RCBC Backgrounder

Providing information on issues of importance

TOPIC: **Plastic Bags**
DATE: **November 3, 2008**

A number of degradable plastic products have emerged in the Canadian marketplace with claims of being more environmentally responsible than traditional plastic. For the most part, consumers are discovering these new plastics in the form of carrier bags from well-known retail, drug and grocery stores which have made the switch from conventional plastic shopping bags.

As the use of degradable plastic increases, so does the confusion surrounding the environmental claims put forward by the degradable bag industry. RCBC has created this backgrounder with the hope of better informing the public, elected officials and the media. This document provides an overview of degradable plastics and outlines some of the principal concerns surrounding the use of oxo-biodegradable plastics, a degradable plastic increasingly being used in disposable carrier bags.

What are degradable plastics?
Much of the confusion surrounding degradable plastics centers on terminology and, more specifically, with the seemingly interchangeable use of the terms “degradable” and “biodegradable”. As a start, consumers should be aware that “biodegradable” and “degradable” do not mean the same thing.

The Environment and Plastic Industry Council (EPIC) has carried out considerable research on the use of degradable plastics in Canada. As stated by EPIC, the term ‘degradable’ broadly describes a material which breaks down into smaller pieces or particles; also referred to as a process of degradation. On the other hand, the term ‘biodegradable’ refers to the process that takes place after degradation. Biodegradation is the consumption of the smaller pieces or particles by micro-organisms, resulting in water, carbon dioxide and organic matter.

According to EPIC, the degradable plastics available today can be classified into three main categories:

- Compostable: materials that are designed to biodegrade in commercial/industrial composting conditions over a period of 180 days into water, carbon dioxide and humus, and which leave no visible, distinguishable or toxic residue.

- Oxo-biodegradable: materials that use a chemical additive to start the degradation process, with the remnants biodegrading over time. These bags oxidize and become brittle in the environment and degrade under the influence of ultraviolet light and heat.
- Water-soluble: materials that degrade in water, usually within a specific temperature range, and then biodegrade through the action of micro-organisms in the sewage treatment system.

For the most part, the degradable carrier bags that have been introduced in B.C. fall into the category of oxo-biodegradable bags. These bags look, feel, and act like a conventional plastic bag since they are similarly composed of petroleum-based plastics such as polyethylene. The difference lies in the chemical additive included in oxo-biodegradable bags which speeds up degradation of the plastic once it comes into contact with oxygen.

A common brand found on these bags is EPI, which claims to be, "the proponent and leader of oxo-biodegradable plastic additive technology" and is the creator of Totally Degradable Plastic Additives technology. Beyond an EPI logo, oxo-biodegradable bags tend to be identifiable by the *claim* of "100% degradable" printed on the bottom of the bag.

Issues of Concern:

<u>Questionable Environmental Claims</u> –
In the past few years, a number of concerns questioning the environmental claims and implications of oxo-biodegradable bags have been voiced. In terms of performance, it has been questioned how long these bags take to biodegrade and if it is possible for the bags to biodegrade in landfill conditions given the lack of aerobic bacteria. More importantly, concerns regarding if toxins remain in the environment after the product has appeared to breakdown continue to arise.

As EPIC has highlighted in relation to degradable bags, the Canadian Standards Association and Competition Bureau recently released a new set of guidelines to prevent businesses from misleading consumers about the green benefits of their products. The new rules require environmental claims to be clear, specific, verified and substantiated with erroneous or broad statements considered unacceptable. Terra Choice, the Canadian environmental marketing agency responsible for Canada's EcoLogo program, has taken the issue a step further by publishing a document entitled the *Six Sins of Greenwashing*, which some critics may find of relevance to this issue.

<u>Lack of Third-Party Verification</u> –
One way to address and overcome questionable environmental claims is through the development of a certification program that presents third-party verification of a product meeting specified standards. A variety of such certification programs exist for

compostable plastics (e.g. ASTM D6400, ISO 17088, BPI, BNQ 9011-911) however, oxo-biodegradable plastics do not meet these standards and as such would require their own branch of certification. Such a program does not exist at this time.

EPIC is currently in the process of developing a Product Stewardship Guide and Commitment on Degradable Plastics, with plans for release in 2008. The Guide and Commitment is being drafted based on a similar degradable plastics initiative on which the Australian government and Plastics and Chemicals Industry Association partnered.

Unknown Effect on Plastics Recycling Stream –
Beyond concerns about whether degradable bags break down in a timely and clean manner, is the question of how degradable bags may affect the plastics recycling stream. While few municipalities in B.C. currently accept plastic bags for recycling, the introduction of a province-wide stewardship program for packaging could change this dramatically. The B.C. Ministry of the Environment currently has packaging listed as a products category under their list of *New Products Under Consideration*.

In August of 2007, Recyc-Quebec released a study that assessed the potential impact of degradable bags on the recycling of conventional plastic bags. Among the degradable bags evaluated were two types of oxo-biodegradable bags. The study found that while one version was compatible with traditional plastic bag recycling the other was not.

These results suggest that not all oxo-biodegradable bags are created equal and offers additional support for developing clear standards and third-party verification as discussed above. Clearly, more research will be required on the recyclability of oxo-biodgradable bags available in the B.C. marketplace if they are expected to enter the conventional plastic recycling stream.

Use of Non-Renewable Resources without Recovery -
A final concern about oxo-biodegradable bags is that the product is composed of non-renewable, fossil fuel-based inputs and there is little difference in regards to energy- and resource-use when compared with conventional disposable plastic grocery bags.

If oxo-biodegradable bags are meant to break down in a landfill environment, as they are largely promoted as doing , the products will not be recovered through recycling, resulting in a loss of resources in the same way these resources are lost through the currently used disposable plastic bags.
