

Compostable, biodegradable not identical

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(July 13, 2007 4:45 p.m. EDT) -- A recent *Plastics News* article ["Officials: Some mislabel bags as biodegradable," Page 4, June 11] was critical of the misuse of American Society for Testing and Materials standards by some sellers of biodegradable plastic products and of bags claimed to be biodegradable.

The real issue is not the meaning of the term "biodegradable" or the definitions provided by ASTM. Rather it is one of confusion caused by purveyors of "compostable" plastic bags and their insistence that the two words are interchangeable.

ASTM defines a biodegradable plastic as "a degradable plastic in which the degradation results from the action of naturally occurring micro-organisms such as bacteria, fungi and algae." A compostable plastic is defined by ASTM as "a plastic that undergoes biological degradation during composting to yield carbon dioxide, water, inorganic compounds and biomass at a rate consistent with other known compostable materials and leaves no visually distinguishable or toxic residues."

In other words, a compostable plastic must also be biodegradable, but a biodegradable plastic need not be compostable.

Compostability requires the plastic biodegrade aerobically at a rate similar to other compostable materials, the residues are not distinguishable (as plastics) and that they are not toxic, whereas a biodegradable plastic simply has to biodegrade.

Legislation in California that prohibits displaying any environmental claims on bags and packaging unless the product is compostable according to the ASTM standard specification has confused the situation more. This, despite very little plastic packaging, is or could be destined for compost disposal, given infrastructure availability.

So contrary to what the interviewees in the article say, the suppliers of bags claimed to be biodegradable are not scofflaws, nor are they hiding behind their lawyers. Rather they are making scientifically proven claims relating to the properties of their products as defined by ASTM. They specifically do not claim their products are compostable since, indeed, these products do not meet the applicable ASTM specification for compostability.

The bags meet the other requirements of the ASTM specifications, but they do not biodegrade quickly enough in a compost environment.

Although California has chosen to ignore the environmental benefits that can accumulate from other technologies that are not compostable according to current ASTM specifications, the industry group members I represent are advised to respect this legislation.

A much more constructive approach for jurisdictions such as California is to require labeling that indicates what disposal environment the material is designed for. It is reasonable to have to label the biodegradable bags as "not intended for composting."

While not specifically stated, a primary type of packaging targeted by this article is using technology called oxo-biodegradability. This is a two-stage process recognized by an ASTM standard for plastics that

degrade by reaction with atmospheric oxygen then biodegrade. Most products that utilize this process use additives to accelerate their degradation.

The type and level of additive somewhat can control the rate of degradation and biodegradation of these products, but even then, not quickly enough to be labeled as compostable according to the ASTM standard.

It should be noted though, in several real-life managed compost facilities, they have been shown to compost well. The bags tested in the study by Professor Joseph Greene mentioned in the article used oxo-biodegradable retail bags that were not designed for compost applications. So it is not surprising he concluded they were not compostable.

Oxo-biodegradable technology is used around the world because it works — plastic products using the technology degrade and biodegrade in the disposal environment they are designed for. Because this is an additive technology, it is easy to implement in existing processing facilities. Products process virtually identically to conventional plastics and their properties are the same.

Unlike compostable products, used packaging with this technology is fully compatible with the existing recycle stream. And from a very practical viewpoint, the affordability of these products, which cost a bit more than the same product using conventional plastics, means they are readily adopted by packagers, retailers and the consumer.

There is no ASTM specification for degradable and biodegradable plastics whose benefit is anything other than compostability. However, there is much published information that demonstrates properly designed oxo-biodegradable products degrade and biodegrade in a variety of disposal environments.

Work is ongoing at ASTM to produce much-needed standard specifications that define acceptable performance in such environments.

For more information on oxo-biodegradable plastics, visit our Web site at www.oxobio.org.

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[[Opinion](#)]