PACK GREEN COALITION

Fact Sheet: Paper Recyclability

Since the end of World War II, the global production of plastics has skyrocketed. Humans have found countless uses for plastics from textiles to medical equipment to electronic devices. Plastics have undeniably revolutionized modern life and advanced our societies; however, serious environmental externalities are associated with plastic use.

In our fast-paced, throwaway economy, plastics are often the material of choice for packaging. While the durability and lightweight nature of plastics are essential for some products, those same properties contribute to the persistence of plastics in the environment. For many products, particularly single-use packaging materials, there are alternatives to plastics serve the exact same purpose and are less harmful to the environment.

Given the low recyclability of plastics, other materials, such as paper, should be used for packaging to reduce the ubiquity of plastics in the environment and their contribution to climate change.

Plastic Packaging Recycling

Global plastic waste generation in 2019 was 353 million tons, with packaging making up 40% of that total (OECD, 2022). EPA reports that in 2018, only 13.6% of plastic containers and packaging generated were recycled overall (US EPA, 2018). Furthermore, researchers estimate that only 5% of material value is successfully recovered for subsequent use (World Economic Forum, 2016). Recycling packaging made of plastic is also frequently inefficient because there are various types of resins with different recycling requirements, and some types of plastics used in packaging, such as Low-Density Polyethylene (LDPE), which is used to make thin film, plastic bags and flexible packaging, are so lightweight that they disrupt recycling machines.

With increasing population pressures, primary plastic production is estimated to grow to 1,100 million metric tons by 2050 (United Nations Environment Programme, 2021). Due to the low recyclability of plastic, this will lead to increased plastic waste in landfills. And as plastics do not biodegrade, but rather break down into smaller pieces called microplastics, they persist in the environment for hundreds of years. Microplastics have been found in marine life, drinking water, and most recently, in human blood samples (Leslie, et al., 2022).

Paper Recycling

Paper, on the other hand, does break down in landfills and has a significantly higher recycling rate. EPA reports that in 2018 the recycling rate for paper and paperboard packaging was 80.9% (US EPA, 2018). Paper and other more sustainable and recyclable materials can be used as effective alternatives to plastic packaging.

Paper Recycling

Figure 1. Waste management pathways of paper versus plastic packaging as reported by EPA in 2018

In addition, paper recycling is relatively streamlined and efficient. Recycling is first taken to a materials recovery facility (MRF) where contaminants are separated out and paper is separated into five different grades based on compositional quality (US EPA, n.d.):

1. **Old Corrugated Containers (OCC)**
   Old corrugated cardboard used to make new shipping boxes and product packaging with recycled fibers
2. **Mixed Paper**
   Mail, magazines, and telephone books used to create paperboard and tissue
3. **Old Newspaper (ONP)**
   Old newspaper used to make recycled newsprint
4. **High Grade Deinked Paper**
   Letterhead, envelopes, printer scrap that is deinked and then used to create printing paper
5. **Pulp Substitutes**
   High grade paper clippings from converting operations at paper mills that replace virgin pulp to make high grade paper

These groups of paper are recovered into bales consisting of the applicable paper grade. They are then sent to paper mills to create new paper products. Recycling paper helps industries get closer to achieving a circular economy while also supporting sustainable forestry. In fact, a recent study has shown that fiber-based packaging material is recyclable up to 25 times without losing its mechanical or structural integrity (Packaging Europe, 2022).

Paper is the most recycled material in the U.S. and is also positioned well to grow. The American Forest and Paper Association reported in 2021 that the U.S. paper industry has "$4.1 billion in manufacturing infrastructure investments, announced, planned or made, from 2019-2023" (The American Forest and Paper Association, 2021).

The demand for transportation of material goods will only increase as the human population grows and our world becomes more globalized than ever. To support these needs and avoid catastrophic pollution, producers and consumers must accept the responsibility of choosing the most sustainable materials for packaging.

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