



## Health & Crop Sciences

**Contribute to Solving Global Issues related to Food, Health, Hygiene, and the Environment by Leveraging Our Excellent Research and Development Capabilities**

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### Primary Focus SDGs



### Business Activities

Sumitomo Chemical's Health & Crop Sciences Sector contributes to improving food productivity around the world by providing such specialized solutions as crop protection and enhancement products and agricultural materials, and methionine.

### Core Competence

Sumitomo Chemical globally distributes not only excellent agrochemical products developed in-house, but also unique biorational crop protection and enhancement products and post-harvest solutions with high market shares. In addition to our range of unique crop protection products and the research and development capabilities that have been creating them, the strength of Sumitomo Chemical's Crop Protection and Enhancement business lies in its global distribution channels. And in our methionine business, Sumitomo Chemical offers a stable supply, with integrated production from raw materials using advanced production technology.

### Basic Strategy

Sumitomo Chemical is currently working on further enhancing the strength of our crop protection products and agricultural materials, expanding our global footprint (our own distribution network), and developing and launching new crop protection products. In addition, we are working on solidifying our position

as the leader in the methionine business in Asia by increasing our competitiveness.

### Initiatives in Fiscal 2019

We acquired Nufarm's South American business with the goals of expanding our global footprint and increasing our sales of new leading fungicides. In India, we also completed the integration of two subsidiaries. We optimized our methionine production system by halting the older plants with low productivity.

### Issues in the Future

We are accelerating the development of next-generation crop protection products to launch them as soon as possible, and we are focusing on maximizing synergies from integration in South America and India, where large-scale strategic investments were made. We are also working to expand businesses where Sumitomo Chemical has an advantage, such as biorationals and seed treatments. The competitiveness of our methionine business will be further strengthened through thoroughgoing rationalization.

### Long-term Vision

We continue to aim to expand the scale of our businesses by contributing to solving global issues related to food, health, hygiene, and the environment by leveraging our research and development capabilities.

## Corporate Business Plan for FY2019-FY2021

Action Plan	Major Issues	Corporate Business Plan for FY2019-FY2021: Sector Goals FY2021 Target		
		FY2019	In Comparison to FY2018	
(Billions of yen)				
<ul style="list-style-type: none"> <li>Strengthen and expand biorationals business</li> <li>Develop and launch new crop protection chemicals steadily</li> <li>Expand methionine sales and strengthen earnings power</li> <li>Accelerate the global expansion of the environmental health business</li> <li>Develop the nucleic acid medicine business and expand the application of the technology</li> </ul>	<ul style="list-style-type: none"> <li>Establish a global footprint in the crop protection business</li> </ul>	Sales revenue	343.7	+5.6
		Core operating income	2.1	-17.6
		Sales revenue of SSS*-designated products	119.8	+5.1
				184.0

\* Sumika Sustainable Solutions

## SWOT Analyses of the Major Businesses

- Excellent research and development capabilities and the robust development pipeline of crop protection chemicals and the biorationals
- Differentiated technologies and products in niche areas
- Products with high market share
- Alliances with major overseas agrochemical companies
- Offering total solutions

- Increasing food demand due to the growing global population
- Growing agriculture-related businesses
- Increased demand in fields related to or downstream of the environmental health business



- Relatively small business size compared to the competing majors

- Tightening of the regulations on crop protection chemicals
- Increased competition with off-patent crop protection chemicals
- Consolidation in the major agrochemical companies

## Product Introduction

### ■ Agrosolutions Business [Agricultural Pesticides, Herbicides and Fungicides, Biorationals, Fertilizers, Rice, etc.]

Agrochemical Products	We offer various crop protection products, such as insecticides effective on a range of insects causing damage to crops, herbicides for a variety of crops, and fungicides to help control diseases.
Biorationals	We offer microbial pesticides, plant growth regulators, and biorational rhizospheres that utilize ingredients derived from natural products.



Agrosolution products

### ■ Environmental Health Business [Household Pesticides, Disease Control Insecticides, Products related to Tropical Infectious Disease Prevention, Veterinary Drugs, etc.]

Household Pesticides	We manufacture and market insecticides for indoor and outdoor use (anti-mosquito incense, mosquito repellent, aerosol, etc.) and pyrethroid agents used in insect-repellent resin, and other devices.
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Household insecticides

### ■ Feed Additives Business [Methionine]

Methionine	We manufacture and market methionine mainly used in poultry feed. Methionine is one of the essential amino acids and acts to promote the growth of animals being raised.
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DL-methionine, Methionine hydroxy analog

### ■ Pharmaceuticals Business [Active Pharmaceutical Ingredients, Nucleic Acid Medicine, etc.]

Drug Precursors	We supply active pharmaceutical ingredients and intermediates to Japanese and foreign pharmaceutical companies.
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Active pharmaceutical ingredients (APIs)

## Market Environment and Strategy for Major Businesses

### ■ Global Agrosolutions Business

The global market for crop protection products is expected to grow at an annual rate of around 3%. The overseas crop protection product business conducts business alliances and investments to further expand the scale of its business, primarily in South America and India, which are rapidly growing. The South American region accounts for about 25% of the global pesticide market, surpassing North America and China in terms of market size. India is growing at an annual rate of 7-8%. The business also focuses on large-scale next-generation pesticides, aiming to launch them as soon as possible in a global market.

### ■ Methionine

The methionine market, which currently has an annual production of 1.3 to 1.4 million tons, is expected to grow at an annual rate of 6%, against the backdrop of a growing world population and the spread of meat-eating culture in emerging countries. We strengthened production capacity in fiscal 2018, expanding sales to new preferential customers, and making our position as a leading Asian manufacturer even more robust. Meanwhile, we are promoting improved profitability by halting the operation of aging plants with low production efficiency.

# Value Creation Model: Global Agrosolutions Business

## System for Providing Added Value

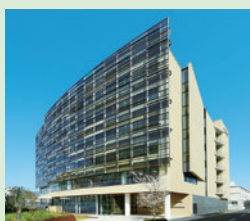
### Major Management Resources (Input)

#### Intellectual Capital

Sumitomo Chemical is conducting research and development based on the knowledge regarding chemical and biorational crop protection products, which it obtained after its many years of research and development activities.

#### Human Capital

Personnel located around the world are conducting research and development using a global network.



The Chemistry Research Center, a global discovery and innovation base for the Health and Crop Sciences Sector

### Value Chain



Raw material producers

Oita Works



Sumitomo Chemical

Production of compounds and formulations (Agrochemical products)

Valent Biosciences LLC, Osage Plant



Sumitomo Chemical Group

Production of compounds and formulations (Biorational crop protection products)

### Sumitomo Chemical's Competitive Advantages

#### Competitive Conditions in the Market

There are many producers in the global crop protection market, from major producers in the U.S. and Europe to comparatively small producers. Crop Protection products differ significantly in needs by region and crops. Sumitomo Chemical pursues unique positioning in various markets around the world, by using its product portfolio consisting of chemical and biorational products for crop protection and enhancement.

#### Competitive Advantages

Sumitomo Chemical is committed to research and development, working on everything from the discovery of novel lead compounds to the product development for end-users from a long-term perspective in order to provide new solutions. These efforts enable Sumitomo Chemical to obtain proprietary products and technologies, which is the foundation of its competitive advantages.

#### Initiatives to Enhance Competitive Advantages

In 2018, Sumitomo Chemical established the Chemistry Research Center, a synthesis research building at the Health & Crop Sciences Research Laboratory, integrating research functions ranging from novel compound discovery to commercial manufacturing process development. In the U.S., a new biorational research and development facility started operations, thus promoting more efficient and accelerated development. In addition, the company established a research center in Brazil in 2016, a field testing station in the western U.S. in 2017, and a new test facility at Makabe Agriculture Research Center in Japan in 2018, where tests are conducted in a wider range of environments, thereby accelerating development of new products.

### Major Processes Generating Competitive Advantages

**Research:** In discovery research, Sumitomo Chemical searches for active ingredients for new crop protection products. In this process, we evaluate not only a compound's efficacy but also its safety for people and the environment. We utilize our global research and development network so as to develop new solutions as soon as possible. In addition, we are also putting effort into product development for new formulations and applications of existing active ingredients.



Health & Crop Sciences Research Laboratory

### Earnings Structure and Role in Driving Income

The scale of the global crop protection market is about USD60 billion, and it is expected to grow at an annual rate of about 3%. In order to improve its earnings rate, Sumitomo Chemical aims to continuously launch highly effective products that meet the needs of the market, using the advanced technology obtained in research and development. In 2019, we continued development of next-generation crop protection products and submitted registration applications in various countries. We plan to launch these products in 2020 and beyond.

## Added Value Provided to Society

Sumitomo Chemical provides crop protection products through research and development, registrations, and manufacturing. These products are sold through wholesalers and retailers, and are used by farmers.



**Customers**  
Wholesalers, retailers,  
agricultural cooperatives



**Customers**  
Farmers

### Customer and Consumer Needs

Farmers use crop protection products as they hope to improve the quality and yield of their agricultural crops. In addition, they also expect to make farming work more efficient, and improve profitability. At the same time, they also pursue safety and security, hoping that the crop protection products will not harm either their health or that of the consumers of the agricultural products.

### Providing Customer Value

Sumitomo Chemical offers unique, effective products that meet customer needs and creates solutions that match the needs of every region and crop, which contribute to developing new, sustainable agricultural technologies.



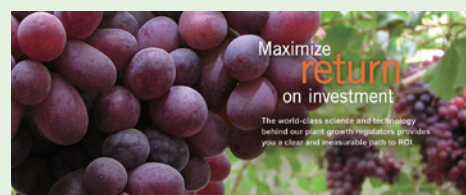
Training on using biorationals



## Contributing to a Stable Food Supply by Improving Food Productivity

Sumitomo Chemical has raised "contribution to solving food issues" as one of the material issues to be addressed as management priorities. Plant growth regulators, one of the products of our overseas crop protection business, act to enhance the fruit-bearing ability of fruits and vegetables, increase their size, and improve their quality. As they can adjust the flowering and maturity periods, plant growth regulators can help crop cultivation even in cold and dry regions, and contribute to increasing food production in various regions around the world.

In the face of an increasing world population and a growing world economy, there has been an increasing demand for safe food. We are increasing food productivity by globally supplying unique materials, and we aim to contribute to a stable food supply.



From Valent Biosciences' product summary