

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 : <https://actdesign.net>

URL : info@actdesign.asia

E-mail



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**

”



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.

BUSINESS CONCEPT

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 0.3m³

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.

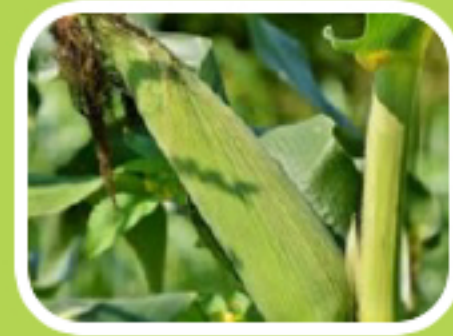
An example of being reborn from disposal



sweet potato skin



strawberry
leaves to be discarded



Discarded corn skin
and trunk



Roughness of
discarded fish



Discarded rice
husks



Radiant head dryer "DRY-ACT"



anthocyanin
3 times more blueberries



Agrimoniin
21 times more than
green tea catechins



VitaminB group



Furikake



Non-crystalline
silica



Past Achievements



Collaborative project with local farmers
(use of substandard vegetables)



Collaboration with educational institutions
(food education events)



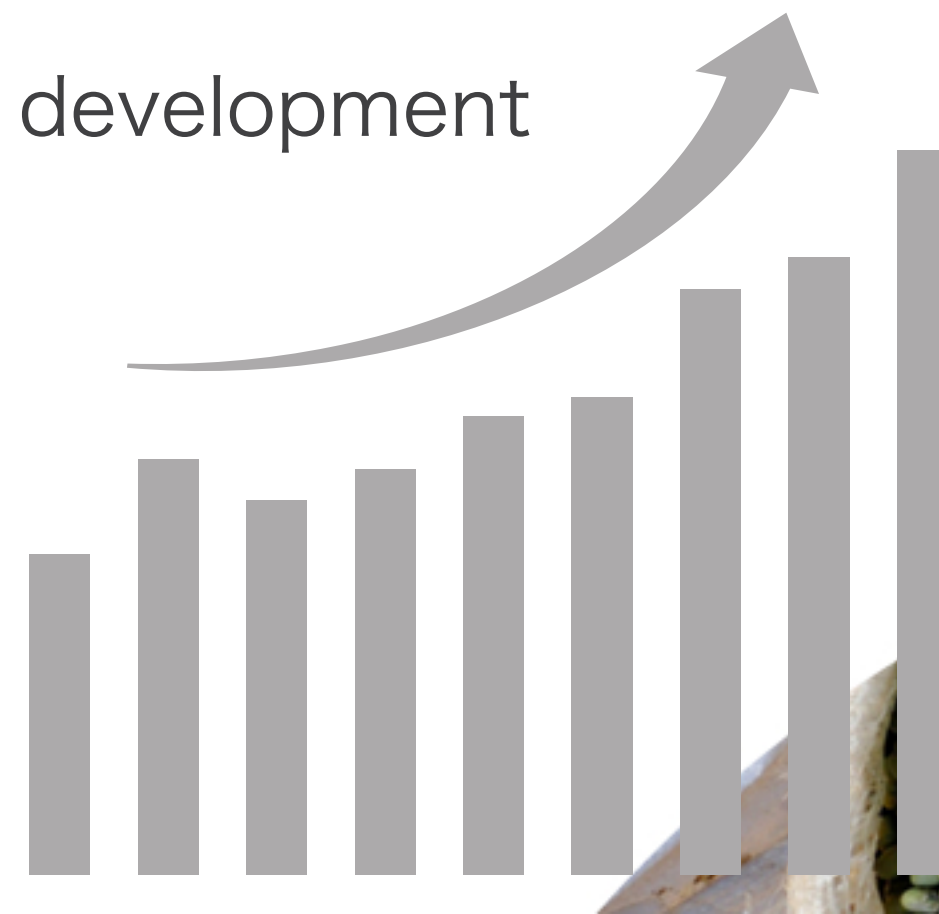
Product sales at exhibitions and marches



Media coverage/cooperation with local
governments

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



DRY-ACT Cost Table

Manufacturing Cost Table (Unit: JPY)

Item	TABLE-ACT	DRY-ACT I	DRY-ACT II
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
Total Direct Materials Cost	52,000	1,516,000	3,018,000
Direct Labor Cost			
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
Manufacturing Cost	72,000	1,570,000	3,098,000

Sales Profit Table (Unit: JPY)

Item	TABLE-ACT	DRY-ACT I	DRY-ACT II
Sales Price (per unit)	300,000	3,000,000	6,000,000
Cost	72,000	1,570,000	3,098,000
Gross Profit	228,000	1,430,000	2,902,000

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.