

TwentyFifty[®] Edible Cutlery

The bio-based materials produced by Weirong New Materials Co., Ltd. are natural, organic products defined by being "**edible, fully degradable, and soil-nourishing.**"

Derived from agricultural by-products such as **broken rice, cassava starch, and plant fibers**, our production process generates no waste gas, wastewater, or solid waste.

After use, the products undergo **complete natural degradation**. The resulting by-products can even be used to improve soil quality and support the ecological restoration of saline-alkali land. This creates a full-cycle, industrial-agricultural circular economy, truly embodying the green development concept of "taking from nature and returning to nature."



100%
Plant-Based

100%
Compostable

ZERO
Additives & Plastics

About single-use

370 Million Tons of Plastic Pollution Annually

Global plastic consumption reaches 400 million tons per year, yet the effective recycling rate is only 7%. The remaining 93% (approximately 370 million tons/year) is dumped into oceans, landfills, or incinerated.

200–1,000 Years to Degrade

Plastic products take anywhere from 200 to 1,000 years to degrade. They pollute our oceans, land, and air, causing severe damage to the ecological environment.

Recycle rate only 7%

GAGR 5.16%

2023

2029

Microplastics Microplastics are ingested by wildlife and infiltrate the human body via the food chain, air pollution, and plastic products. They accumulate in our organs and bloodstream, posing severe risks to human health.

The 2050 Crisis Unless immediate action is taken against single-use plastics: **By 2050, the ocean will contain more plastic than fish by weight.**

Our name is TwentyFifty. Because we are here to change the forecast for 2050.

Designed to Disappear



Day1



Day14



While many common 'degradable' materials need half a year and substantial energy to degrade in industrial settings, this material **decomposes fully in just 14 days** in a home compost, much like a banana peel.

Superior to Paper Products: Our solution overcomes the critical flaws of paper cutlery. It solves issues such as poor water resistance, the tendency to become soggy, unpleasant chemical bleach odors, and poor mouthfeel, delivering a superior user experience.

Superior to Bio-based Competitors (PLA): We break the high barrier of "industrial composting" required by most bioplastics. Unlike PLA, which degrades poorly in natural environments, our product achieves 100% degradation in natural soil within just 14 days. This eliminates the need for heavy-asset recycling infrastructure, giving our product exceptional market scalability and cost competitiveness.



● The Lotus Fork

This patented design integrates lotus elements not just for beauty, but for structural mechanics. The geometry reinforces the fork, overcoming the inherent softness of bio-materials and delivering performance strong enough for steak.



● Safe-Edge Knife

Our knife features a safe-edge design (maintaining a calculated rounded thickness). It is robust enough to cut steak yet eliminates the jagged, razor-sharp edges found in traditional plastic cutlery, preventing accidental cuts.

Details with Heart

Compared to other edible cutlery on the market, we achieve a flawlessly smooth surface through innovative **hot melt injection technology** and ultra-fine ingredient grinding, combined with our patented molding process. Furthermore, our formula innovation ensures exceptional durability: the cutlery **remains firm for 2 hours in 55°C hot soup**

Leveraging the properties of natural ingredients, the product is **completely odorless**, showing special care for scent-sensitive groups. Furthermore, prioritizing physical safety for children and the elderly, the design specifically incorporates **soft, rounded edges** to prevent any accidental cuts.

Reduce waste across the lifecycle

- **Manufacturing:** Streamlined Process / Zero Emission / Scrap Reuse
- **Usage:** Food-grade Safety, Odorless, No Secondary Pollution
- **Destiny:** Degrades at Room Temp — Returns to Nature

Full-Cycle Value & The Material Revolution

Crafted from agricultural by-products like broken rice, our production is energy-efficient and zero-emission. Safe and odorless in use, the cutlery degrades naturally at ambient temperature or can be repurposed as animal feed and fertilizer.

By generating value at every stage, we believe even a simple spoon can ignite a material revolution against single-use plastics.

The Seawater Rice Initiative

We utilize Seawater Rice, a crop that heals saline soil but lacks commercial value due to poor edible texture. TwentyFifty bridges this gap. We empower farmers to turn this ecological challenge into a sustainable resource, directly supporting the restoration of saline-alkali lands.



Our Story

In 2017, Kong Zhicong graduated with a degree in Biomedical Engineering from UC San Diego. Under the bright California sun, he noticed plastic spoons and fast-food wrappers drifting in the wind — seemingly weightless, yet forming a heavy image in his mind. Not far away, landfills continued to expand like artificial mountains built from takeaway cups, straws, and disposable forks. They wouldn't disappear, and couldn't even be safely burned. Standing at the edge of that waste, he decided to act.

Starting in a rented commercial kitchen, he experimented tirelessly — using 3D printers and modified ovens in his backyard. Later, he brought the project back to China, developing more advanced and mature materials.

we aims to replace unnecessary plastics with a new philosophy of materials.
We envision a new material system without waste: one that consumes less, gives more, and serves other forms of life.

What we strive to create are materials welcomed by nature — a philosophy of matter that carries the future.

