



Deciding on Tableware

Deciding what dishes, cups and utensils to use at the next meeting or social gathering is not an easy decision. Unfortunately, there is not one product that is better for the environment overall than another but rather a list of pros and cons to consider. In the end, the choice is a personal one. When making the decision for a group of people, one should consider the participants and make the best decision for the entire group. Here are a few issues to consider before comparing products.

- Concerns about climate change.
- Concerns over the amount of trash that is created and landfill space.
- Concerns about energy use in manufacturing and transportation.
- Exploitation of natural resources.
- Ability to recycle products and used products made from recycled materials.

Prioritizing these issues will help in deciding which product is the right one for the table.

Some facts about landfills: Today's landfills are not the same as "dumps" from years gone by. No longer is garbage thrown into a heap and left to decay. Trash these days is crushed, flattened and contained in sealed cells that do not allow air, or much water inside. Storing trash in airtight cells reduces the amount of space needed from landfills and also prevents chemicals and toxins from leaching into the soil and groundwater. However, it also creates an anaerobic environment in which microbes cannot survive; microbes that would normally degrade organic trash items such as food scraps, yard waste and paper products. Without microbes, water, sunlight or oxygen, trash does not degrade at a natural rate. Researchers have found newspapers dating as far back as 20 years that are still legible. Organic substances will eventually degrade at least to some degree. However, in this environment the process of anaerobic degradation releases methane gas. Methane is more than 20 times as effective as carbon dioxide at trapping heat in the atmosphere. Landfills are the second largest source of methane. Many of the items we toss in the trash thinking they will be returned to the soil, such as yard clippings, paper products and cooking scraps are instead turning into environmental hazards.

What does this mean for your tableware choices? Beware of words such as "biodegradable" or "fully compostable". These claims are only relevant when not put into a landfill. At this time, landfills space is adequate in America, although there are certain regions that have space concerns.

Here are a few facts to consider when comparing common tableware products.

Paper:

- 👎 Compared to the products listed on this fact sheet, paper takes the most amount of energy and water to manufacture.
- 👎 Papermaking is the fourth largest contributor of greenhouse gas emissions in the manufacturing sector.
- 👎 Thirty one percent of all the trash generated by Americans is paper.
- 👎 Paper does not flatten under the weight of garbage at the landfills. Thereby making up 14% of the volume of trash in landfills in America.
- 👎 Paper will eventually degrade in a landfill, but will release methane gas in the process.
- 👎 Paper products that have been soiled with food cannot be recycled.
- 👎 White paper products may have been treated with chlorine, an environmentally harsh chemical.
- 👎 An extra ring of insulation where hands are placed is needed around cups if used for hot beverages.



- 👍 Paper is made, in part, from recycled paper, thereby reducing the amount of water, fiber and energy needed to create more paper. In 2008, 57.4% of the paper consumed in the U.S. was

recovered for recycling. For every ton of paper that is recycled the energy saved is equal to 185 gallons of gasoline and saves 3.3 cubic feet in a landfill.

- 👍 Paper tableware made from 100% recycled material is available.
- 👍 Virgin fibers that make up paper come from trees, a renewable resource. American and Canadian forestland owners are choosing to have their operations certified by a third party certification processes, such as that offered by the Forest Stewardship Council (FSC). These programs verify that forests are logged in a manner that does not degrade the surrounding environment or the natural resources used by the communities that rely on the paper industry. The FSC has certified 30,994,928 acres across the United States. In the state of Maine, 37% of forestlands are certified by the Maine Forest Service.
- 👍 Sustainably harvested forests not only benefit the local ecosystem, but also the local economy.
- 👍 Chlorine free bleaching materials are available.
- 👍 Paper products can be composted in a home environment.

Summary: Good for local economy and biodiversity (a balanced ecosystem) if harvested sustainably, will eventually break down in the landfill. Uses a lot of resources to manufacture, takes up space in the landfill and contributes to methane production.

Plastic:

- 👍 Plastics must be cleaned before being recycled, thereby using water and energy.
- 👍 Most plastic is not recovered. In 2009 only 7.1% of the plastic waste generated was recycled.
- 👍 Plastic does not degrade. Plastic is made from petroleum, a non renewable resource.
- 👍 Plastics are not suitable for hot beverages.



- 👍 Plastic takes less energy and water than paper to manufacture.
- 👍 Plastic takes very little space in a landfill.
- 👍 Since plastic does not degrade, it does not generate methane in the landfill.
- 👍 Many plastics can be recycled if they are washed free of food.
- 👍 Plastic tableware made from 100% recycled material is available.

Photodegradable plastics are available, but a landfill environment does not provide sufficient light.

Summary: Plastic does not release methane and can be recycled once cleaned. Plastic uses less energy than paper to manufacture. Plastic tableware is not often recycled by user and does not degrade landfills.

Polystyrene (Styrofoam):

- 👍 Polystyrene is possible to recycle, but it is not economically viable to do, and facilities for recycling are few and far between.
- 👍 Polystyrene does not degrade.
- 👍 Polystyrene is made from petroleum, a non-renewable resource.



- 👍 Polystyrene takes the least amount of energy, and water to manufacture.

- 👍 Polystyrene takes the least amount of raw material to manufacture.
- 👍 Polystyrene is very lightweight product so transportation emissions are low.
- 👍 Polystyrene takes up less than 1% of landfill space.
- 👍 Since plastic does not degrade, it does not generate methane.
- 👍 Polystyrene does not require an extra insulation around hot beverages for handling.

Summary: Polystyrene uses very little energy or materials to create. It takes the least amount of space in landfills and does not give off methane gas. Polystyrene is not easily recycled and does not degrade in any condition.

Ceramic or porcelain reusable tableware:

- 👤 Household dishes take the most amount of energy and water to manufacture.
- 👤 Household dishes use the most amount of energy to transport.
- 👤 Dishes must be cleaned before being used again, thereby using water, detergent and energy.
- 👤 At work many people may choose to wash and dry with paper towels.



- 👤 Does not create more waste in a landfill.
- 👤 Energy and water used in production is a onetime event.

Summary: Reusable tableware is the best way to eliminate trash from meetings and emissions from transportation. Energy used for manufacturing and washing is higher than any other product.

The best way to get the most environmental benefits from reusable household tableware is to use the same product many, many times over in order to justify the energy and water spent in manufacturing and washing. Look at use in a holistic manner and wash in the most conservative fashion.

Bioplastics: A plastic product, PLA, made mostly from corn but can be derived from soy, potato or tapioca starch. However, some PLA plastics are derived from petroleum which are developed in a way that makes them compostable. PLA looks and functions like PET plastic (the plastic commonly used for water, juice and carbonated beverages).

- 👤 PLA must be cleaned before being composted, thereby using water and energy.
- 👤 PLA does not compost well in a home composting environment.
- 👤 Taking the used tableware to a commercial composting facility, if there is one available, is an extra step in each meeting and contributes emissions from travel.
- 👤 PLA can take up to 18 months for utensils to compost in a commercial facility.
- 👤 PLA will eventually degrade in a landfill, but will release methane gas in the process.

- 👤 PLA plastics are not recyclable in most facilities.
- 👤 Some PLA products are made from genetically modified corn.
- 👤 Corn requires large amounts of pesticides and fertilizers to grow, even if grown organically.
- 👤 Large fields of corn are not ecologically rich or stable environments.
- 👤 Large corn fields lead to water pollution and soil runoff.



- 👤 PLA is compostable in a commercial composting facility.

👍 Made from renewable materials.

Summary: Bioplastics can be composted if access to a commercial composting facility is available. However, use of corn products lead to environmental degradation.

Bagasse: Tableware products made from sugar fibers left over after juice extraction.

👍 Bagasse must be cleaned before being composted, thereby using water and energy.

👍 Bagasse does not compost well in a home composting environment.

👍 Taking the used tableware to a commercial composting facility, if there is one available, is an extra step in each meeting and contributes emissions from travel.

👍 Bagasse will eventually degrade in a landfill, but will release methane gas in the process.

👍 Bagasse products are not recyclable.

👍 Bagasse is manufactured with a renewable resource that would otherwise need to be disposed of.



👍 Bagasse takes less chlorine to bleach compared to paper products.

👍 Bagasse is compostable in a commercial composting facility.

Summary: Bagasse can be composted if access to a commercial composting facility is available. The manufacturing of this product uses materials that would otherwise be wasted.

Bamboo:

👍 Bamboo grows rapidly so it is quickly renewable.

👍 Rapid growth means soils are not left exposed for long periods of time, reducing the potential of runoff.

👍 Bamboo does not need pesticides, fertilizers or a lot of water to grow.

👍 The manufacturing process is energy intensive.

👍 Some countries are harvesting their forests in order to keep up with the demand for bamboo products.

👍 Because the bamboo plant is hollow, the raw material is thin. Some products are produced with thin strips of bamboo glued together.

Summary: Bamboo is an environmentally friendly material to grow but the products that are made from bamboo often have a high glue to bamboo ratio, and are also highly energy intensive to produce and transport.