



August 11, 2009

Rory Harrington-FoodProductionDaily.com

Re: "Oxo-bio industry says product claims are valid"

Dear Ms. Harrington:

This note is in response to the article originally published in FoodProductionDaily.com on August 4, 2009 and reported in GreenerPackage.com, regarding Dr. Scott's comments on ASTM D6954. While his comments are partially correct, Dr. Scott's interpretation of the document is incorrect.

As background, I collaborated with Graham Swift (a former Board Member of EPI, an oxo additive supplier) to create this standard, along with other members of the ASTM sub-committee D20.96. We worked for a 2-3 years to create this document, which is titled:

- "Standard Guide for Exposing and Testing Plastics that Degrade in the Environment by a Combination of Oxidation and Biodegradation"

What is important to recognize is that this document is a "Standard **Guide**" and not a "Standard **Specification**". While this document is a recognized ASTM Standard, as a guide, ASTM D6954 does not contain any pass/fail criteria, as are found in specifications such as ASTM D6400 or the CEN Norm, EN 13432. The definitions in the *ASTM Form and Style Guide* provide insight into the differences between these 2 types of documents:

- "**guide**, *n*— a compendium of information or series of options that does not recommend a specific course of action.  
DISCUSSION—A guide increases the awareness of information and approaches in a given subject area."
- "**specification**, *n*— an explicit set of requirements to be satisfied by a material, product, system, or service.  
DISCUSSION—Examples of specifications include, but are not limited to, requirements for; physical, mechanical, or chemical properties, and safety, quality, or performance criteria. A specification identifies the test methods for determining whether each of the requirements is satisfied."

The intended goal of ASTM D6954 was to provide a set of directions for suppliers that were looking for ways to generate and report data (in a consistent format) demonstrating that their additives would in fact foster biodegradation, as claimed. This is clearly stated in the Scope of the Guide:

“This guide provides a framework or road map to compare and rank the controlled laboratory rates of degradation and degree of physical property losses of polymers by thermal and photooxidation processes as well as the biodegradation and ecological impacts in defined applications and disposal environments after degradation.”

The 60% criteria that Dr. Scott refers to is not a “pass/fail” threshold but rather the point after which the testing may be stopped and reported. This criteria was intended to prevent manufacturers from achieving very low levels of conversion to carbon dioxide or methane and then reporting on material performance. Below is the text from in the Section 6:

6.6.1 “For products consisting of a single polymer (homopolymers or random copolymers), 60% of the organic carbon must be converted to carbon dioxide before ending the test, and the gel content generated in Tier 1 must be no higher than 10%.  
NOTE 7—Testing may be continued to determine better the length of time the materials will take to biodegrade.”

If this section is confusing to the additive suppliers, it will be revised in the next update of this standard, which is due shortly.

As stated previously the goal of ASTM D6954 was to provide suppliers a method for generating and PRESENTING data from which the scientific community and customers could draw their own conclusion.

What is disappointing is that so little data has been reported since ASTM D6954 was created. For example, no data has ever been shown to support claims like:

- “With Perf Go Green, **In 2 years, 1** bag leaves nothing harmful behind, Nothing”
- “Reverte™- which when added to the PET plastic resins at the manufacturing stage of the bottles, will cause the finished PET bottle to oxo-biodegrade after a specifically programmed shelf life – in landfills / streams / rivers etc.” (Planet Green Bottle)

Additives to traditional resins to promote biodegradation may well have value in specific applications and disposal pathways. Until the community of additive suppliers correctly use documents, such as ASTM D6954, to generate and **publically report** data, their far reaching and unsupported claims of “biodegradability” will continue to be met with skepticism.

Regards  
Steven Mojo  
BPI Executive Director

cc. Anne Marie Mohan-GreenerPackage.com, Graham Swift, Ramani Narayan (chair of ASTM D20.96) and J. Reske-EU Bioplast