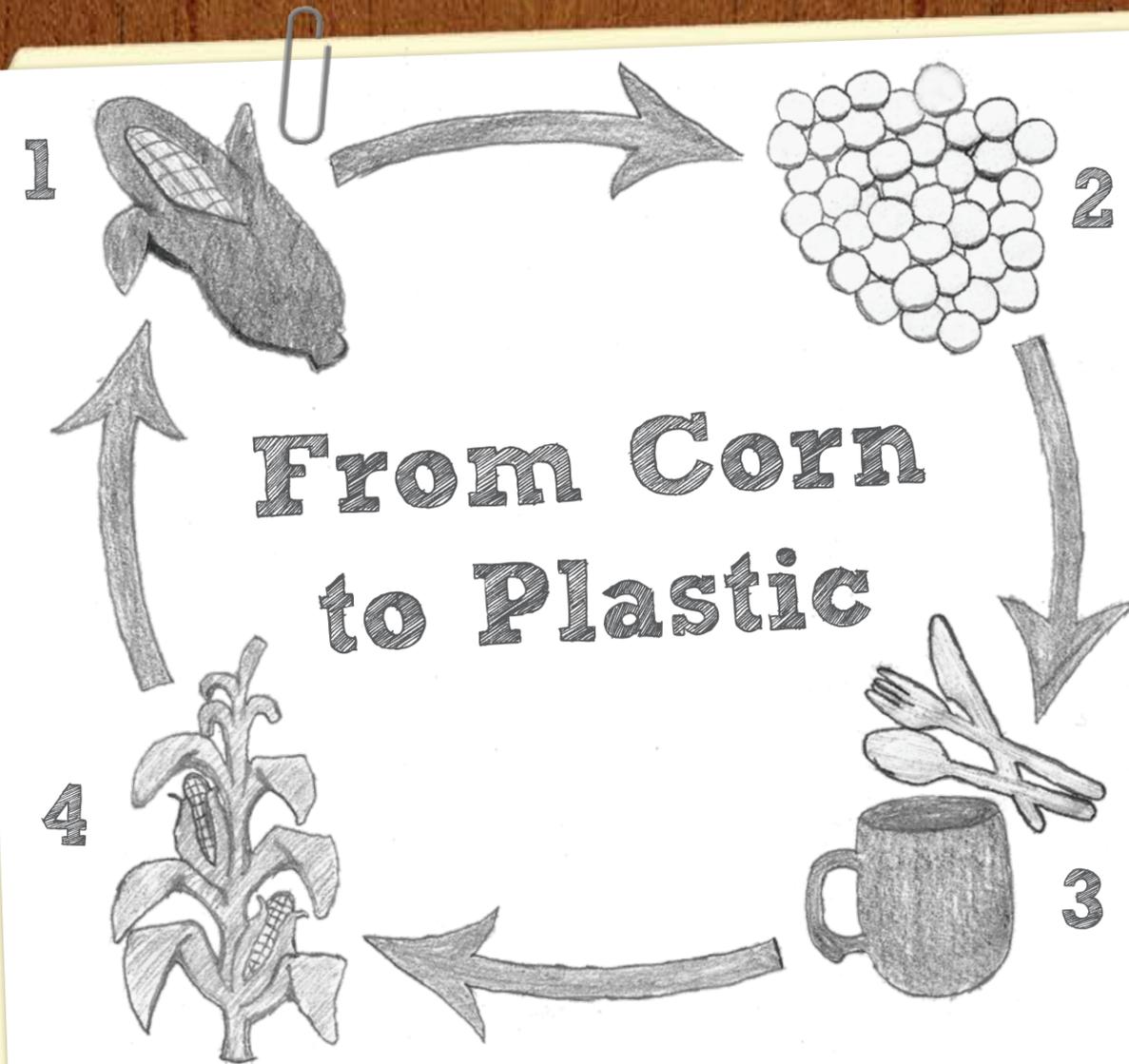


Corn-Based Products Guide

Brought to you by Michigan's
Family Corn Farmers



From Corn to Plastic

1. Corn is harvested and sent to a milling plant, where it is cooked and ground, converting the starch into sugar.
2. Microorganisms break down the sugar, forming lactic acid. The lactic acid is heated and treated with a chemical to form a polylactic acid (PLA) polymer.
3. PLA can be formed into cups, cutlery, clothing and many other products.
4. Products made from PLA can be composted after they are used. They break down into carbon dioxide and water in the soil, which can then be used to grow another corn plant.

Disclaimer: This publication is not intended to be a complete representation of all the products available or all the places where corn-based items can be purchased. If you sell a corn-based product and would like your information to be included in future publications from the Corn Marketing Program of Michigan, contact us at (517) 668-2676.

Why do we Make Products from Corn?

Corn is the largest crop grown in the United States, reaching record level production in recent years. In 2014, U.S. corn farmers harvested 14.2 billion bushels. As a result of increased production, 1.9 billion bushels were left over without an immediate use. In order to utilize this ever increasing crop a great deal of research has been done to develop new corn-based products.

Corn-based products offer many advantages, including: being made from a renewable resource, reducing our environmental impact and decreasing our dependence on foreign oil. The products listed in this guide are some of the newer corn-based products on the market. Some of the products listed are made directly from corn, while others are made from PLA. For a more detailed listing of manufacturers and suppliers, visit www.micorn.org.

Foodservice Products

Corn has long been a table-top favorite and staple for meals, but it can now play a very different role. With the development of corn-based plastics, those tables can now be set using corn-based foodservice products, including plates, cups, silverware, etc.



Biodegradable Plate, Cold Cup, Hot Cup, Storage Containers and Cutlery

Where to buy: Online at www.brenmarco.com, www.bioselect.com, www.ecoproducts.com or www.f-k.com. Some products may also be purchased at Gordon Food Service.

Promotional Items

Many companies provide promotional items as a way to get their names in front of consumers. An easy way to "go green" is to use corn-based promotional items personalized with a name, logo and contact information. Many of these products are made from PLA, which is turned into plastic.

Where to buy: Check with your local promotional items specialist.



Ruler, Pen, Screwdriver, Key Chain and Coffee Mugs made from corn-based plastic



Giraffe Baby bowl, warming plate and wipes; Earth's Best diapers; and teether from Dandelion.

Baby Products

Being environmentally responsible can now begin at an early age with corn-based products that are made just for babies. Products include diapers, wipes, diaper liners, tableware products, rattles and teethers that are made with little ones in mind.

Where to buy: Online at www.gro-via.com, www.earthsbest.com, www.re-play.com or www.giraffebaby.com.



Packing Peanuts and Magic Nuudles

Packing Peanuts and Magic Nuudles

These products serve two purposes - helping ship items without damage and providing hours of enjoyment for children. These corn-based products are water soluble, so when you're finished using them, you can simply put them in the kitchen sink and dissolve them with water.

Where to buy: Packing peanuts can be purchased at www.uline.com, Office Depot or Staples. Magic Nuudles, also known as Enviro-Blox, are available at Hobby Lobby and other craft stores. They can also be purchased online from www.magicnuudles.com or www.amazon.com.

Flooring

With a move toward "green" buildings, the creation of corn-based flooring is very exciting. These products are better for the environment than traditional flooring options and help to reduce our reliance on foreign oil.

Where to buy: Online at www.corncarpet.com. Brands include Mohawk Flooring's SmartStrand carpet and Armstrong's BioBased tile.



Carpet from Mohawk and tile from Armstrong

Tradeshow and Trash Bags

Tradeshow attendees, homeowners, office supply managers and anyone interested in protecting our environment can now choose an environmentally-friendly option with corn-based plastic tradeshow and trash bags.

Where to buy: Tradeshow bags can be purchased online at www.roplast.com. Trash and pet waste bags can be bought online at www.ecoproducts.com and www.biobagusa.com as well as through most natural food stores.



Biodegradable Tradeshow, Trash and Shopping Bags

Golf Tees

Even on the golf course, consumers have the option of using "green" products. Golf enthusiasts can use corn-based golf tees. These products biodegrade in less than 60 days in the right conditions, helping to slow landfill growth. These tees also minimize damage to mowing equipment by using softer materials with less of an impact.

Where to buy: Online at www.ecogolf.com or through your promotional products specialist.



Golf Tees from Eco Golf

Food and Beverage Items

There are more than 600 traditional products containing corn in most grocery stores. Some new items include AlsoSalt, a sodium-free, salt-substitute; and specialty liquors.

Where to buy: AlsoSalt is available at BetterHealth stores or online at www.alsosalt.com. Valentine Vodka and other corn-based liquor is available at many restaurants and liquor stores.



Soda Pop, Valentine Vodka, AlsoSalt and Corn Oil



A flex-fuel pump providing numerous ethanol fuel options

Ethanol

Ethanol is a clean burning, high octane, renewable fuel that can be used in all gasoline vehicles while helping to reduce our dependence on foreign oil and save consumers money at the pump. Currently, there are five ethanol production facilities in Michigan.

Where to buy: Visit www.ethanolretailer.com to find a flex-fuel station near you. In addition, more than 95% of Michigan's gasoline contains at least 10% ethanol.



Cold Medicine, Anti-Frizz Cream, Breath Freshener and Bath Salts

Cosmetics and Personal Care

Most cosmetic and personal care items contain some form of corn, whether it be alcohol, corn starch, citric acid or plain corn. Check out your personal care items and cosmetics at home, and glance at the labels of these items the next time you're looking to make a purchase.

Where to buy: Any store that sells cosmetics and personal care items.

Cleaning Supplies

With cleaning products made from corn, consumers can now clean their kitchens, bathrooms, offices, etc. with green products.

Where to buy: Online at www.ecos.com or www.spartanchemical.com. Green Works brands can be purchased at most supermarkets and BioRenewables Cleaners can be purchased through Spartan Chemical distributors.



Green Works Cleaner, Kernel Clean and BioRenewables Glass Cleaner

Frequently Asked Questions

Are corn-based products affordable?

In the past, corn-based products tended to be more expensive than traditional petroleum-based products. However, as the price of petroleum rises and more research is being conducted, that gap in price continues to narrow. New markets and uses for these products are continually being developed because consumer demand is increasing. As demand increases and products become more widely available to the consumer, the price of those items should be very comparable to traditional petroleum-based products.

Does PLA take away from the food supply?

No, PLA is made from dextrose which comes from No. 2 yellow dent field corn, not sweet corn. When at full capacity, Cargill's NatureWorks, LLC plant (the only PLA plant in the United States) will use less than one half of one percent of the available U.S. corn crop.

Does PLA offer better disposal options than traditional petroleum-based plastics?

Yes, PLA has the flexibility to be disposed of in several ways. PLA has been successfully composted in commercial composting facilities. It also shows favorable properties where incineration is the preferred waste disposal system and offers the potential for chemical recycling.



After 40 days



Before Composting

Is PLA edible?

The most common applications of PLA are cups, cutlery and containers. PLA is approved for food contact and is well-suited for a variety of packaging applications. However, it is not recommended for human consumption. PLA, as with any plastic, would be a foreign body if accidentally ingested. PLA has undergone extensive Food and Drug Administration (FDA) protocols to be approved as a food packaging material.

Does PLA manufacturing use more energy than the manufacturing of other traditional petroleum-based plastics?

Peer-reviewed and published life-cycle analysis studies show that PLA requires fewer fossil resources and generates fewer greenhouse gases than traditional petroleum-based plastics. PLA uses 68 percent fewer fossil fuel resources than traditional plastics in its manufacturing and is the world's first greenhouse-gas-neutral polymer.

If I am allergic to corn, will PLA be a problem?

Although PLA is derived from corn, the actual fiber is synthetic with the easy care and hypoallergenic properties of man-made fibers, so those with food allergies can rest easy.



Corn Marketing Program of Michigan
13750 S. Sedona Parkway, Suite 5
Lansing, MI 48906
1-888-323-6601
(517) 668-CORN (2676)
www.micorn.org