

# Changing the future with drying technology

The challenge of reducing food loss  
through upcycling



<https://www.actdesign.net/>



# COMPANY PROFILE

Company name	:Act Design Co., Ltd.
Representative	: Norihisa Masaki
location	: Society will not change unless someone does it.
Founding philosophy	: Space design/Upcycled food processing/Regional collaboration project
Business area	: <a href="https://actdesign.net">https://actdesign.net</a>
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# SOCIAL ISSUES AND BACKGROUND

- 01 Food loss in Japan: approximately 6 million tons/year
- 02 Most of the vegetables and fruits that are thrown away “Non-standard” or “surplus”
- 03 Voices of local farmers  
It's a waste/I want to make the most of it

**Act Design's mission**

“  
**be thrown  
away value  
rediscover**  
”



# BUSINESS CONCEPT

In Japan, 5.7 million tons of food is lost annually, and in addition to this, approximately 2 million tons of agricultural products and 1 million tons of fish are discarded at farms.

Our company has developed an "upcycle" technology that sterilizes and powderizes these unused resources through drying treatment, allowing them to be reused as food. We provide innovative solutions to food residue processing.

## Upcycling & drying technology

Drying and processing agricultural products scheduled for disposal to create new product value

## Utilization of local resources

Sterilize and powderize unused resources through drying, making them reusable as food.

## Reducing environmental impact

Drying technology that can handle a variety of materials such as vegetables, sludge, livestock manure, etc.

## Contribution to food education

Rather than throwing away food residue, it is a social theme that all producers, processors, and consumers should be aware of and work towards, regenerating it into edible food.

# Product/service lineup



## dried strawberries

Brightly colored and fragrant  
Confectionery/Granola



## vegetable powder

Condensed nutritional value  
Soup/seasonings



## sweet potato chips

Utilize items scheduled for disposal  
Snacks/school lunch

# Technology Strengths



## Radiant heat drying "DRY-ACT"

Our proprietary "DRY-ACT high-speed drying system" is the core of the technology that enables the reuse of food residue.

### Product name ACT-TABLE

- 1 Automatic operation using electricity
- 2 Maximum processing volume 0.3m<sup>3</sup>

### Specifications/Ratings

- 1 Total weight 7.5kg
- 2 Dimensions External dimensions W570 x D380 x H420 Inner dimensions (w)550 x D360 x 400
- 3 Capacity Total capacity 9 liters
- 4 Materials: Steel, stainless steel, urethane foam, polyester
- 5 Power supply single phase 100V
- 6 6 ceramic plates
- 7 6 small blower fans ORIX ACFAN MU825S-13 AC100V
- 8 Thermometer/Hygrometer ESCO Temperature/Hygrometer EA742G-13



### Harnessing natural

Using ACT-Cera, a radiant heat catalyst containing a special radioactive ore, we have achieved unprecedentedly powerful radiant heat.



### Enables ultra-high speed dehydration

The far infrared rays (weak vibrations) emitted by ACT-Cera turn the moisture (free water and bound water) in vegetables and fruits into fine particles, dramatically improving drying speed.



### High energy efficiency

Negatively charged air and water vapor efficiently transfer heat to the material, achieving both quality and speed compared to conventional drying in a positively charged environment.

# An example of being reborn from disposal



sweet potato skin



strawberry leaves to be discarded



Discarded corn skin and trunk



Roughness of discarded fish



Discarded rice husks



anthocyanin  
3 times more blueberries



Agrimoniin  
21 times more than green tea catechins



VitaminB group



Furikake



Non-crystalline silica



# Past Achievements

## Future Prospects

- Development of own brand products (dried food series)
- Strengthening collaboration with local governments and companies
- Expanding into overseas markets (Asia)
- Drying technology licensing/OEM development



Collaborative project with local farmers  
(use of substandard vegetables)



Collaboration with educational institutions  
(food education events)



Product sales at exhibitions and marches



Media coverage/cooperation with local governments



# DRY-ACT Cost Table

## Manufacturing Cost Table (Unit: JPY)

Item	TABLE-ACT	DRY-ACTI	DRY-ACTII
Body / Sheet Metal / Frame	15,000	900,00	1,700,000
Drum / Drying Room / Insulation	7,000	80,000	150,000
Motor / Fan	5,000	60,000	278,000
Heater	6,000	50,000	110,000
Control Panel / Sensors	12,000	360,000	600,000
Wiring / Harness / Small Components	4,000	36,000	120,000
Exterior Panels	3,000	30,000	60,000
<b>Total Direct Materials Cost</b>	<b>52,000</b>	<b>1,516,000</b>	<b>3,018,000</b>
<b>Direct Labor Cost</b>			
Labor Cost (per hour)	2,000	2,000	2,000
Working Hours	8h	24h	36h
Labor Expenses	16,000	48,000	72,000
Manufacturing Overhead (Light, heat, etc.)	4,000	6,000	8,000
<b>Manufacturing Cost</b>	<b>72,000</b>	<b>1,570,000</b>	<b>3,098,000</b>

## Sales Profit Table (Unit: JPY)

Item	TABLE-ACT	DRY-ACTI	DRY-ACTII
Sales Price (per unit)	300,000	3,000,000	6,000,000
Cost	72,000	1,570,000	3,098,000
<b>Gross Profit</b>	<b>228,000</b>	<b>1,430,000</b>	<b>2,902,000</b>

## Revenue Projection

### 2025

Assuming a total market size of CNY 5.5 billion, a 5% market share would result in CNY 275 million, equivalent to approximately JPY 5.77 billion (calculated at JPY 21 per CNY).

### 2026

With the market projected to reach CNY 12.0 billion (annual growth rate: +17%), a 5% market share would correspond to CNY 600 million, equivalent to approximately JPY 12.6 billion.