

New Mid-term Business Plan [Revised for FY2024-FY2026]

"Make investments in for further growth"



February 2024

OAT Agrio Co., Ltd.

◆ Corporate Profile



Company Name	OAT Agrio Co., Ltd.			
Business Domain	Research and development, manufacture and sale of Agrochemicals, fertilizers and biostimulants			
Head Office	8th Floor, NBF Ogawa-machi Bldg.1-3-1 Kanda Ogawa-machi, Chiyoda-ku, Tokyo 101-0052, Japan			
Establishment	September 28, 2010			
Capital	461.9 Million Yen			
Fiscal year end	December			
Representative	Hisashi Oka, President & CEO			
Number of Employees on consolidated basis	697 as of the end of December 2023 Same below			
(Female)	214 (30.7%)			
(Foreigner)	443 (63.6%)			
(Researcher)	129 (18.5%)			
Rate of R&D expenses	Approximately 10% of sales (2023 results: 2,040 million yen 7.0%)			



OAT group company

LIDA Plant Research S. L.



OAT&IIL India Laboratories



PT.OAT MITOKU AGRIO



Runhe (Zhoushan)



Plant Science Co., Ltd.



Inplanta Innovations Inc.



Chrysal (Blue Wave Holding B.V.)



Asahi Chemical Europe s. r. o.





Asahi Chemical Manufacturing Co., Ltd.



Corporate Philosophy



Our philosophy and 3 business domains of agritechnologies

Pursuing ESG (Environment, Society, Governance) management and proactive involvement in SDGs (Sustainable Development Goals)

Crop Protection

Two (2) R & D centers for developing New and Safety AI Japan & India

Fertilization & Drip Irrigation

Cultivation technology Hydroponic fertilizers

(No. 1 market share in Japan)

Biostimulant

Boost immunity of plants against environmental stress and disease & pests Respecting for bio-diversity

"Corporate Philosophy" We contribute to the people in the world with our agritechnology and sincerity

Summary of 3 years



Business expansion through "growth drivers"

- Expand sales of "Green PPP" to fruit tree etc.
- Increase in "Biostimulant products" used in 89 countries to 96 countries
- Development of smart agriculture with Growth diagnosis using AI in the "greenhouse horticulture field"
- \cdot "Global business expansion" with an overseas sales ratio of over 70%

糾	Consolidated Result FY2020	Consolidated Result FY2021	Consolidated Result FY2022	Consolidated Result FY2023	cf. 2020 Amount Growth rate
Sales	20,288	22,678	26,960	28,988	+ 8,700 142.9%
Operating Income	1,512	2,001	3,346	3,766	+ 2,254 249.1%
Ordinary Income	1,346	1,989	3,385	3,800	+ 2,454 282.3%
Net income	837	1,456	2,261	2,488	+1,651 297.2%

Net Sales and Operating Income from 2010 to 2024

Average annual growth rate	Founding Period FY2010~2017	Expanding Period FY2018~2023	Increase amount 2023 performance compared to 2018
Sales	8.1% (2011-17)	13.6%	137.1
Operating Income	35.0% (2011-17)	16.4%	20.2





Peace of mino

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Our Definition of Green PPP

Safe and environmentally friendly plant protection products without restrictions on application times such as natural / food additive-derived or organic JAS-compliant plant protection products.

Why Green PPP is needed?

Natural / food-derived

No limit to the number of times it can be used

Difficult for pests to acquire drug resistance

Friendly to natural enemies and fits IPM

Expanding the sales of Green PPP in 3 years







2020年

2021年

2022年

2023年



Our Definition of Biostimulants

Biostimulant is a substance and technology that enhances the natural immunity of plants and promotes resistances against cold, heat and diseases & pest, and also for the potential crop growth.

Why biostimulants are needed?

Increasing the yield and improving the quality by enhanced immunity

Enhancing the plant resistance to stresses

Improving the quality of the seed set, sugar content and color of the fruit

Adjusting and improving the water balance in plants

Improving the physical properties of farmed soil



Expanding the sales of Biostimulants in 3 years





Expanding the sales area with global development in 3 years 🗚 OAT 🕫



Expanding the sales area with global development in 3 years 🗚 OAT 🕫



Actively carried out direct promotion activities in local fields around the world for major products 12

Expanding the sales of Overseas Business in 3 years





2020年

2021年

2022年

2023年

Sales proportion by area to area in the world OATS

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2021 Domestic: Overseas = 7.4 billion yen: 15.3 billion yen (33:67) 2023 = 8.4 billion yen: 20.5 billion yen (29:71)

Building the "Corporate Culture"

OAT Agrio hopes to provide all people everywhere with "Joy of cultivating", "Emotion of watching", and "Contentment of eating".
 We launched the OAT Agrio cultivation media site and Instagram to deliver the fun of cultivation to many people. Our Instagram account reached 50,000 followers.



Results of Scope1, 2, and 3 Emissions (t-CO2)

	FY2021	FY2022	FY2023	Composition Ratio
Scope1	1,044	1,048	1,059	0.9%
Scope2	2,451	2,456	1,934	1.6%
Scope1+2	3,495	3,504	2,993	2.5%
Scope3	123,708	141,018	115,404	97.5%
Category 1	102,106	116,008	95,135	80.4%
Category 4	10,755	12,219	9,335	7.9%
Total of Categories 2,3,5,6,7,9, 11,and12	10,847	12,791	10,934	9.2%
Scope1+2+3	127,203	144,522	118,397	100.0%





Paragraphic Control

FY2023 Ratio of Scope1, 2, and 3 Emissions



<Over the next 3 years>

- •Allocating approx. 8 bill. Yen for R&D investment (last 3 years: Invested approx. 6 bill. Yen) Increased researcher by 31 to 147 people
- •We continue to invest more than 10% of sales amounts for R&D
- •We will also allocate 10% of our R&D expenses in cutting-edge agricultural technologies.



We will concentrate our investment in R&D toward innovation

R&D investment and research staff by 3 domains



Issues of Agriculture



Global Issues: Eradicating hunger and malnutrition from the world

- ✓ Rural poverty and poor living conditions for rural people
- Food waste in developed countries and food shortages in developing countries on the other hand
- ✓ Environmental burden from agriculture and forestry
- ✓ (23% of GHG emissions come from agriculture and forestry)
- ✓ Food loss (40% of all food produced, 2.5 billion tons, is wasted)
- $\checkmark\,$ Deterioration of growing conditions due to extreme weather events
- ✓ Securing water resources necessary for agricultural production
- ✓ Lack of arable land
- ✓ Crop damage from pests and diseases, and persistent crop failures

Japan-specific issues: Achieving profitable agriculture

- Many farms are small and family-owned
- ✓ Poor working conditions due to low farm incomes and frequent holiday work
- ✓ Threat of foreign agricultural products due to TPP, etc.
- Increase in abandoned farmland due to scattered farmland, lack of successors
- ✓ Labor shortage

Addressing agricultural issues head-on and solving them through innovation



"Vision for 2030"

OCrop Protection Products

Aiming sales target ratio of Green PPP to 20% Search for highly active compounds derived from natural products and food additives Development of Bio-Pesticide using useful microorganisms Development of high-performance biochar using useful microorganisms

Biostimulant

Acceleration of R & D for realizing stable yield even in intensely hot circumstances Chrysal Group is dedicated to the sales expansion of BS products LIDA works on the development of BS using useful microorganisms i.e. BIOFORCE

OFertilizers and drip irrigation

Achieving high-yield cultivation by developing a unique cultivation system Reducing 30% of fertilizer use compared to the conventional agriculture by expanding a hydroponic soil cultivation system

OHydroponics using organic fertilizers

Prevailing & Expanding the "Probioponics" cultivation Utilization of unused resources Expansion of JAS organic pest control materials



OSmart Agriculture

Labor saving	Evolution of Fertilization & drip irrigation technology
	Prevention and prediction of pests and diseases
	Utilizing robots for automated harvesting
Efficiency	Scientifically visualization of the picture inside the plant and in the rhizosphere
	Real-time sensing of the environment, inside plants, and underground
Big data	Developing services that provide information and solutions

OZero CO₂ emissions, looking toward 2050

Fully transition to horticultural facilities that do not use fossil fuels Introduction of biomass power generation and effective use of waste heat, i.e. year-round cultivation in greenhouse horticulture Supporting carbon credits by applying biochar to farmland Accelerating of Chrysal Group's Seafreight

Genome editing/Genetic modification technology

Achieving highly efficient genome editing Supporting a healthy and long-lived society through taste modification using miraculin gene tomatoes

③Establishment of new cultivation method

- Aiming for high yields and high quality by optimizing fertilization time, frequency, and dosage
- Establishment of cultivation methods for health-maintaining plants such as Panax ginseng and medicinal herbs
- Aiming for a stable supply using our unique cultivation method



"Vision for 2030"

Through item **1** to **3**

"We aim for a company contributing not only in increasing food production and eco-friendly agriculture but also pertain to the health, which delivers the joy of cultivating, the emotion of watching, and the contentment of eating."



To realize this "vision for 2030", OAT Agrio will allocate its investment in R&D toward innovation over the next three years.



Green PPP

- Natural/food additive-derived or organic JAS-compliant PPP with the PPP registration
- ✓ A safe, environmentally friendly pest control material without limit of application times
- Japanese market is estimated to be approximately 20 billion yen, overseas market is approximately 175 billion yen
- We have No. 1 market share for the greenhouse horticulture field, expanding product portfolio



Innovation using useful microorganisms

Search for useful microorganisms that contribute to food production

- Selection of useful microorganisms (Bacillus genus, Trichoderma genus, etc.) using 16S rRNA gene analysis regarding microbial communities in specific conditions and regions
- ✓ Development of Bio-Pesticide using selected useful microorganisms
- Development of high-performance biochar using biochar and useful microorganisms



Powdered Biochar

Chrysal group

- Collaboration with LIDA Plant Research Co., LTD in Spain for the development of BS products that contribute to improving flower growing and postharvest quality
- ✓ Scheduled to be launched in Ecuador in 2024, development is also underway in Colombia and



Chrysal & Sustainable Crop Care



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Research and development for Biostimulant products

LIDA Plant Research, S.L. Development of products with reduced environmental impact using biological control technology

- Contributing to a new plant protection system through synergistic effects
- Products that comply with European regulations
- ✓ Reduce chemical ppps
- ✓ Sustainable plant protection









Biostimulants Bio vaccine



Microorganisms



SINERGIA PERFECTA ENTRE MICROORGANISMOS Y SUSTANCIAS BIOESTIMULANTES

Probioponics: Utilizing unused resources

- ✓ A hydroponic technology utilizing organic fertilizers
- Limiting the nitrogen source to biomass "organic substances derived from living things"
- Efficiently mineralize unused resources that can become N, P, and K and use them as fertilizers
- A byproduct produced in the process of producing starch from corn
- The broth discharged during the manufacturing process of processed seafood products
- Utilization of livestock waste
- Solids (powders) such as oil cake and fish powder that decompose slowly

To realize the social implementation of Probioponics

- ✓ A lineup of liquid fertilizers that meet Probioponics Standards and can grow the plant with one component solution
- ✓ Development of irrigation equipment for organic liquid fertilizer
- Sustainable cultivation technology that achieves carbon neutrality and other environmental impact reductions
- ✓ Realizing sustainable agriculture that is friendly to people and the environment
- \checkmark Reduce chemical fertilizers relied on import and utilize unused domestic resources.





Probioponics dedicated Fertilization equipment



Smart Agriculture Initiatives





Deliver accumulated big data to crop growers Develop services that provide information and solutions

Smart Agriculture Labor saving

- Prediction and prevention of pests and diseases
- Development of pest and disease outbreak prediction system using mobile devices
- ✓ Pests are difficult to control in a heavy incidence situation
- Pest control becomes easier by detecting early symptoms of pest outbreaks



Prediction of pests and diseases using smartphones



detects pests and diseases

Labor saving/Realizing sustainable agriculture

- ✓ Reducing work time for pest control
- ✓ Reducing material costs for pest control
- ✓ Enabling the production of the high value-added agricultural products

Zero CO2 emissions



Complete transition to horticultural facilities without using fossil fuels

Introduction of biomass power generation and effective use of waste heat, i.e. year-round cultivation in greenhouse horticulture
 Supporting carbon credits by applying biochar to farmland
 Development of high-performance biochar adding useful microorganisms



Zero CO2 emissions



 Comprehensive quality control solution business for transportation of flowers from the producing area to the consuming area

Why Seafreight ?

- Environmental Impact: Reduction of CO₂ emissions
 Switching from air transport to sea transport can significantly reduce CO₂ emissions
- ✓ Reliability of quality control
- ✓ Total costs advantage
- What is Seafreight service ?
- ✓ Post-harvest treatments \Rightarrow Quality report \Rightarrow Data logger management
 - \Rightarrow Follow-up work at arrival point during transportation
- \checkmark Prevention of deterioration caused by Botrytis ethylene and discoloration
- Suppression of leaf dehydration during transportation + investigation of causes when quality problems occur



Serving many clients in Kenya



[Case] 1 container of 369,000 stems to be transported from Kenya to the Netherlands





Genome editing technology





Genetic modification technology



What's Genetic modification technology?

- ✓ Gene Editing technology is a technology that introduces a portion of the genes (DNA) of one organism into the cells of another organism to express that gene.
- ✓ Genetically modified crops are crops that have been bred using genetic modification technology.

Features of the taste-modifying Miraculin

- ✓ Glycoproteins that accumulate in Miracle Fruit have a tastemodifying efficacy that makes sour taste perceived as sweetness
- ✓ In the raw fruit state, activity is lost over time.
- \checkmark Activity is lost by heating or thawing from the frozen state.
- Production of Miraculin-accumulating tomato using genetic modification technology
- Tomatoes introduced the Miraculin gene using genetic modification technology are easy to cultivate, stable yield, mass production possible, and stable Miraculin content

The potential of Miraculin

- ✓ Contributing to lifestyle-related disease prevention
- $\checkmark\,$ Relieving stress due to restricted diet
- ✓ Supporting a healthy and long-lived society



Miracle Fruit









Tomatoes introduced the Miraculin gene

Establishment of new cultivation method



Reducing chemical fertilizer usage by 30%

- ✓ Developing the most efficient fertilization method for plants
 - Capture and analyze phenomena within plants, within greenhouses, and in the rhizosphere
 - Discover fertilization and drip irrigation technologies that match with plant physiology
 - □ Optimize fertilization time, frequency, and the dosage.
 - □ Demonstrate and prove that the average weight of crops is increased even when the amount of fertilizer applied is reduced

Goal

✓ Increasing the amount of crops available for sale

- □ Increase yield by 1.5 times with the same amount of fertilizer applied
- Expand to various fruits and vegetables



Isolated cultivation



Hydroponic soil cultivation system

Medicinal herb

- Medicinal herbs are used in Chinese medicine and health foods, and many of them require a long time to harvest.
- Cultivation becomes difficult if farmland is used for a long time
- Cultivation of medicinal herbs depends on foreign countries (80% imported)

Cultivation of medicinal herbs

- ✓ Panax ginseng is used as a raw material for Chinese herbal medicine
- ✓ Cultivation period: 2 years are required to produce seedlings from seeds Another 2 to 4 years to harvest



Seedlings (1st grade) (Source: Chiba University Floriculture and Seedling Production Blog)



Cloned seedlings of Panax ginseng after primary acclimation after 6 months



Source from "Development of technology to Expand production of medicinal crops", Ministry of Agriculture, Forestry and Fisheries commissioned project research

Efficient cultivation methods

- Select superior cloned seedlings of Panax ginseng using tissue culture technology **Clone seedlings have the excellent properties of** ``many buds'' and ``easily thick roots.''
- Peed seedlings in one year with hydroponic technologies
- **3** Utilize Panax ginseng, which can shorten the cultivation period and have excellent properties, as herbal medicine and health food.

Schedule for launching new products



Green Products : FY2024-2026 New Products 8 FY2027-2031 New Products 8

Control Materials : FY2024-2026 New Products 10 FY2027-2

FY2027-2031 New Products 5 FY2027-2031 New Products 10 Investing 10% of R&D costs in cutting-edge agricultural technologies

• Acquiring the latest technologies and creating new businesses

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Proposing profitable agriculture



Corporate Philosophy and Innovation



Corporate Philosophy We contribute to the people in the world with our agritechnology and sincerity.

Innovation Intensive investment in R&D to innovate for sustainable agriculture.



Realization of corporate philosophy

OAT Agrio's hope is to provide all people everywhere with the joy of cultivating, the emotion of watching, and the contentment of eating.



Proactive investment in R&D toward innovation Take on challenges in world agriculture head-on and do our best to solve them OAT Agrio moves to the next stage with the development of agriculture

Unit : JPY Mil

科目	Consolidated Result FY2021	Consolidated Result FY2022	Consolidated Result FY2023	Consolidated Plan FY2024	Consolidated Plan FY2025	Consolidated Plan FY2026
Sales	22,678	26,960	28,988	29,300	30,200	31,700
Operating Income	2,001	3,346	3,766	3,150	3,400	3,800
Ordinary Income	1,989	3,385	3,800	3,000	3,300	3,650
Net income attributable to owners of the parent company	1,456	2,261	2,488	1,920	2,150	2,410
R&D investment	2,010	1,958	2,040	2,717	2,566	2,760

Net Sales and Operating Income 2024 onward

Average annual growth rate	Founding Period 2010-2017	Expanding Period 2018-2023	Innovation Period 2024 onward	500
Sales	8.1%	13.6%	4.0% (24-26Plan)	
Operating Income	35.0%	16.4%	9.8% (24-26Plan)	



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New Mid-term Business Plan, consolidated

Unit : JPY Mil

	Results FY2021	Results FY2022	Results FY2023	Plan FY2024	Plan FY2025	Plan FY2026
Net Sales	22,678	26,960	28,988	29,300	30,200	31,700
Operating Income	2,001	3,346	3,766	3,150	3,400	3,800
Ordinary Income	1,989	3,385	3,800	3,000	3,300	3,650
Net for the Period Attributed to Shareholders of the Parent	1,456	2,261	2,488	1,920	2,150	2,410
Operating Income Margin	8.8%	12.4%	13.0%	10.8%	11.3%	12.0%
Consolidated ROE	19.0%	23.4%	20.0%	13.2%	13.6%	13.8%
R&D Investment	2,010	1,958	2,040	2,717	2,566	2,760



Shareholder returns







- This document describes the outlook for the Company and the Group, plans for the future, etc. These forward-looking statements are based on current assumptions about future events and trends, and there is no guarantee that these assumptions are accurate. Due to various factors, actual results may differ materially from those described in this document.
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