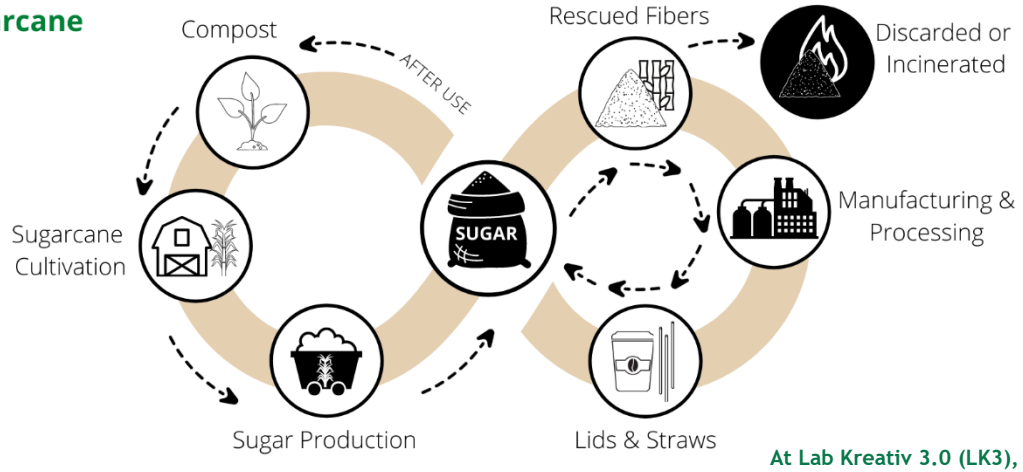
# CERTIFIED BIODEGRADABLE STRAWS AND CUTLERY

## Upcycle of Sugarcane




**At Lab Kreativ 3.0 (LK3), we push for higher sustainable goals**

thesugarcanestraw.com

# WHAT IS HOME COMPOSTABLE? (V2)

- Many products on the market are mislabeled as biodegradable.
- During our earlier years we have integrated our products with some PLA which is deemed as V1.
- Our latest generation of products (V2) are PLA-free meaning it can be used in markets where they currently penalize PLA usage in cities such as San Francisco, California or Malibu, California. BPI certification July 2022!
- The binder is of a food grade earthy mineral and organic acids which replaces the alternative PLA.
- This in turn means the product is less shiny (more matte) but still durable to perform its function.
- Home Compostable means it no longer needs an industrial grade composting facility for the product to biodegrade. Meaning special conditions of humidity, heat, and pressure are no longer required for our products to breakdown. They can literally break down in your backyard soil!

**>90%**
**Quick Degradation**
in 360 days under ambient environment

**100%**
**PLA-FREE Approved**
Plastic-free test
PLA-free test

**>90%**
**Heat Resistant**
May be used for hot drinks
food 100% food safety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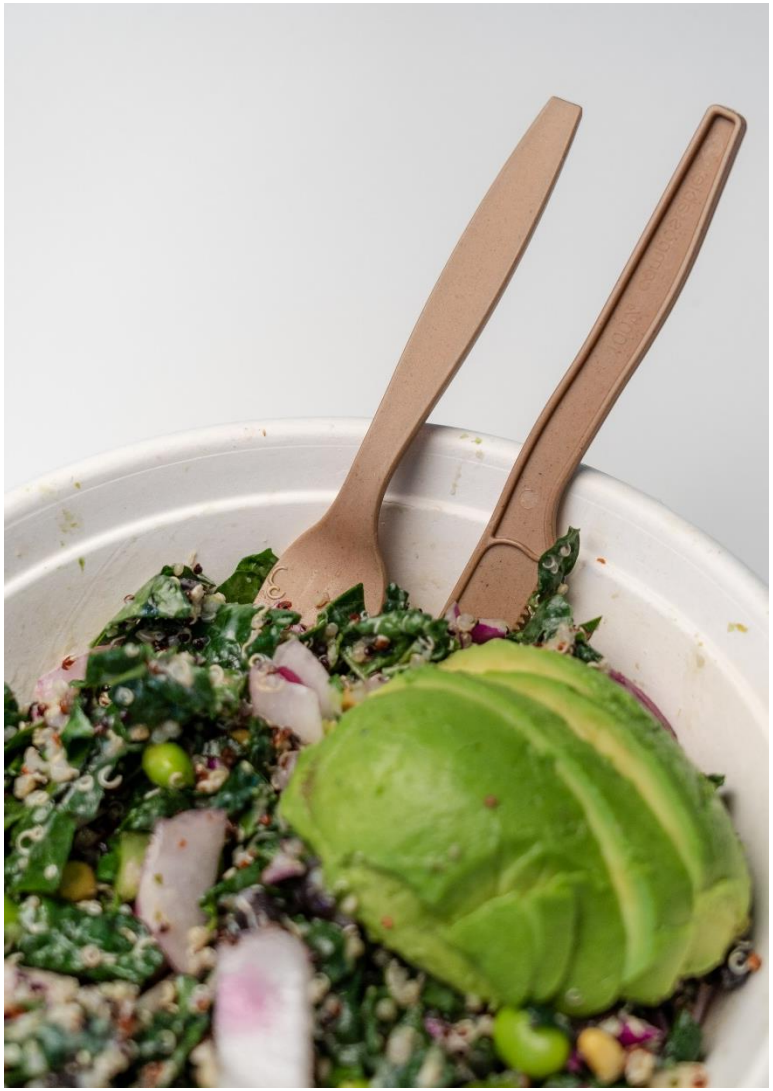
# WHAT IS HOME COMPOSTABLE?

**V2 BPI Certification July, 2022**

| | Ver.1 Material | Ver.2 Material |
|---|---|---|
| 1. Launched Year | 2018 | 2021 |
| 2. Material | Plant Fiber + PLA | Plant Fiber + Organic Acid |
| 3. Heat Resistance | 50-60°C | 80-100°C |
| 4. Composting Condition | Industrial facility | Home environment |
| 5. Criteria | ASTM6400 / EN13234 | ASTM6400 / EN13234<br>ISO16929<br>ISO20200<br>ASTM6866 |
| 6. Food Safety Cert. | √ | √ |
| 7. Biodgradability Cert. | √ | √ |
| 8. Product Shelf Life | 24 months* | 24 months* |

* If stored properly in cool and dark environment away from direct sunlight



# 72.6% DEGRADATION WITHIN 12 WEEKS

| | Week 1 | Week 4 | Week 6 | Week 10 | Week 12 |
|---|---|---|---|---|---|
| Before | 0.94g | 0.99g | 0.99g | 0.96g | 0.95g |
| After | 0.84g | 0.73g | 0.57g | 0.38g | 0.26g |
| Degradation Rate | 10.6% | 26.3% | 43.4% | 60.4% | 72.6% |

## 72.6%

Degradation Internal Test Validation Break down up to 72.6% within 12 weeks under ambient environment

*Placed in a glasshouse with abundant sunlight.
Ambient room temperature ranges from 25°C to 35°C.
Watered the potting soil once a week.

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# CERTIFICATIONS

### Biodegradable Products Institute (BPI)

Biodegradable Products Institute (BPI) is North America's leading certifier of compostable products and packaging. Their certification program ensures that products and packaging displaying the BPI logo have been independently tested and verified according to scientifically based standards. They promote best practices for the diversion and recovery of compostable materials through municipal and commercial composting.

- ✓ Our Sugarcane Straws have been certified and are registered with Biodegradable Products Institute (BPI), which has tested and certified against ASTM D6400 and ASTM D6868 for compostability in municipal and industrial composting facilities.
- ✓ V1 Certified Q2 2020!
- ✓ V2 Certified Q2 2022!

### Food and Drug Administration (FDA)

The Food and Drug Administration (FDA) is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices; and by ensuring the safety of our nation's food supply, cosmetics, and products that emit radiation.

- ✓ Our Sugarcane Straws have been certified and tested to pass U.S. Code of Federal Regulations (21CFR) Part 175.300 which ensures that our product is safe to use in food and beverages.
- ✓ Certified Q3 2018!

### Société Générale de Surveillance (SGS)

**SGS (Société Générale de Surveillance)** follows the EU Regulation EU No. 10-2011 Testing: Food contact test for consumer goods and retail.

- A test that products comply with the appropriate regulations for food contact materials.
- All materials that come into contact with food, from manufacturers' packaging to crockery and cutlery, glassware, ceramics, and storage containers should be tested to ensure they are safe for food contact.
- They must not transfer their constituents into the foodstuff in unacceptable quantities.
- Food contact testing protects the health of consumers.

- ✓ Our Sugarcane Straws have been certified and passed this EU standardized test which ensures that our product is safe to come into contact with food and beverages.
- ✓ Certified Q2 2018!


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# CERTIFICATIONS

### Cedar Grove Composting and Compost Manufacturing Alliance (CMA)

Cedar Grove Composting and Compost Manufacturing Alliance is a nationwide partnership of compost manufacturing facilities providing field disintegration testing for food service products. Our Sugarcane Straws are commercially accepted for CMA-I (covered in-vessel) which utilizes automated aeration and membrane laminate covers to consistently control temperature and oxygen levels in the piles. Active composting in this technology range from 45 to 60 days.

- ✓ Our Sugarcane Straws are certified and approved for CMA-I which ensures that our product is safe for industrial composting facilities. Accepted by Cedar Grove Facilities.
- ✓ Certified Q3 2018!

### DIN e. V., DIN CERTCO

DIN e. V., DIN CERTCO, Founded in 1972 by the German Institute for Standardization, has continuously worked to maintain its reputation in certification services around the globe. Thanks to the separation between DIN CERTCO's testing and assessment functions, and their accreditation to ISO/IEC 17065, their quality marks ensure competence, independence and impartiality.

- ✓ Our Sugarcane Straws have been certified and are registered with DIN CERTCO, who have tested and certified against ASTM D6400 and EU 13432 / EN 13432 standards for industrial/municipal compostability from biodegradable materials.
- ✓ Certified Q2 2019!

### Plastics Industry Development Center (PIDC)

Plastics Industry Development Center (PIDC) is an organization in Taiwan that services the plastic industry including testing procedures. The analysis was conducted using Fourier Transform infrared spectroscopy (FTIR Spectroscopy) with Differential Scanning Calorimetery (DSC) analysis which show our sugarcane straws do not contain the 5P:

- Polypropylene (PP)
- Polystyrene (PS)
- Polyethylene (PE)
- Polyvinyl chloride (PVC)
- Polyethylene terephthalate (PET)

- ✓ Our Sugarcane Straws have been certified and passed this PIDC test which ensures that our Sugarcane Straws do NOT contain the following plastics (5P).
- ✓ Certified Q3 2018!


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# SUGARCANE STRAWS

- ✓ Certified Compostable
- ✓ Safe, Non-Toxic
- ✓ Durable and Reusable
- ✓ Better Than Paper
- ✓ Eco-Friendly
- ✓ Biodegradable

Made in Taiwan
Patented in Taiwan

Standard width: 6mm

Large width: 8mm

Boba width: 12mm


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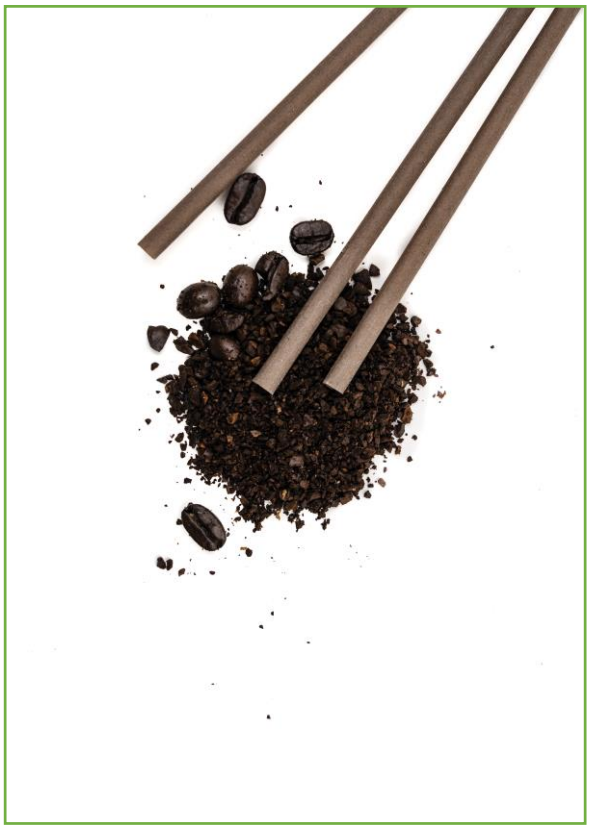
# COFFEE GROUND STRAWS

Understanding the science behind the sugarcane straws. We learned that the coffee ground waste had a similar consistency that could be turned into straws as well.



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# SUGARCANE STRAWS OPTIONS

Below are the current standard options available.

If you have a special requests please do not hesitate to ask us! We will try to accommodate as best we can.

| Variables | Options | Description | Notes / Examples |
|---|---|---|---|
| Diameter | 6 mm | Regular | Water<br>Sodas<br>Liquor<br>Liquids |
| | 8 mm | Medium | Blended beverages<br>Smoothies<br>Slushies<br>Shakes |
| | 12 mm | Large | Boba<br>Chunky pieces |
| | Custom | Varying | 5mm to 12mm<br>(Pictured: 6mm, 7mm, 8mm, 12mm) |
| Length | 150 mm<br>210 mm<br>250 mm<br>Custom | Short<br>Standard<br>Long<br>Varying | Bar / Cocktail<br>Most beverage containers<br>Tall beverage containers<br>Unwrapped: 140mm to 260mm<br>Wrapped 180mm to 250mm |
| Cut | Flat / Regular | | Flat cut on both ends |
| | Spear / Angle | | Flat cut one end and Spear cut on other<br>(For puncturing sealed lids ) |
| Wrapper | Unwrapped | | Can go into dispensers |
| | Wrapped | White paper | Individually white paper wrapped<br>(plain with no text, logos, or markings) |
| | Custom Print:<br>1 Color | Can private label<br>with small graphic<br>or logo | Send your desired artwork along with the<br>Pantone color code(s) or we can help you<br>design it! MOQ ≥ 300k |
| | Custom Print:<br>2 Color | Can private label<br>with small graphic<br>or logo | Send your desired artwork along with the<br>Pantone color code(s) or we can help you<br>design it! MOQ ≥ 300k |
| | Custom Print<br>Pantone Color<br>Options | Pantone 200C<br>Pantone 465C<br>Pantone 731C<br>Pantone 2768C<br>Pantone 3415C<br>Pantone 7443C | |

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# CUTLERY

2022 is an exciting year for our new product offerings.
We would like to introduce you to our cutlery offered in both sugarcane fiber and coffee grounds.

**Spoon** **Fork** **Knife** **Kit**

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# CONTACT

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Let us know if you have any questions or would like a quote!

Thanks!

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