Agricultural Chemicals and Agriculture-Related Business (Japan)

Kumiai Group sells agricultural chemicals indispensable for maintaining and improving crop (food) production. We provide safe and secure agricultural chemical products based on integrated processes covering every phase from chemical discovery through to manufacturing and sales. Our Ultimate Goals are to be an "Advanced chemical manufacturer that contributes to agriculture, which supports stable food supply, and develops innovative technologies and unique business domains." To realize these goals, we are committed to developing and promoting new products and technologies that contribute to the "Strategy for Sustainable Food Systems, MIDORI" set forth by the Ministry of Agriculture, Forestry and Fisheries, thus helping ensure the stable supply of food.

Managing Executive Officer, Head of Domestic Sales Division IWATA Kouichi

Opportunities, Threats, Strengths, and Weaknesses

Opportunities
- Increase in the number of large-scale growers and agricultural corporations
- Expanding demand for environmentally-friendly agricultural chemicals and physical pest control in accordance with the Strategy for Sustainable Food Systems, MIDORI

Threats
- Reduction in the area of cropland
- Termination of sales of agricultural chemicals whose registration is difficult to maintain
- Increase in raw materials cost

Strengths
- In-house development and manufacturing of active ingredients and products
- One-of-a-kind products (MAMETSUBU® products)
- Strong, community-based sales network

Weaknesses
- Decrease in sales of products for horticulture

Business Environment

Japanese agriculture is facing various issues, including large-scale natural disasters, the effects of global warming (high temperature damage to crops), a shortage of growers due to aging, a decrease of cropland, rising prices of agricultural inputs, and stagnant prices of crops. In these circumstances, the Ministry of Agriculture, Forestry and Fisheries formulated the Strategy for Sustainable Food Systems, MIDORI, in 2021, which aims to achieve both productivity improvement and sustainability in the food industry and agriculture, forestry, and fisheries through innovation in order to establish a sustainable food system. The targets to be achieved by 2050 under the strategy include zero emissions of CO_2 from agriculture, forestry, and fisheries, a shift to low-risk agricultural chemicals, the establishment and dissemination of an integrated pest management system, and organic farming initiatives.

The initiatives and technologies to be realized by 2030 include pinpoint application of agricultural chemicals to areas suffering damage using smart agriculture technology, pest control technology using indigenous natural enemies and light, pest outbreak prediction technology using AI and ICT technology, diffusion of integrated pest management (IPM), and expansion of organic farming. Development and dissemination of new agricultural chemicals meeting these needs, biostimulants, and new pest control technologies are required.

In these environments, shipment volumes in the Japanese agricultural chemical market are declining, but the market size has been unchanged or is increasing slightly at around 340 to 350 billion yen due to higher agricultural chemical prices reflecting cost increases.

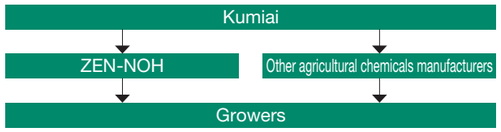
Business Contents

Kumiai's product portfolio includes hundreds of various herbicides, fungicides, and insecticides for meeting the different needs in the market, which vary according to the region. We also have expert sales persons and engineers spread across our 11 bases in Japan for community-based sales and activities to promote wider use. They propose agricultural chemicals according to the region, and provide after-sales service.

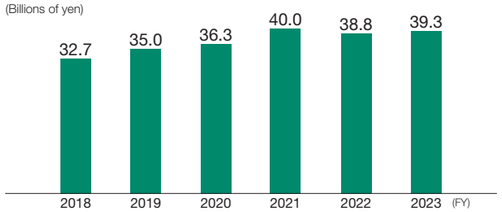
We sell products that we develop and manufacture to the National Federation of Agricultural Cooperative Associations (ZEN-NOH), and these products are provided to growers by JA throughout Japan. We also sell our proprietary active ingredients and products to other manufacturers of agricultural chemicals to maximize sales and profits.

In addition to our products for cropland, Kumiai Group also sells products for non-cropland such as golf courses, highways, and railroad tracks.

Although the market environment has become challenging, net sales from our agricultural chemicals business in Japan are trending upwards centering on our new products. Net sales for FY2023 reached 39.3 billion yen.



Agricultural Chemicals and Agriculture-Related Business Sales (Japan)



Business Strategy

Targets for the Period Covered by the Medium-Term Business Plan

Under the new Medium-Term Business Plan, we will further strengthen our efforts in the paddy rice field, our business foundation in Japan, rebuild the business in the horticultural field, and transform the profit structure by focusing on our proprietary active ingredients, based on the medium- to long-term marketing strategy.

Paddy Rice Field

In the paddy rice field, the core of our domestic agricultural chemicals business, we will propose one-shot herbicides that meet the needs of growers from our extensive lineup, centering on our proprietary active ingredients such as EFFEEDA®, a herbicide for paddy rice. By expanding the area of application of our products from 330,000 hectares in FY2023 to 380,000 hectares in FY2026, we aim to continue holding the top share in the market.

Regarding paddy rice nursery box application products, we will establish a foundation for the dissemination of our proprietary active ingredient DISARTA® to expand the area of application from 230,000 hectares in FY2023 to 260,000 hectares in FY2026, and increase our market share for paddy rice nursery box application products.

Horticultural Field

In the horticultural field, we plan to concentrate on our proprietary active ingredients and achieve sales of 116% of the FY2023 level in FY2026. Specifically, we will focus on expanding sales of KITAXEEV® launched in 2021, which contains the field crop herbicide AXEEV®, and on VANENTA® (Flupentiofenox), a new miticide, which is being developed in house. VANENTA® is drawing attention as a new miticide effective for mites that are less susceptible to conventional agricultural chemicals used in Japan. We are preparing to launch this to expand our business into the horticultural field.

Expansion of the Market Share in Existing Markets (Paddy Rice)

Regarding one-shot herbicides, which are the core products of our domestic agricultural chemicals business in the paddy rice field, and paddy rice nursery box application products, we will expand the lineup of mixed formulations of EFFEEDA® and DISARTA® to ensure suitability for the characteristics and needs of the regions in which they are applied, to further expand our market share.

To maintain our position at the top of the market for one-shot herbicides for paddy rice, which we have held for three consecutive years since 2021, we will work to expand sales of AKATSUKI® products and low-cost LAOH® products, which are new mixed formulations of EFFEEDA® launched in FY2023. In 2024, we will introduce new SHINGEKI® products that are gentle on the environment, to establish a foundation for their widespread use.

For paddy rice nursery box application products, we will endeavor to expand our market share, which is led by DISARTA®. We will work to increase sales of BOON® BUZZ® SC, which is a new mixed formulation of DISARTA® launched in Hokkaido in 2023. In addition, the paddy rice nursery box application product BOON® HADES, which are effective against flying insect pests that have become less susceptible to conventional insecticides, will be launched in the western Japan market in 2024 to establish a foundation for widespread use of the product.

Moreover, by working to maximize the lineup of products in the field of mid- to late-stage herbicides centering on our proprietary active ingredients, we aim to raise the overall level of our domestic agricultural chemicals business.

Expansion of the Market Share in Existing Markets (Non-Cropland)

Kumiai Group sells its products for non-cropland fields (golf courses, highways, railroad tracks, solar panels, etc.) through RIKENGREEN, a subsidiary of Kumiai. In the golf course field, an important field, we aim to expand sales of our own products by further strengthening relationships with major golf course operators while maintaining the No.1 market share of SOLISTE SC and SPADA water dispersible granules, which are essential for the control of annual bluegrass and a kind of Cyperus (*Cyperus brevifolius*), which are difficult-to-control weeds. We will also continue to launch new products and solidify our position as the industry leader. We aim to achieve our targets by strengthening measures to control difficult-to-control weeds and shrubs in the highway field, expanding sales for Shinkansen slopes in the railway track field, and approaching companies that have not yet applied chemicals in the solar panel field. We are involved in a satochi-satoyama conservation project in Tochigi Prefecture and will continue the study with a view to social implementation of chemical-based weed management.

Responding to New Needs (Labor Saving, Environment)

To address issues facing agriculture in Japan, Kumiai is committed to developing and promoting new products and technologies that contribute to the Strategy for Sustainable Food Systems, MIDORI set forth by the Ministry of Agriculture, Forestry and Fisheries with the aim of supporting stable food production and realize sustainable agriculture.

Recognizing that smart agriculture, which aims to make agricultural work more efficient and labor-saving, is indispensable for sustainable productivity improvement as stated in the Strategy for Sustainable Food Systems, MIDORI, we are promoting collaboration with smart agriculture-related manufacturers, etc. Specifically, we are endeavoring to make agricultural work more efficient and labor-saving through the application of our proprietary labor-saving MAMETSUBU® formulations for paddy rice, in combination with drones for agricultural use, radio-controlled boats, and automatic irrigation systems, which are becoming increasingly popular. In addition, since there is a need to reduce the impact of chemical pesticides on the environment, our IPM efforts include the use of microbial pesticides, remote sensing technology, the spread of low-drift MAMETSUBU® formulations, and advanced agricultural inputs (biostimulants and new microbial pesticides), which we will promote for social implementation.

We will continue making efforts to improve productivity and agricultural sustainability while ensuring harmony with the environment by providing essential products for both cropland and non-cropland.

Agricultural Chemicals and Agriculture-Related Business (Overseas)

Kumiai Group is promoting the wide use of products containing safe and secure proprietary active ingredients not only in Japan but also around the world, so as to contribute to improving the productivity of agriculture globally. In response to changes in the environment in which agriculture is conducted, such as increased demand for food due to global population growth, sustainable and environmentally-friendly agricultural production, and reduced use of agricultural materials, including agricultural chemicals, we will contribute to stable production and supply of food worldwide by leveraging R&D capabilities and the sales system, which are Kumiai Group's strengths.

Representative Director, Senior Managing Executive Officer, Head of Overseas Sales Division

UCHIDOI Toshiharu

Opportunities, Threats, Strengths, and Weaknesses

Opportunities
- Increasing demand for food as the world population grows
- Spread of resistant weeds and pests against conventional agricultural chemicals
- Increasing demand for products with low environmental impact

Threats
- Emergence of resistant weeds and pests against Kumiai agricultural chemical products
- Emergence of inexpensive competing compounds and generic products

Strengths
- In-house development and manufacturing of active ingredients and products
- System of strong cooperation with local distributors

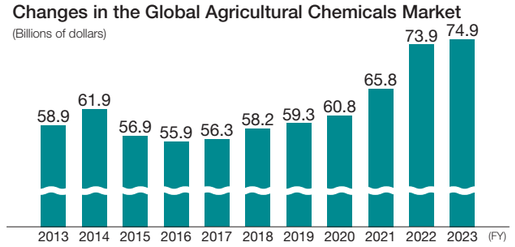
Weaknesses
- Dependence on local distributors and lack of own distribution network
- Lower price competitiveness of proprietary products than generic products

Business Environment

The global agricultural chemicals market continues to grow, centering on South America and Asia, on the back of a growing world population and increasing demand for grain due to changes in dietary habits. According to AgbioInvestor, the market is projected to worth 82.5 billion dollars in 2027.

Meanwhile, the global agricultural chemicals market has been fluctuating greatly over the past few years. In 2022, the prolonged impact of the COVID-19 pandemic and the tense international situation, including the situation in Ukraine, caused panic buying of agricultural inputs by growers, and agricultural chemical prices soared. In 2023, agricultural chemical products were in plentiful supply, their prices fell, and optimization of distribution inventories, which had ballooned by 2022, began. This trend of inventory optimization is expected to continue in 2024 and is expected to affect sales of Kumiai products.

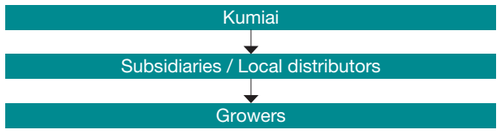
Changes in the Global Agricultural Chemicals Market



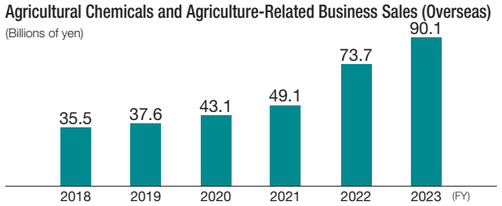
Business Contents

Kumiai sells its proprietary products in more than 50 countries around the world. Overseas sales of the Agricultural Chemicals and Agriculture-Related Business for FY2023 were 90.1 billion, benefitting from continued growth due to a favorable market environment.

We sell to growers in collaboration with Kumiai Group's affiliated companies and distributors that have strong sales networks in each market. Active ingredients that Kumiai Group sells are commercialized by distributors, and are then sold to local retailers and growers. In addition to single formulation, we also develop and sell mixed formulations that combine other ingredients, such as active ingredients from distributors. We also sell products that are based on our unique technologies through distributors to increase added value by differentiating our products from those of our competitors. Regarding sales promotion, employees of Kumiai Group visit local markets in order to conduct surveys, identify customer needs, and propose effective usage suited to the region, leading to development of new markets.



Agricultural Chemicals and Agriculture-Related Business Sales (Overseas)



Business Strategy

Targets for the Period Covered by the Medium-Term Business Plan

The new Medium-Term Business Plan targets consolidated net sales of 185.0 billion yen in 2026 and calls for further growth of sales of agricultural chemicals overseas. The growth driver will be the field crop herbicide AXEEV® mainly for use with soybeans, corn, and wheat. Sales of AXEEV® have been brisk since it fulfills a crucial role in the control of weeds resistant to conventional herbicides that are becoming a problem in grain cultivation. Sales of AXEEV® reached 73.1 billion yen in FY2023. Herbicide resistant weeds are increasing worldwide, and the market for AXEEV® is expected to continue growing. AXEEV® is currently registered as an agricultural chemical in 23 countries, and development is underway in more than 10 countries. In countries where AXEEV® is already marketed, we will develop new mixed formulations, expand the range of crops to which AXEEV® can be applied, and implement distribution measures such as sales promotions. In addition, we will strive for early launch and sales expansion in new markets. Plans call for sales of 84.2 billion yen in 2026. Although the substance patent for AXEEV® expired, the patents for the manufacturing method, intermediates, and mixed formulations are still in effect. We will take decisive action in the event of any infringement of Kumiai's intellectual property in any of our markets. In addition to AXEEV®, we will vigorously promote development and sales expansion of EFFEEDA® herbicide for paddy rice and DISARTA® fungicide for paddy rice, aiming to achieve the targets of the new Medium-Term Business Plan .

Current Status and Strategy by Region

North America

AXEEV® for the U.S. is our mainstay product for sales in North America. In the U.S., the use of AXEEV® is growing because of the increase in the land area subject to soil application in the soybean market, against the background of the spread of herbicide resistant weeds and the widespread use of overlapping soil applications (two applications of a soil-applied herbicide during cultivation). In addition, as a result of the development and launch of new mixed formulations, sales of AXEEV® are trending upward. In the corn market, sales are also trending upward due to the spread of overlapping applications and the launch of new mixed formulations. We will continue to develop new mixed formulations while expanding the range of application methods and applicable crops. We will also seek to increase sales through packaged sales of AXEEV® products in combination with other products and services of the distributors. In the U.S., data on biological trials, safety assessment studies, and crop residue tests used in agricultural chemicals registration are protected, and therefore, Kumiai has exclusive rights to use the data, making introduction of generic products to the market difficult for the foreseeable future. We will implement the above-mentioned sales measures to expand sales of AXEEV® before the market entry of generic products.

Central and South America

AXEEV® for Brazil and Argentina is our mainstay product for sales in this region. In Brazil, although AXEEV® sales have been increasing since its launch in 2020, distribution inventories accumulated owing to concerns about supply in view of the global situation until 2022. In 2024, shipments from Kumiai will be systematically adjusted in order to optimize inventories. We aim to increase sales by introducing new mixed formulations in the soybean and corn markets and by increasing use in the sugarcane market. In Argentina, the market for AXEEV® is expected to grow as herbicide resistant weeds are spreading in the soybean and corn markets. Although generic products are expected to be introduced in the Argentine market starting in 2024, we will adopt an appropriate pricing strategy to maintain and expand our market share in the growing market.

Asia and Oceania

AXEEV® for Australia is our mainstay product for sales in this region. In Australia, Italian ryegrass (*Lolium multiflorum*), which is resistant to conventional herbicides, is becoming a major problem in wheat cultivation, and sales of AXEEV® have been increasing because of its efficacy. However, generic products are expected to become available from 2024 onward. We will implement an appropriate pricing strategy and strengthen sales promotion support and other measures to maintain and expand the market share. Moreover, EFFEEDA®, a herbicide for paddy rice, and DISARTA®, a fungicide for paddy rice, whose sales are increasing in Japan, were launched in South Korea in 2020 and 2023, respectively. We have been continuing development and launch of new mixed formulations. We will continue collaboration with local distributors to expand sales. Furthermore, in Asia, development of Kumiai products is underway, utilizing the sales network of AAI, an agricultural chemicals manufacturing and sales company based in Singapore, which became a subsidiary in 2021.

Middle East and Africa

AXEEV® is our mainstay product in this region as well. Currently, AXEEV® is sold in South Africa, Saudi Arabia, and certain other countries, and sales expansion is pursued through development of new mixed formulations and sales promotion support. Sales in Africa have been smaller than in other regions because we have not been able to conduct development and sales in many countries in Africa. However, in cooperation with AAI, which has a sales network in the region, we will vigorously promote evaluation and development of AXEEV® and other Kumiai products in order to expand the number of countries where our products are sold and increase sales.

Europe

Prohexadione-calcium, a plant growth regulator, is our mainstay product in Europe. Owing to its excellent performance and safety, its sales have continued increasing for more than 20 years since its launch. This product has been marketed mainly for wheat, but in recent years, mixed formulations with a fungicide have been developed for sunflower and oilseed rape, and the number of countries where it is registered is growing. We plan to maintain and wherever possible expand sales, going forward. Moreover, we filed an application in 2021 for agricultural chemical registration of EFFEEDA®, which is marketed in Japan as a herbicide for paddy rice, and are developing products for wheat and other crops.

REGALIS®, one of prohexadione-calcium products in Europe
Photo courtesy of BASF. REGALIS® is a registered trademark of BASF.