which comprise about 25 percent of the waste in landfills. They have a tendency to biodegrade in landfills, but in the oxygen-deprived conditions of a landfill, they emit methane, a gas with 23 times the global warming potential of carbon dioxide.

If we are going to encourage biodegradability in materials, we need composting facilities as a recovery system designed to manage organic waste.

We would get significant environmental benefits if we removed readily biodegradable materials out of landfills. And we need to improve our recycling infrastructure for non-renewable materials, because they're nonrenewable, and our children might need them some day. This speaks to the need for a broad range of recycling infrastructure, be it polymer recycling or an infrastructure for composting. As it stands, we're capitalizing on a lack of understanding of our infrastructure.

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