



GeneFerm Biotechnology Co., Ltd.(1796)

Investor Conference

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In these presentations and discussions, here are certain forward looking statements regarding the results of operation, financial condition and current expectation about future events. As forward-looking statements relate to events and depend on circumstances in the future, they involve risk and uncertainty.

We do not undertake any obligation to publicly revise or update any forward looking statements for availability of new information, future events or otherwise. Real result probably differ substantially from those expected in these forward-looking statements.

A blue molecular structure graphic with spheres and connecting lines, positioned on the left side of the slide.

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Company Profile



Business Scope



Financial Overview



Trend and Prospect in
Microbial Fermentation

- Company History
- Core Technology
- Production Process
- Outstanding Performance

Company Profile

Date of establishment: July 17, 1999

Chairman of the board: Grace Chang

Production base

Nanke Factory: No.3, Dali 2nd Rd.,
Shanhua Dist., Tainan City, Taiwan

Xinying Factory: No.33, Xingong
Rd., Xinying District, Tainan City,
Taiwan

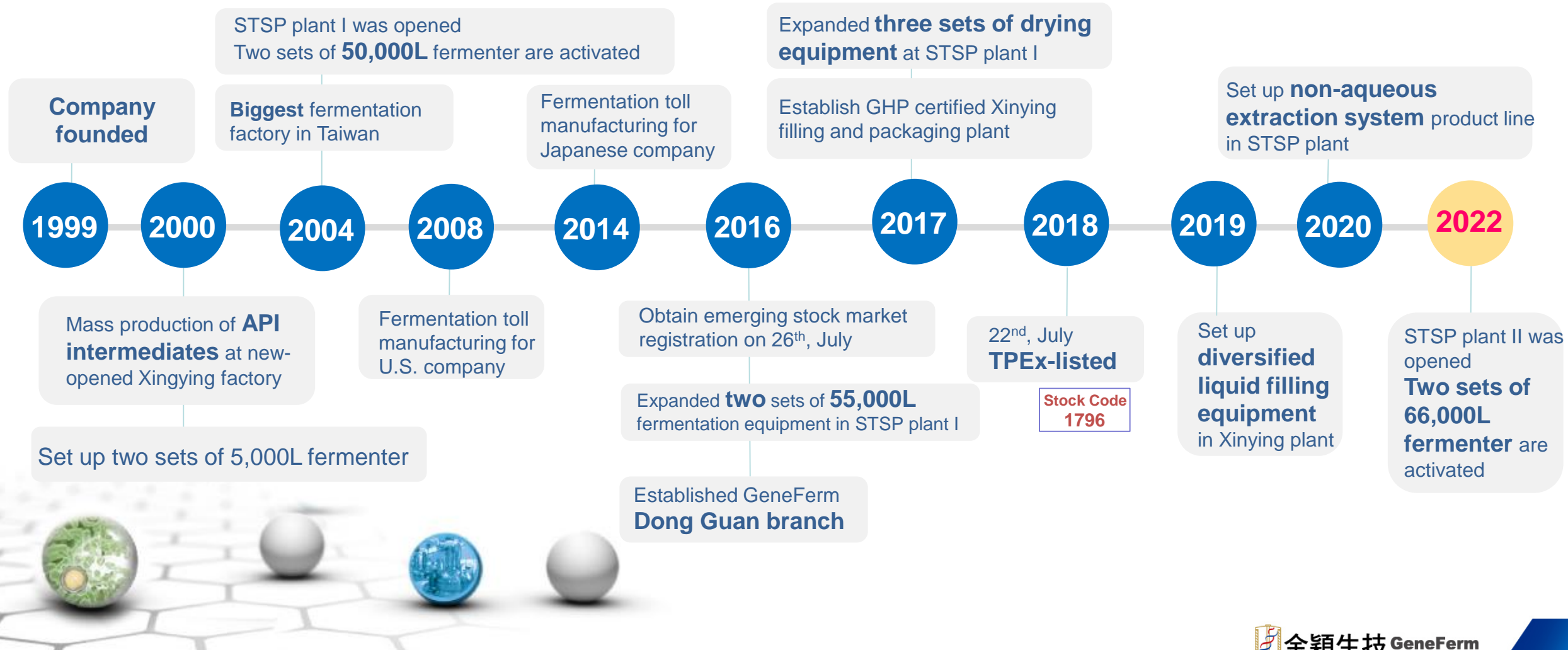
Share capital: 414,597,930 NTD

Number of employees: 268

Main business

Application of biotechnology in
food, branded products and
professional fermentation
integration services (R&D,
production and sales)

Company History



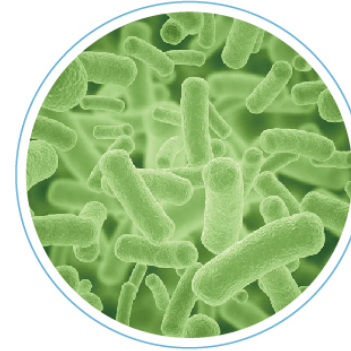
Core Technology

Fermentation and Extraction Superiority



R & D Research

- Microbial database preservation
- Functional product design
- Natural substance exploration



Growth Optimization

- Screening of optimal strains
- Media Composition
- Optimizing Growth Parameters



Production

- 50-ton scale fermentation mass production
- 50-ton scale extraction and purification mass production
- Quality monitoring system

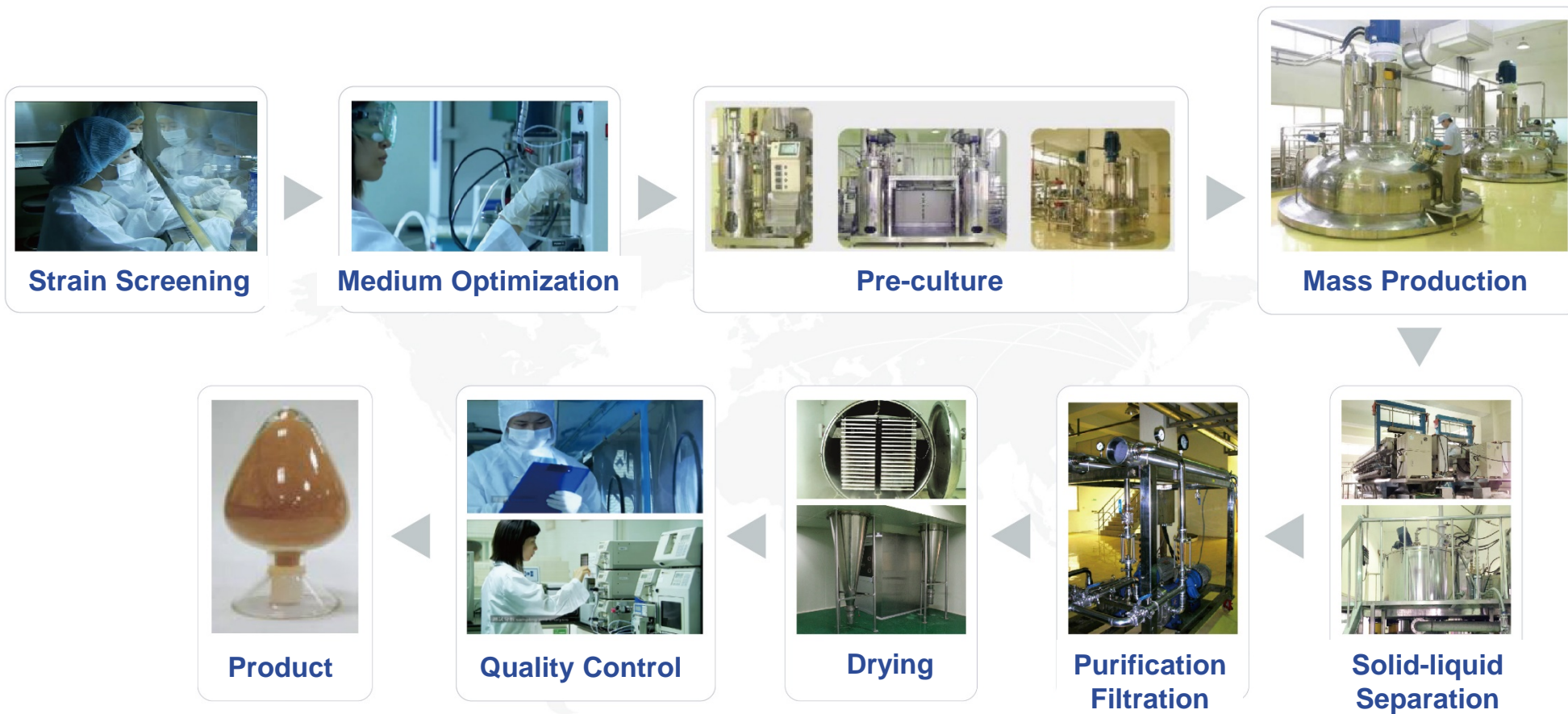


Process development

- Culture process conversion
- Fermentation process scale-up design
- Extraction and purification process design

Production Process

Standardized process, high-quality products



STSP Plant I - Biomass fermentation

Mass production equipment and international quality certification

Fermentation Equipment	Specification
Liquid-State Fermenter	50-55,000 L
Solid-State Fermenter	1,500 L
Medium Preparation Tank	15,000 L
Substrate Feeding Tank	2,000-16,000 L
Acid-Base/ Anti-Foaming Tank	500 L

Extraction and concentration equipment	Quantity
Extractor	50,000 L
Extraction condenser tank	200-15,000 L
Continuous Vacuum Evaporator (1,000 L / hr)	1

Solid-liquid separation equipment	
Continuous Disk Stack Centrifuge	Auto-Cleaning Membrane Filter Press (Filtration area 36 m ² /100 m ²)
Vertical Scraper Peel Discharge Continuous Centrifuge	Ceramic Membrane Filtration Set (Filtration area 18 m ²)



STSP Plant I - Biomass fermentation

Mass production equipment and international quality certification

Purification equipment

High-Pressure Homogenizer
(100Mpa , 2T/hr)

Nano-filtration Set (spiral membrane)
(Filtration area 160 m²)

Ultra-filtration Set (spiral membrane)
(Filtration area 65 m² / 98 m² / 160 m²)

Low-Pressure Column Chromatography
(300 L / 600 L / 1200 L / 1800 L)

Drying equipment

Medium Freeze Dryer (450L / batch)

Large-scale Freeze Dryer (Maximum 2,000Kg / batch)

Continuous Vacuum Belt Dryer (evaporation capacity 50Kg / hr)

Spray Dryer (100 L / hr)

Fluid Bed Dryer & Granulator (200L)

Double Cone Rotated Vacuum Dryer (1,000L)

Hot Air Dryer



ISO 22000



HACCP



ISO 9001



USA FDA



HALAL



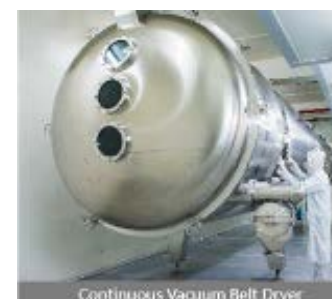
High Pressure Homogenizer



Ceramic Membrane Filtration



Low Pressure Column Chromatography



Continuous Vacuum Belt Dryer



Spray Dryer

STSP Plant II -Precision fermentation

Mass production equipment and international quality certification

Fermentation equipment	Specification
Liquid-State Fermenter	80-66,000 L
Medium Preparation Tank	16,000 L
Substrate Feeding Tank	1,500-18,000 L

Extraction and concentration equipment	Specification
Extractor	66,000 L
Extraction condenser tank	200-15,000 L

Solid-liquid separation equipment	
Continuous Disk Stack Centrifuge	Auto-Cleaning Membrane Filter Press (Filtration area 36 m ² /100 m ²)

Purification equipment	
Ultra-filtration Set (spiral membrane) (Filtration area 160 m ²)	Low-Pressure Column Chromatography (600 L)

Drying equipment	
Freeze Dryer (2,000Kg / batch)	Spray Dryer (300L / hr)



FSSC 22000

in
application



KOSHER

Xinying Plant - Filling & Packing Factory

Our filling and packing facilities are complied with GMP standards. Together with independent central air-conditioning system, we provide one-stop services for the filling and packaging of capsule, powder and liquid.



Xinying Plant - Filling & Packing Factory

Quality Certification - Licenses & Certificates

High food safety management standards



ISO 22000



HACCP



ISO 9001



USA FDA



HALAL



TFDA
Food second tier
quality control
verification



Health
supplement
GMP

Patents

Innovative research and development, world-class patents guarantee



International Innovation & Invention Award

Continuous innovation and creation of new topics in the market

NattoMena®
(Vitamin K₂)



The 9th IIIC

Gold Medal

LABCOT®
Probiotics



The 5th
WiC Korea

Gold Medal

LaLaBling®
Enzyme



The 10th IIIC

Gold Medal

dual-effect
polysaccharides



The 34th Tokyo
Invention Exhibition

Gold Medal

37Labtico®
Postbiotics



The 6th
WiC Korea

Gold Medal

GSH12X™
Dual-Source Peptides



The 34th Tokyo
Invention Exhibition

Gold Medal

37Labtico®
Postbiotics



The 33th Tokyo
Invention Exhibition

Silver Medal

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Company Profile

Business Scope

Financial Overview

Trend and Prospect in
Microbial Fermentation

- Fermentation & Extraction
Toll Manufacturing
- Finished Product OEM ODM
- Raw Materials
- Own Brand Merchandise



Professional
Fermentation
CDMO

Health Supplement
Raw Material

GeneFerm
Own Brand
Merchandise

OEM/ODM
Functional Health
Supplement Design
and Manufacturing

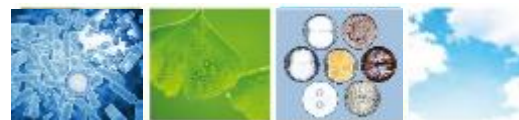
Health Supplement raw material

Edible and Medicinal Mushrooms

- *Antrodia cinnamomea* mycelia
- *Phellinus linteus* mycelia
- **Cordyceps**
- *Paecilomyces hepiali* mycelia
- *Hirsutella sinensis* mycelia
- **Ganoderma lucidum** mycelia
- **Armillaria mellea** mycelia
- **Polysaccharides** (from complex mushrooms)
- **Polysaccharides** (from *Trametes versicolor* mycelia)
- *Agaricus blazei Murill* mycelia

Microbial fermentation Products

- Nattokinase
- Red yeast rice (Anka)
- NattoMena® (Vitamin K₂)
- Fruits & Vegetables Fermented Enzyme
- 37Labtico® Postbiotics
- Lumino® Whitening Peptide
- β -glucan powder (*Aureobasidium pullulans*)



Health Supplement raw material

Patented LABCOT® Probiotics

- *Bifidobacterium breve*
- *Bifidobacterium bifidum*
- *Bifidobacterium lactis*
- *Bifidobacterium longum*
- *Lactobacillus casei*
- *Lactobacillus acidophilus*
- *Lactobacillus paracasei*
- *Lactobacillus plantarum*
- *Lactobacillus reuteri*
- *Lactobacillus rhamnosus*
- *Streptococcus thermophiles*
- *Bacillus coagulan*

Extract Products

- GSH12X™ Dual-Source Peptides
- ***Antrodia cinnamomea*** mycelia liquid extract
- ***Ganoderma lucidum*** mycelia extract
- ***Hericium erinaceus*** Fruiting Body extract
- ***Grifola frondosa*** Fruiting Body extract



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Company Profile



Business Scope



Financial Overview



Trend and Prospect in
Microbial Fermentation

- 2022/2021 Third Quarter Comparison
- Comparison of The First Three Quarters of 2022/2021
- Revenue in The Past Five Years

Financial Overview

2022/2021 Third Quarter Comparison

Project / Year	Q3_2022		Q3_2021		YoY
Revenue	166,143	100%	133,910	100%	24%
Operating profit	57,955	35%	53,220	40%	9%
Operating expenses	(29,679)	-18%	(28,301)	-21%	5%
Operating margin	28,276	17%	24,919	19%	13%
Net non-operating income and expenditure	4,112	2%	(1,882)	-2%	318%
Pre-Tax Income	32,388	19%	23,037	17%	41%
Income tax expense	(6,914)	-4%	(4,821)	-3%	43%
Net income for current period	25,474	15%	18,216	14%	40%
Earnings per share	0.61		0.45		36%

Financial Overview

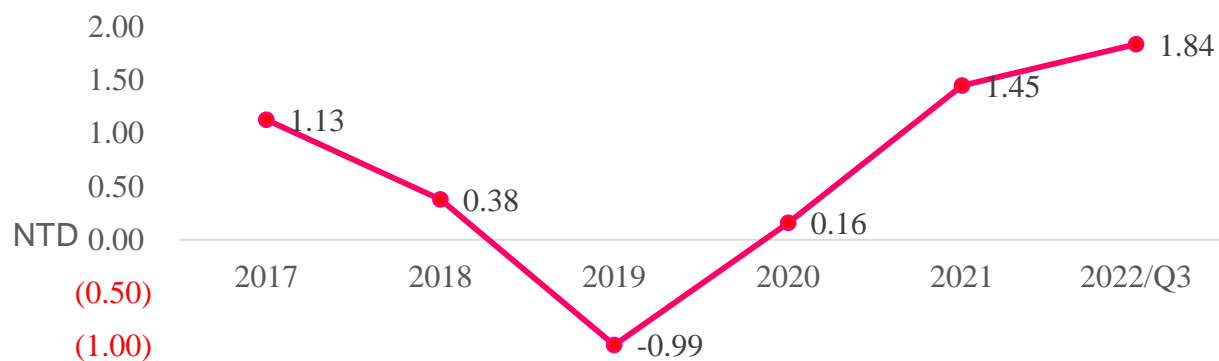
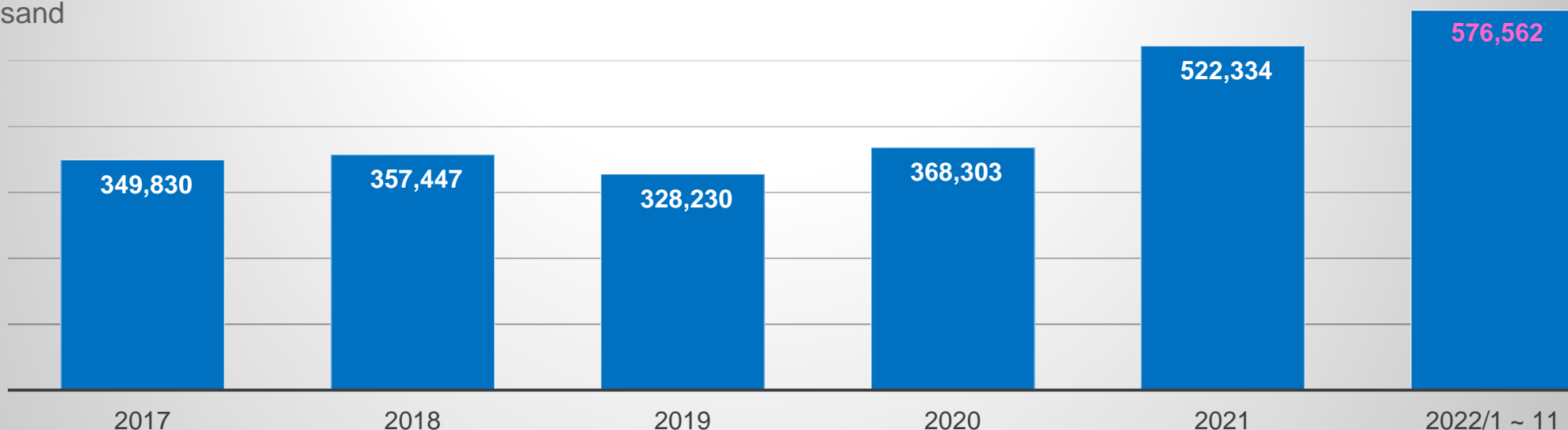
Comparison of the first three quarters of 2022/2021

Project / Year	Q1~Q3_2022		Q1~Q3_2021		YoY
Revenue	463,773	100%	368,727	100%	26%
Operating profit	171,296	37%	140,779	38%	22%
Operating expenses	(88,480)	-19%	(82,718)	-22%	7%
Operating margin	82,816	18%	58,061	16%	43%
Net non-operating income and expenditure	9,415	2%	(6,889)	-2%	237%
Pre-Tax Income	92,231	20%	51,172	14%	80%
Income tax expense	(16,236)	-3%	(11,218)	-3%	45%
Net income for current period	75,995	17%	39,954	11%	90%
Earnings per share	1.84		1.02		80%

Financial Overview

Revenue in the past five years, EPS and dividend policy

Thousand
NTD



Year	2017	2018	2019	2020	2021	2022
Cash Dividend (NTD)	2.1	1.0	0.49883361	-	0.08306125	1.0



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Company Profile



Business Scope

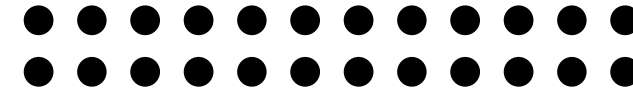
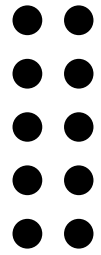


Financial Overview



Trend and Prospect in
Microbial Fermentation

- Microbial Fermentation Introduction
- Global Precision Fermentation Market



Trend and Prospect in Microbial Fermentation

Microbial Fermentation - Infinite Possibilities

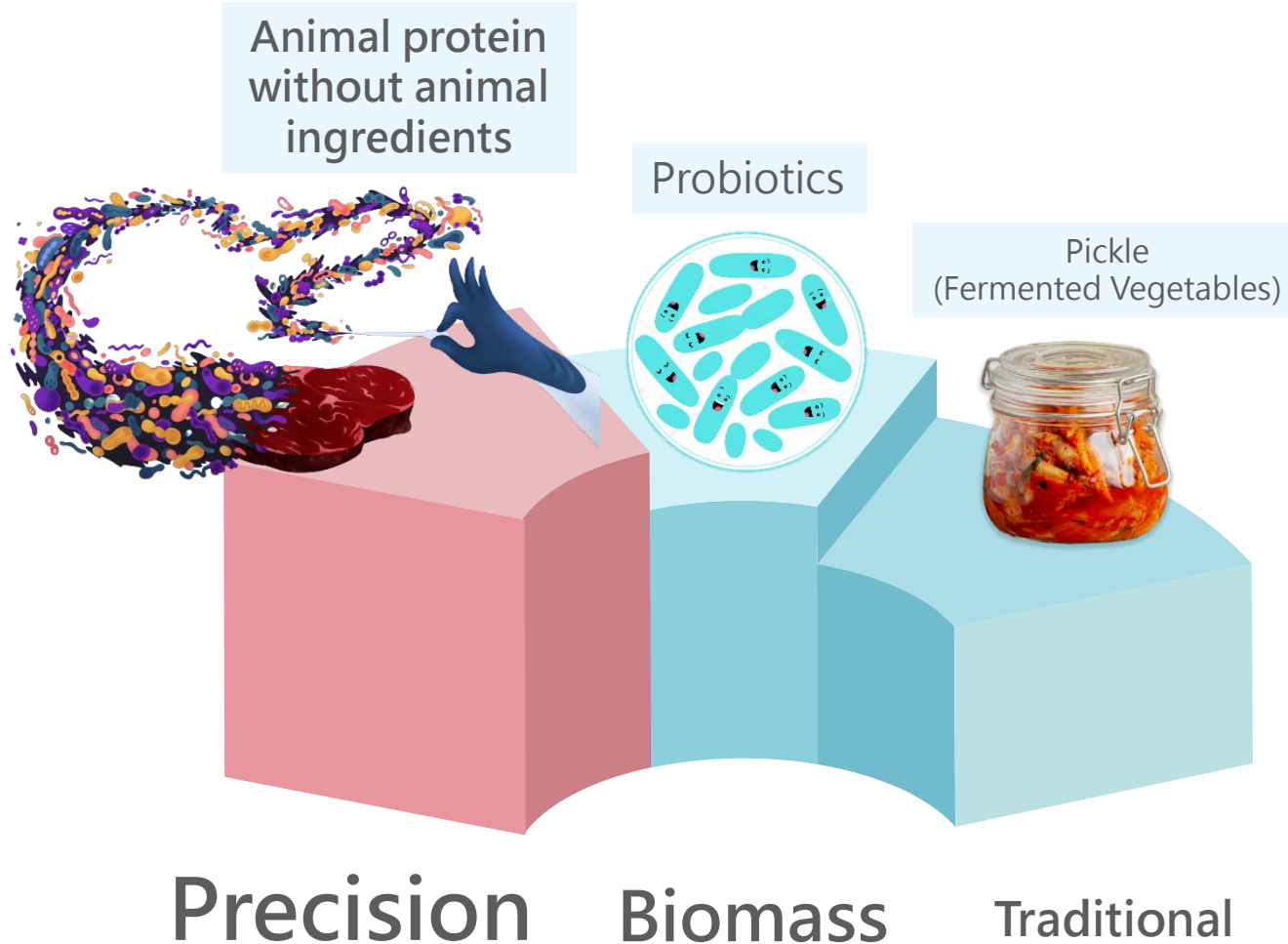


From traditional fermentation for food preservations to modern use of fermentation to produce alternative proteins.

*High efficiency
Low resources usage*

Reference source : GFI company database

Microbial Fermentation - Classification



- **Traditional**

Using microorganisms from natural sources to act on the substrate to impart unique flavor and nutritional properties to the product and to modify the texture.

- **Biomass**

Controlling the rapid growth of microorganisms to mass produce nutrients. At the end of fermentation, the microbial cells are broken to release nutrients such as polysaccharides, adenosine, SOD-like, etc. Example: probiotics, mycoproteins.

- **Precision**

Use microbial hosts as "cell factories" to produce specific functional components. Example: Perfect Day's artificial milk protein, enzymes, flavors, natural colors and fats.

Precision Fermentation – Products and Application Diversity



From food, infant nutrition, to functional ingredients (collagen)



Why Do We Need Fermentation?

The Food and Agriculture Organization of the United Nations released a research report stating that human beings are facing three crises: population explosion (food crisis), climate change, and resource depletion. In 2050, the world's population may increase by nearly 10 billion. The shortage of food production in the future is huge, and human beings must promote scientific and technological innovation in food to make up for the gap.



In 2020, the fermentation industry officially joined the alternative protein market through plant-based meat, fungal protein and cultivated meat.

Why Do We Need Fermentation?



Sustainable development

Pursue zero carbon emissions!

According to data provided by the United Nations Climate Change and FAO

- Livestock and related agriculture account for about 25% of total greenhouse gas emissions
Consuming 70% fresh water and 40% land
- Low feed conversion rate for meat > > Eating meat is not economical
- Overfishing: 90% of the world's marine fish stocks are now fully exploited



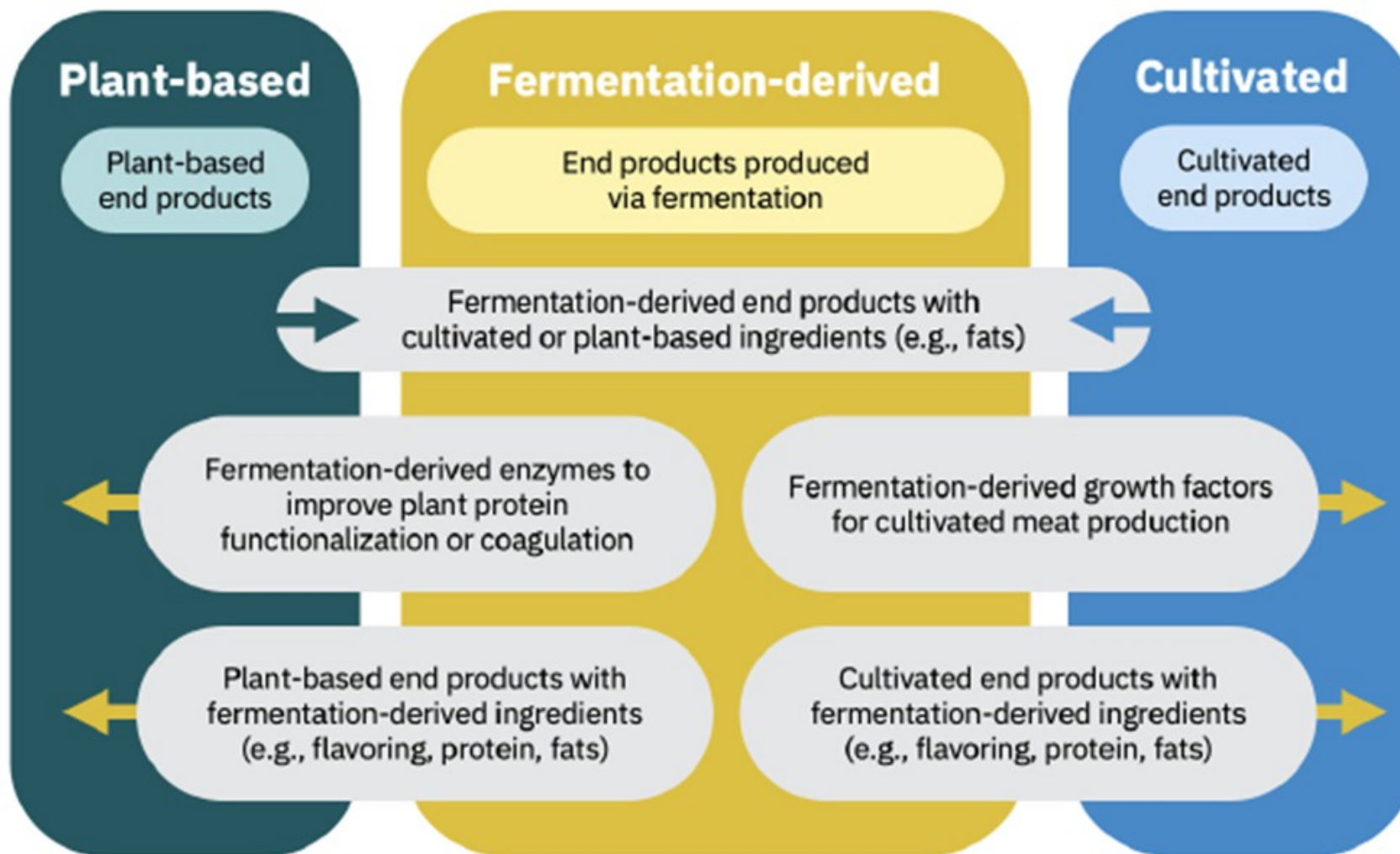
Vegetarianism

The Flexitarian Population Is Growing

- Not only for religious reasons
- Reducing consumption of animal products is also for the benefits of health

Reference source : GFI company database

Alternative proteins – The teamwork



Reference source: GFI company database

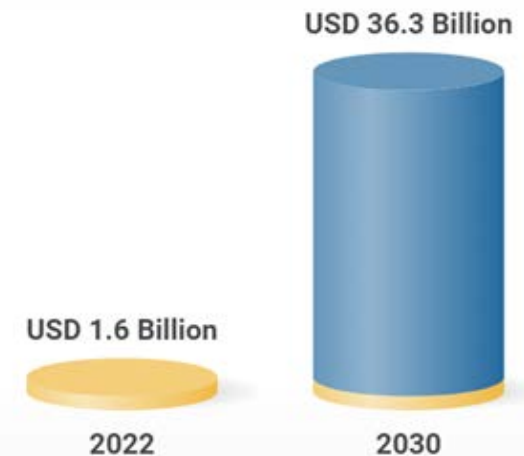
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Global Precision Fermentation Market

- The global precision fermentation market size is **expected to reach USD 11.8 billion by 2028**
Growing at a rate (CAGR) of **41.5%** — Global Information
- It is predicted that the global market value of precision fermentation market will reach **36.3 billion USD** in 2030
CAGR: 48.1% — Research and markets



Global Precision Fermentation Market
Market forecast to grow at a CAGR of 48.1%



Number of global fermentation companies

(precision and biomass fermentation)

Category	Biomass Fermentation	Precision Fermentation
Meat	30	8
Seafood	13	4
Egg	5	7
Dairy	10	32
Fat & Oils	1	4
Infant Nutrition	0	2
Pet Food	0	1
Ingredients & Inputs	39	14

Reference source : GFI company database



Perfect Day

milk from yeast

- Casein & whey protein produced by precision fermentation
- Antibiotic Free / Lactose Free / Cholesterol Free / Hormone Free
- GRAS Certified
- Already appeared in the United States and Hong Kong market



一品脱 USD \$20



It is predicted that the global market will be worth 550 million US dollars by 2027

Compound annual growth rate (CAGR): 22.7%

The Asia-Pacific has the largest demand among other region

Reference source : Markets and Markets

Human Milk Oligosaccharide (HMO)

Microbial Fermentation

- Promote infant's brain growth and development
- Build gut immunity
- Regulate the immune system

Q & A

