

# CSR Report 2018

Corporate Social Responsibility Report 2018



**NIHON NOHYAKU CO., LTD.**

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\*1 Nichino Group = Nihon Nohyaku Group  
\*2 JMAFF = the Japanese Ministry of Agriculture, Forestry and Fisheries

**Editorial Policy**

This CSR Report summarizes the Nichino Group activities using the following as references: Environmental Reporting Guidelines (2012) by the Japanese Ministry of the Environment, Environmental Accounting Guidelines (2003) by the Japan Chemical Industry Association (JCIA), and JIS Z 26000: 2012 Guidance on Social Responsibility, etc.

**[Scope of applicability]**

Unless otherwise noted, performance data is from Nihon Nohyaku Co., Ltd. and Nichino Service Co., Ltd.

**[Data aggregation period]**

Unless otherwise noted, the 2017 agrochemical fiscal year (October 2016 to September 2017, denoted in this text simply as "fiscal year"). Capital, numbers of employees, net sales, etc., displayed in this text are as of end of September 2017. Information includes topics through March 2018.

**[Other]**

An explanation of terminology is indicated on the first page. Any errors in the calculation of past data have been corrected and denoted with an (★).

**[Issue]**

April 2018  
(Next: Planned for March 2019)

The Nichino Group\* has outlined the Basic Principles of the Nichino Group as basic management principles shared by all executives and employees, and which serve as the foundation for all our business activities.

\* Refers to consolidated Group companies and non-consolidated Group companies indicated on Page 5.

**Basic Principles of the Nichino Group**

- We contribute to society by ensuring a safe and steady food supply and improving the quality of life for all.
- We fulfill market needs by creating superior values with innovative technologies.
- We commit to being a trustworthy company for all stakeholders through our fair and vigorous business activities.

Based on this Basic Principles, we have established the Nichino Group Action Charter that is applied to all executives and employees.

**The Nichino Group Action Charter**

1. We improve the quality of life for all by providing safe and effective products and services that satisfy our customers.
2. We conduct fair and transparent business operations, respecting social ethics and complying with related laws, regulations and the spirit thereof.
3. We contribute to the realization of a sustainable society, considering the global environment.
4. We actively communicate and contribute to our communities as a good corporate citizen.
5. We properly manage corporate information and disclose it in a timely and appropriate manner.
6. We recognize the importance of personal data, intellectual property and other information, and safeguard it under proper protection and management.
7. We ensure a safe and comfortable work environment for our employees, always respecting human rights and the diversity found among people and cultures.
8. We entirely exclude involvement with antisocial forces and organizations, and resolutely refuse unreasonable requests.
9. We respond to globalization of business activities by adhering to international rules and local laws. We conduct activities with respect for the cultures and customs of local societies, and contribute to the development of each country and region.
10. We promote the sound and sustainable development of the Nichino Group to ensure our social contribution.

The Nichino Group also applies "Chemical Innovator for Crop & Life" as a corporate statement that further solidifies the principles of our Basic Principles and Action Charter. Through this statement, we challenge ourselves to ensure a safe and steady food supply and to improve the quality of life for all through technical innovation.



About CSR (Corporate Social Responsibility)

CSR is the general term for activities focused on achieving sustainable development for the company and society based on the philosophy that the responsibility of a corporation is not simply to adhere to the law and pursue profits for the company, but also to fulfill responsibilities to society based on an ethical code.

About Sustainable Development Goals (SDGs)



The Summit on the Sustainable Development Goals held at the United Nations Headquarters from September 25 to 27, 2015. Leaders from over 150 member nations participated and the summit resulted in the creation of the 2030 Agenda for Sustainable Development Goals. This Agenda outlines recommendations and goals as an action plan for people, the earth, and prosperity. These goals are a continuation of the Millennium Development Goals (MDGs). The SDGs consist of the 17 goals indicated in the symbolized by the logos on the right and 169 targets.





Trajectory of the Nichino Group

Our history is deeply intertwined with that of the agrochemical industry in Japan.

# Overview 90 years

In the early 1920s, Furukawa Electric Co., Ltd. began research and development on agrochemicals as a platform for research using the by-products of copper refinement, the business conducted by Furukawa Mining Co. Ltd. (currently Furukawa Co., Ltd.). Later, this agrochemicals business was transferred to Asahi Denka Kogyo KK. (currently ADEKA Corporation). Subsequently, in 1928, the Agricultural Chemical Department of Asahi Denka Kogyo KK. and Fujii Seiyaku Co., Ltd. merged to form Nihon Nohyaku Co., Ltd., Japanese first agrochemical manufacturing company. Since then, as a company dedicated to protecting food and nature, we have focused on the manufacturing and sales of safe and superior agrochemicals while working to revolutionize technology in our core business. Furthermore, working from the basis of agrochemical research, development and manufacturing, we have been expanding our business in fields such as chemicals, pharmaceuticals and animal health care products.



- 1928 Nihon Nohyaku Co., Ltd. established (Head Office, Osaka)
- 1930 Kawachi Biological Research Farm opened in Osaka



Kawachi Biological Research Farm opened in Osaka

- 1934 Tsukuda Plant (currently Osaka Office) constructed, Kyushu Liaison Office (currently Fukuoka Branch) opened
- 1938 Manchuria Nohyaku Co., Ltd. established
- 1942 Korean Nohyaku Co., Ltd. established
- 1945 End of the World War II resulted in confiscation of all overseas assets
- 1948 Registered 1st agrochemical in Japan
- 1953 Tokyo Plant constructed in Saitama
- 1955 Hokkaido Liaison Office (currently Sapporo Branch) opened
- 1956 Chemical Research Laboratory constructed
- 1959 Head Office relocated to Tokyo
- 1961 Daiichi Nohyaku Co., Ltd. established in Okinawa
- 1963 Listed on Tokyo Stock Exchange, Second Section
- 1964 Nagoya Liaison Office opened (consolidated into Osaka Branch in 2002), began transactions with National Federation of Agricultural Cooperative Associations
- 1969 Saga Plant constructed, Agricultural Chemicals (Malaysia) Sdn. Bhd. established
- 1973 Safety Research Center constructed
- 1974 Nichino Ryokka Co., Ltd. established
- 1975 Fuji-One(isoprothiolane) launched



Fuji-One

- 1978 Kashima Plant constructed in Ibaraki
- 1979 Tohoku Sales Office (currently Sendai Branch) opened
- 1983 Fukushima Plant constructed in Fukushima
- 1984 Tokyo Plant closed Applaud(bupurofezin) launched
- 1985 Nichino Rec Co., Ltd. established Moncut(flutolanil) launched Kantec (malotilate) launched Listed on Tokyo Stock Exchange, First Section
- 1989 Japan House Tech Co., Ltd. (currently Nichino Service Co., Ltd.) established
- 1990 Japan EcoTech Co., Ltd. established
- 1991 Danitron(fenpyroximate) launched Pharmaceutical Research Center constructed
- 1992 London Office opened Naganuma Nursery opened in Hokkaido
- 1993 Research Center (Institute of Safety Research) constructed
- 1994 Astat (lanoconazole) launched
- 1995 Research Center construction completed



Applaud



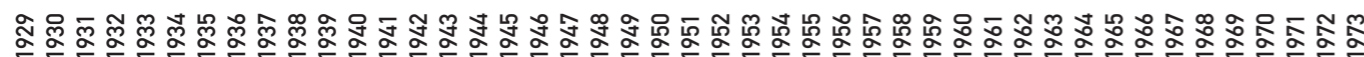
Moncut



Danitron



Research Center



Transitions in net sales consolidated since FY1992.

- 1996 Taiwan Nihon Nohyaku Co., Ltd. established
- 1997 Nihon Nohyaku America, Inc. (currently Nichino America, Inc.) established
- 1999 Ecopart, Thunderbolt(pyraflufen-ethyl) launched
- 2000 Bangkok Office opened
- 2002 Nagoya Branch integrated into Tokyo and Osaka Branch A portion of Tomono Agrica's business acquired Mitsubishi Chemical Corp.'s agrochemical business acquired
- 2003 V-Get(tiadinil) launched Acquired Isouron business from Bayer Cropscience
- 2005 Lulicon (luliconazole) launched
- 2006 Invested in Philagro Holding (France)
- 2007 Phoenix(flubendiamide) launched Zespart, Windom (lanoconazole) launched for OTC use Nichino Europe Co., Ltd. (UK) established
- 2008 Nichino Scholarship Fund established
- 2010 Axel(metaflumizone) launched in Japan Tokai-Hokuriku Sales Office opened Colt(pyrifluquinazon) launched



Ecopart



V-Get



Phoenix



Axel



Colt

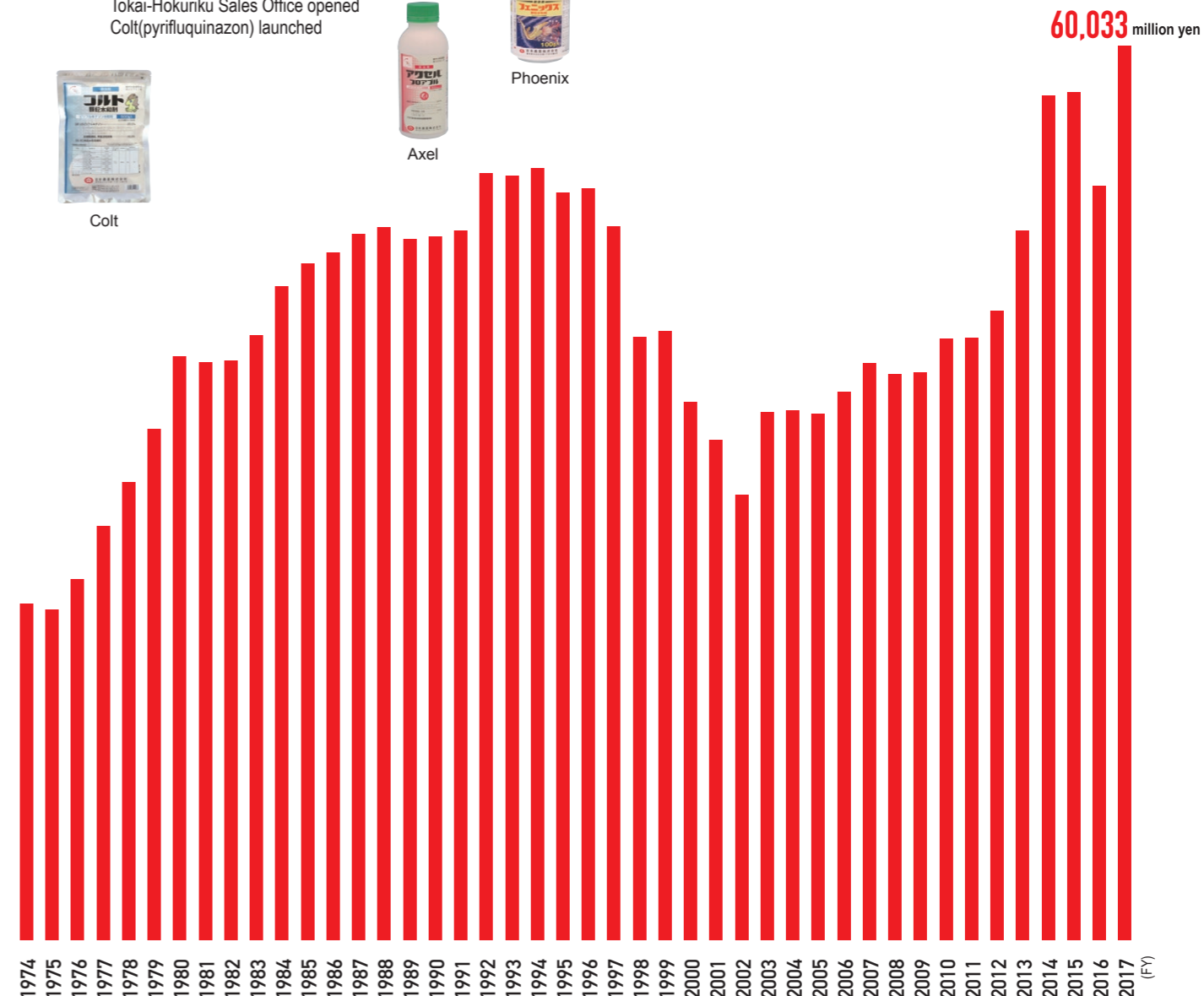
- 2011 Nichino Shanghai Co., Ltd. established
- 2012 Acquired a part of share of Sipcarn Europe (Italy)
- 2013 Head Office relocated to Kyobashi, Chuo-ku, Tokyo, Orthosulfamuron acquired from ISEM S.r.l. (Italy)
- 2014 All shares of Arysta Lifescience Agrimart Co., Ltd. (now AgriMart Corporation) acquired Nichino do Brasil Agroquimicos Ltda. established Invested in Sipcarn Agro S.A. (and changed name to Sipcarn Nichino Brasil S.A.)
- 2015 Danikong, Double Face(pyflubumide) launched Acquired Hyderabad Chemical Ltd. (currently Nichino India Pvt. Ltd.)
- 2016 Sipcarn Nichino Brasil S.A. became our consolidated subsidiary
- 2017 Nichino Vietnam Co., Ltd. established



Danikong



Double Face



60,033 million yen

# About the Nichino Group Business Overview

## Nihon Nohyaku Co., Ltd.

Head office address	19-8 Kyobashi 1-Chome, Chuo-ku, Tokyo 104-8386
Founded	November 17, 1928
Capital	10,939 million yen
Number of Employees (consolidated)	1,461
Total assets (consolidated)	88,713 million yen
Sales (consolidated)	60,033 million yen
Ordinary income (consolidated)	3,597 million yen
Profit attributable to owners of parent (consolidated)	1,717 million yen
Main Business	Manufacturing, import, export, and sales of agrochemicals, pharmaceuticals, quasi drugs, veterinary products, wood preservative agents, agricultural materials, and more
Head office and branches	<ul style="list-style-type: none"> <li>Head office</li> <li>Sapporo Branch</li> <li>Sendai Branch</li> <li>Tokyo Branch</li> <li>Osaka Branch / Tokai-Hokuriku Sales Office</li> <li>Fukuoka Branch</li> <li>Osaka Office</li> </ul>
Research Facilities	<ul style="list-style-type: none"> <li>Research Center</li> <li>Naganuma Nursery</li> </ul>
Manufacturing plant (contracted)	Nichino Service Co., Ltd. <ul style="list-style-type: none"> <li>Fukushima Plant</li> <li>Kashima Plant</li> <li>Saga Plant</li> </ul>

### Consolidated Group Companies

- Nichino Ryokka Co., Ltd.**  
 Sales of chemicals/pesticides for golf courses, home & garden, and greenification, sales of turf and turf-related materials, planning and construction of gardens and amenity areas
- Nichino Service Co., Ltd.**  
 Manufacturing and sales of agrochemicals, contracted manufacturing, storage, and transport of agrochemicals, cultivation and management of fields, real estate management
- Nichino America, Inc.**  
 Agrochemical sales, promotion, development, and registration in the USA
- Japan EcoTech Co., Ltd.**  
 Agrochemical residue analysis, chemical substance safety testing, and related activities
- Taiwan Nihon Nohyaku Co., Ltd. (Taiwan)**  
 Agrochemical sales and promotion in Taiwan
- AgriMart Corporation**  
 Sales of termite control agents/devices, pest control agents/devices
- Nichino India Pvt. Ltd. (India)**  
 Agrochemical sales, manufacturing, development, promotion, import and export in India
- Nichino Chemical India Pvt. Ltd. (India)**  
 Agrochemical sales and manufacturing in India
- Sipcam Nichino Brasil S.A. (Brazil)**  
 Agrochemical sales and manufacturing in Brazil

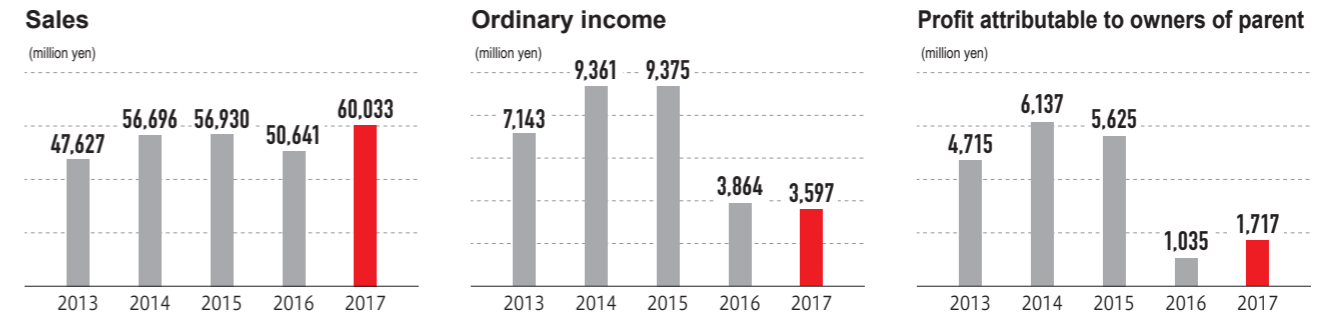
### Non-consolidated Companies

- Nichino Europe Co., Ltd. (UK)**  
 Agrochemical sales, promotion, development, and registration in Europe
- Nichino Shanghai Co., Ltd. (China)**  
 Agrochemical sales and promotion in China
- Nichino do Brasil Agroquímicos Ltda. (Brazil)**  
 Agrochemical development and registration in Brazil
- Nichino Vietnam Co., Ltd. (Vietnam)**  
 Agrochemical sales, development, promotion, import and export in Vietnam
- Nihon Nohyaku Andica S.A.S. (Colombia)**  
 Agrochemical sales, development, promotion, import and export in the Andes and Central America

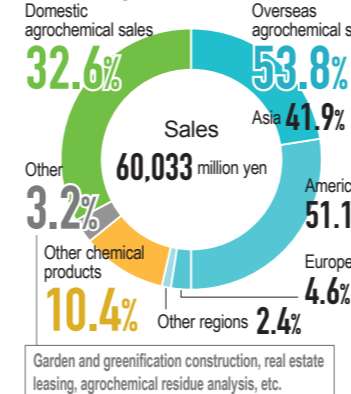
### Affiliated companies accounted for by the equity method

- Agricultural Chemicals (Malaysia) Sdn. Bhd. (Malaysia)**  
 Agrochemical sales and manufacturing in Malaysia
- Sipcam Europe S.p.A. (Italy)**  
 Agrochemical sales and manufacturing in Europe

## Financial information (consolidated)



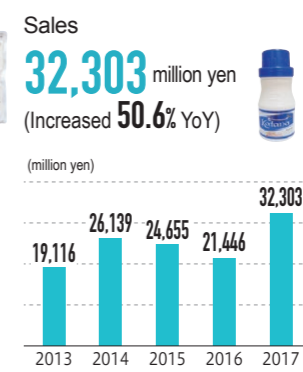
### Status by business division



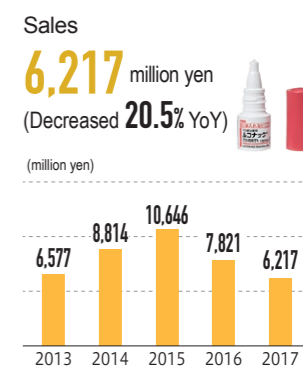
### Domestic agrochemical sales



### Overseas agrochemical sales



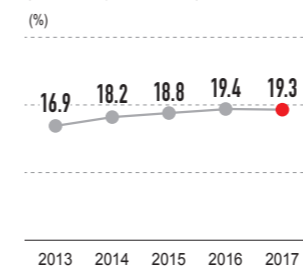
### Other chemical products



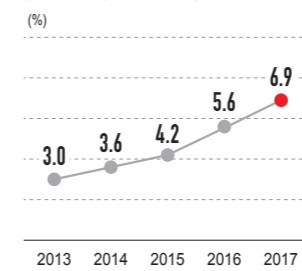
1,909 million yen (Increased 6.4% YoY)

## Non-financial information

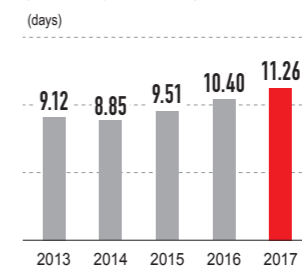
### Rate of female employees (Nihon Nohyaku Co., Ltd)



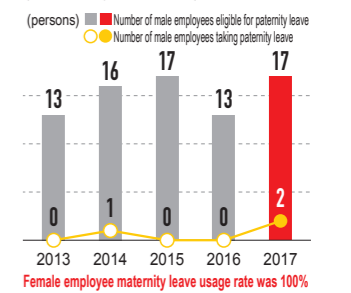
### Rate of female managers (Nihon Nohyaku Co., Ltd)



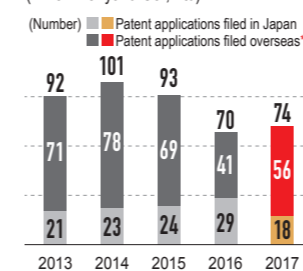
### Paid leave days used\*1 (Nihon Nohyaku Co., Ltd)



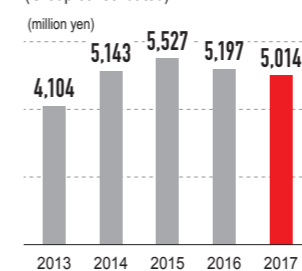
### Number of male employees taking paternity leave\*2 (Nihon Nohyaku Co., Ltd)



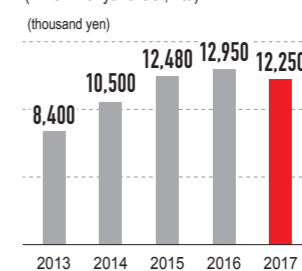
### Number of patent applications filed (Nihon Nohyaku Co., Ltd)



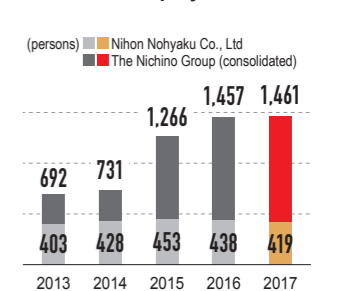
### R&D expenses (Group consolidated)



### Charitable donations (Nihon Nohyaku Co., Ltd)



### Number of employees



\*1 Applies to regular full-time and temporary full-time employees, and does not include contract employees.  
 \*2 Includes persons employed at that time who have since retired. Applies to full-time employees, and does not include contract employees.  
 \*3 Number of PCT international applications filed (by transfer country) + Paris route or Number of standard applications filed



# Commitment of Top Management

## We contribute to ensuring our responsibilities as an

Established in 1928 as the first agrochemical manufacturer in Japan, we will celebrate our 90th anniversary in November 2018.

We constantly pursue innovation to reflect change of the times while continuously contributing to society.

The global population is expected to reach 9.8 billion people by 2050. As a global company, the Nichino Group fulfills our responsibility to provide safer and more effective agrochemicals while contributing to ensuring safe and steady food supply.

Our entire Group will actively engage in CSR activities, which includes the establishment of a CSR promotion system, to help society better understand our business activities.

## Yosuke Tomoi

President

## safe and steady food supply while fulfilling agrochemical manufacturer.

### The role of agrochemicals in the development of society

Nihon Nohyaku was established in 1928 as the first agrochemical manufacturer in Japan with the objective of contributing to produce high-quality crops.

In truth, agriculture is artificial, and not the result of natural processes. A diverse array of plants exist in the natural environment but on agricultural field such as rice paddies and crop fields, a single plant species is collectively cultivated in order to achieve effective crop production. As a result, agricultural lands have unstable ecosystems and lead to environments that are highly susceptible to pests and disease. These fields are also susceptible to weed growth, which steals vital water and nutrients from crops and also prevent photosynthesis. Agrochemicals are a safe and effective means of eliminating the pests, disease, and weeds that compete with crops while also maintaining harvest volume and quality. There is data to show that if we didn't use agrochemicals, apple harvest volume would be reduced to next to nothing and crops like cabbage and cucumbers would be reduced by as much as 60%.

When our company was founded, we did not have numerous proprietary technical grades like we do now. We started out as a sales company for multinational manufacturers in Japan. With the end of WWII, the dissemination of agrochemicals enabled Japanese labor forces to focus on driving economic growth as the country shifted from primary industries to secondary and tertiary industries. With many of the youth moving to urban areas for work, highly effective agrochemicals and improved cultivation technology enabled us to operate farms with a limited number of workers. From this perspective, I believe that agrochemicals greatly contributed to the period of rapid economic growth in Japan.

### Responsibility to introduce safer and more effective agrochemicals

Then, change came to the agrochemical industry. Agrochemicals in the early days, particularly insecticides, only focused on their high efficacy so many products had strong toxicity against natural enemies of crop pests, such as frogs and spiders. This posed a threat to the survival of the small animals that consume insects. However, 1962 saw the publication of Rachel Carson's "Silent Spring", and also in 1971, the Agricultural Chemicals Control Act was revised in Japan, which required the development of low-toxicity agrochemicals. In light of this global trend, our company was also faced with the need to develop unique agrochemicals that would promote company growth.

We gradually shifted to becoming a R&D-focused company with the introduction of safer and more effective agrochemicals.

Safer agrochemicals are products that provide selective efficacy on targeted pests with a low volume and low-toxicity. As an example of such a product, we have horticultural and rice paddy insecticide Applaud(buprofezin). Applaud is an insecticide effective against plant hoppers, a rice paddy pest, as well as the whiteflies, scale insects, etc., that harm cotton and fruit trees. Applaud is a practical realization of an IGR (insect growth regulator) concept appeared in the 1980s. Plant hoppers and other pests create chitin\* and shed as they continue to grow. Applaud restricts the production of chitin to inhibit shedding, demonstrating efficacy on specific pests without harming natural predators such as birds and frogs. While not having rapid efficacy, it was proved that the use of Applaud on large surface areas has a high efficacy by preventing a concentration of pests. With this superior efficacy and characteristics, Applaud has been well-accepted and continuously used by customers. By concentrating on the development and dissemination of products which are not only safely used to human and animals but also have minimum adverse effect on natural enemies, such as the horticultural insecticides Phoenix(flubendiamide) and Colt(pyrifluquinazon), Nihon Nohyaku has been trusted by the market as a company committed to the development of safe and highly effective new solutions.

\* The main constituent of the insect exoskeleton

### Contribution to ensuring a steady global food supply

In the 1980s, Nihon Nohyaku shifted from being a formulator of technical grades developed by overseas manufacturers to be sold in Japan, to a R&D-focused manufacturer. During this period, we also began overseas expansion by providing sales licenses in America and Europe. In the 1990s, foreign manufacturers sought to increase their presence in Japan. They have begun the direct sales of products they originally licensed to Japanese formulators. This threat to their survival forced Japanese manufacturers to reform their agrochemical businesses.

In 2002, Nihon Nohyaku expanded our human resources and products portfolio by acquiring the agrochemicals business of Mitsubishi Chemical Corporation and the copper products business of Tomono Agric Co., Ltd. We further expand our portfolio by investing approximately 10% of annual net sales to R&D. These movements laid the foundation for our full-fledged global business expansion based on the development of proprietary products and own sales



## I The Nichino Group Vision

# Nichino Group- Growing Global

## To become an outstanding globally competitive group

We contribute to the future of mankind through protecting crops and improving our living environment by further improvement of our technology that has arisen through agrochemical business.

We contribute to society through supporting agriculture by providing new agrochemicals & technology continuously

To be an R&D focused company: No.1 in Japan and Top10 in the world in the future (Sales over 200 billion yen)

Ideal business model in 2021 and a passing point towards the future

- To be a company where every employee has high motivation, pride and will for their work
- To achieve the target sales of 100 billion yen
- To globally deploy high value-added new products, existing proprietaries and high quality generics
- To be a leading agrochemical company in the market share, business scale & profitability by having solid domestic base
- To be a globally outstanding company by expanding bases for development, production & sales in worldwide major market

organization. In 2013, after much deliberation regarding our vision for the future, we set the Group vision "Growing Global to become an outstanding globally competitive group", which aims to challenge ourselves to engagement in expanding global markets. This vision is rooted in our corporate philosophy of contributing to a safe and steady food supply. This vision also meant securing a significant R&D budget for the continuous introduction of new technical grade was critical to success. As one of the ways to continue our existence as an R&D-focused company, we decided to expand our operational capacity and grow globally.

The global population is currently 7.6 billion people and this is expected to increase by 28% to 9.8 billion people by 2050. At the same time, the surface area of agricultural field dedicated to food production, although projected to grow only in certain regions such as Brazil, where they can convert plains field into agricultural field, most regions have a limited amount of land that can be used for agricultural cultivation and there is little room for expansion. At a UN summit in 2015, SDGs (Sustainable Development Goals) were adopted as international goals to be achieved by 2030. One of these goals is the elimination of starvation. For example, in India, where there is a need to promote increased food production, rice is being cultivated on some 40 million hectares, more than 25 times the 1.5 million hectares of rice production field in Japan. However, agrochemicals are only used on some 50% of that land in India. Amid a growing global population, it will prove vital that increase in harvest by securing water resources and breed improvement, as well as increase productivity by protecting crops from insect pests and diseases. As such, we believe Nihon Nohyaku has a major role to play in the global society.

## Continuing to make contributions as a global company

Early in our history, Nihon Nohyaku actively engaged in overseas markets by establishing manufacturing and sales subsidiaries in Asia. In 1997, we established Nihon Nohyaku America, Inc. (currently Nichino America, Inc.) and other subsidiaries as we focused on expanding our business model based on the direct sales of proprietary safe and highly effective agrochemicals. Currently, overseas sales account for more than 50% of consolidated net sales. This is due to moves such as the acquisition of Hyderabad Chemical Ltd. in India (currently: Nichino India Pvt. Ltd.) in 2015 and the addition of Sipcam Nichino Brasil S.A. in Brazil as a consolidated subsidiary in 2016. Through a global structure that increases synergy and strengthens manufacturing and sales structure for proprietary products, we are able to increase profitability by developing new products more in line with market needs and reducing costs in manufacturing generic products.

In order for Nihon Nohyaku to fulfill our mission of ensuring a safe and steady food supply, we must continue to launch products that are superior in safety and efficacy. At the same time, developing safe and effective products also requires huge investment and long development period. At Nihon Nohyaku, in addition to traditional agrochemicals, we also are working on the development of chemicals that improve resistance to environment stress factors that can present plant growth such as drying due to insufficient water, low temperatures, and heat. Making continued contributions to a stable global food supply requires that we increase our profitability and expand the size of our business. With this in mind, we set our mid-term business plan "Advance to Growing Global 2018" through FY2018, in which we outline goals for achieving 100 billion yen in annual net sales by FY2021, becoming No.1 in Japan and becoming a global Top10 R&D-focused company in the agrochemical sector.

## I Mid-Term Business Plan

### 1 Mid-Term Business Plan

# Advance to Growing Global 2018 (2016-2018)

(AGG2018)



### 2 Progress of the Medium-Term Business Plan

- In India, Nichino India Pvt. Ltd. (formerly Hyderabad Chemical Pvt. Ltd.) launched sales of the insecticide flubendiamide, launched exports of the isoprothiolane technical grade (fungicide) and the buprofezin technical grade (insecticide), and begun providing the buprofezin technical grade to existing sales companies in India.
- In Brazil, Sipcam Nichino Brasil S.A. launched sales of buprofezin (insecticide) and fenpyroximate (miticide). The company became a consolidated subsidiary and launched full-scale sales of the herbicide orthosulfamuron.
- In Japan, Major (wide spectrum fungicide) was launched to market (July 2016) and we completed (November 2015) the registration application process for Parade (wide spectrum fungicide).

## To our stakeholders

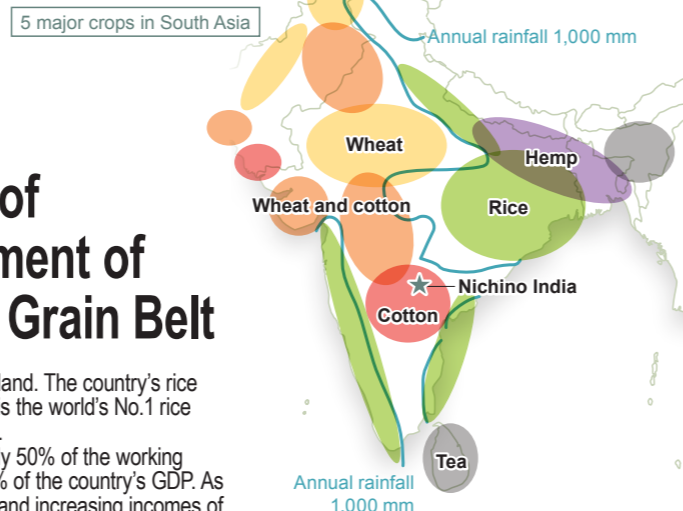
For several decades, Nihon Nohyaku has worked to earn the trust of all our stakeholders, including customers, society, shareholders, and our employees. As a manufacturer of agrochemicals, chemicals, pharmaceuticals, and animal health care products, through our Responsible Care activities we work to contribute to the environment, health, and safety. To reduce the impact our products have on the environment, our passionate and dedicated employees work daily on research and development. We also conduct enlightenment activities to promote the safe use of agrochemicals and engage in social contribution activities, including supporting the next generation by providing scholarships to students at agricultural colleges.

We are promoting diversity by setting a goal of having females account for at least 10% of managerial positions. In FY2017, we reached 6.9% and even marked the promotion of a female to the position of General Manager. We also are hiring foreign nationals and developing internal systems to promote flexible workstyles. We work to ensure adherence to our

Corporate Governance Code. In addition to engaging with investors and other stakeholders, we also hold seminars on agriculture and the agrochemical industry with the goal of receiving opinions from outside directors that will contribute to company management.

In November 2018, we will celebrate our 90th anniversary. As the first agrochemical manufacturer in Japan, Nihon Nohyaku has evolved into an R&D-focused company that is committed to introducing safer and more effective agrochemicals. By continuously implementing reforms in line with changes in society, we finally have grown into a company that is able to fulfill our mission of ensuring a safe and steady global food supply. Year by year, developing new agrochemicals requires more time and costs but we will effectively distribute management resources to ensure our ability to continue contributing to a sustainable society and support Sustainable Development Goals. We would like all of our stakeholders to expect future activities of the Nichino Group.





# Contributions to the Modernization of Agriculture and Economic Development of Farmers in India which is the World Grain Belt

Nearly half of India's land mass, some 150 million hectares, is used as agricultural land. The country's rice and wheat production volume are second to the world only to China (2014) and India is the world's No.1 rice exporter (2012, 2013), making India one of the world's largest grain-producing nations.

On the other hand, despite a population of approximate 1.3 billion people and nearly 50% of the working population being engaged in the agricultural industry, agriculture only accounts for 15% of the country's GDP. As such, the Indian government is advancing initiatives aimed at modernizing agriculture and increasing incomes of farmers.

Nihon Nohyaku has long supported efforts in India to make agriculture more efficient through our efforts to help disseminate agrochemicals. We later adopted the policy aimed at increasing our contribution to India's agriculture industry by establishing our own production and sales structure and conducting enlightenment activities for Indian markets to promote the appropriate use of agrochemicals. Under this policy, in 2015 we acquired India's Hyderabad Chemical Ltd. and made the company a consolidated subsidiary. In 2017, we changed the company's name to Nichino India Pvt. Ltd. in hopes of increasing brand recognition of the Nichino Group.

Mitsuhiro Kishida, who served as president of the company, and Toshitomo Tanaka, who as General Manager of Sales Department, Asia, has spent many years involved in the Group's business in India, discuss past initiatives and future direction for the market.

**Reference** JMAFF "Status of Agriculture, Forestry, and Fisheries in India" - Updated July 3, 2017  
[http://www.maff.go.jp/j/kokusai/kokusei/kaigai\\_nogyo/k\\_gaiyo/ind.html](http://www.maff.go.jp/j/kokusai/kokusei/kaigai_nogyo/k_gaiyo/ind.html)



With farmers in India (January 2018)

## Contributing to a steady global food supply by developing the Indian agriculture industry

**Kishida** - Nihon Nohyaku's mission is to disseminate the agrochemical technology we have developed over the years around the globe in order to contribute to increased crop production efficiency, thereby responding to the global food demand caused by explosive population growth. By providing agriculture technology to India, which has a growing population, we can contribute to the modernization of India's agriculture production. Also, contributing to agriculture industry in India, one of the world's largest grain exporters, will allow us to address global food demand. Thus far, we have sold agrochemicals developed in Japan through local agrochemical companies but we recently identified strategy to head to India and to get to know the market so that we can increase both our contribution level and our own presence. We began this by acquiring Hyderabad Chemicals Ltd., a company located in the city of Hyderabad on the Deccan Plateau. We chose this company for the ease of aligning corporate cultures with Nihon Nohyaku as well as for their advanced production technology and sales network. We later changed the company name to Nichino India.



With farmers in India (October 2017)

**Tanaka** - Nihon Nohyaku's history of business in India goes back nearly 30 years. India and Japan have different climates, soil, crops, and its variety, pests and diseases. Also, selling agrochemicals in India requires agrochemical registration, a process that involves study of harmful effect on crops, crop residue study, and soil residue study in India. We launched Fuji-One, a rice paddy pest control agent, in India in 1998, but actual development and registration took nearly 10 years before launching. We partnered with local agrochemical companies to begin supplying technical grades of active ingredients for formulation in India. For sales, we emphasized working together to provide technological advisory regarding

appropriate usage amounts and methods. Indian crops, particularly rice, tea, and grapes, are exported to various countries. In developed nations such as the USA and EU countries, they check residual amounts of agrochemicals at the border. If agrochemical residual amounts exceed criteria, the produce is shipped back to India. No matter how superior an agrochemical is, use exceeding stipulated amounts or frequency can exceed desired efficacy and increase the risk of residual amounts in crops. This would make the crops ineligible for export, which would mean lost revenues for the farmers. Technological advisory to ensure the appropriate use of agrochemicals is vital to improving farmer's income.

## The proper use of new agrochemicals will lead to the development of India's agriculture industry

**Kishida** - Nichino India actively holds farmer seminars. The goal is to get farmers to purchase our products and use them correctly. However, we also provide education on general matters that promote the safe use and handling of agrochemicals. This includes instructing farmers to store agrochemicals in locked locations and to wear goggles, a hat, and mask when spraying agrochemicals.

**Tanaka** - The farming community in India is based on a pyramid type of hierarchal structure. There are a few advanced farmers followed by middle-class farmers, and below them are the general farming populations. Compared to when we began doing business in India 30 years ago, proper agrochemical use has become more prevalent but there is still much need for further education. One thing I learned from spending time there was that even if we technological advisory to the wealthy farmers who own the land, the people doing the actual spraying are the employees working the land. I think in the future we will need to conduct educational activities for those employees as well.



The farmer seminars

**Kishida** - Nichino India aims to build a network that would enable them to provide information related to the safe use of agrochemicals directly to the individuals using Nihon Nohyaku products. Proper use will result in the production of high-quality crops and prevent the overuse that can ruin an entire harvest. In the event, proper use is more profitable.

**Tanaka** - Currently, conditions in India are similar to Japan's period of rapid economic growth. Social wealth is growing and wages are increasing, causing working populations to flood to urban areas and resulting in a decline in farm laborers. Such conditions have brought about an age that requires more efficient agriculture, an age in need of new agrochemicals. In most cases, new agrochemicals are higher in price but provide greater efficacy in comparison to conventional generics. This means a reduction in spraying frequency and thus reduces labor expenses, which is more efficient.

**Kishida** - Looking at the structure of India's industry, the majority of the country's GDP is represented by IT and finance. Farm laborers represent nearly 50% of the country's overall working population but agriculture, forestry, and fisheries only contribute some 15% to the country's GDP. To improve agricultural productivity, in February

2017 the Indian government introduced policies for doubling farming salaries by 2022. The government is also supporting the appropriate distribution of agrochemicals that are safe and that contribute to increased yield.

## Enhancing the agriculture value chain in response to the national policy of Make in India

**Kishida** - In addition to promoting agricultural development, the Indian government also introduced the Make in India strategy, a plan to develop the manufacturing industry, which accounts for nearly 25% of the GDP. This strategy involves promoting the importing of raw materials without importing finished products and increasing added value through the domestic manufacturing of these raw materials into final products. India's manufacturing industry, including the agrochemical industry, is on the cusp of major change. The Nichino Group must stay ahead of these changes and strengthen our agrochemical value chain. Nihon Nohyaku will build a global structure for taking the technology seeds researched and developed in Japan and transfer them to Nichino India from an early stage in order to grow this technology within India.

**Tanaka** - India is also seeing changes in food culture and distribution. In the past, people mainly ate rice and beans, and it was thought that being overweight was a symbol of being wealthy. However, youths today prefer slim figures in the same was as people in western countries, which is driving health-conscious decisions. This is creating greater demand for fruit and vegetables, which are viewed as healthier.

At the same time, there is data to suggest that due to an under-developed refrigerated distribution network, nearly 40% of produce that cannot be preserved is not being delivered to consumers and ends up as waste. We believe we must look beyond crop production and expand our vision to include the entire food chain. By viewing all of agriculture as a business opportunity, we will seek to actively expand our business opportunities.

### Toshitomo Tanaka

General Manager of Sales Dept., Asia, Overseas Division



### Mitsuhiro Kishida

Executive Officer, Division Manager of Production Division (previously Nichino India Pvt. Ltd. President)





# Corporate Governance

## 1. Corporate Governance Guidelines (Basic Approach)\*

Nihon Nohyaku aims to be a company that earns the trust of its shareholders, customers, employees, business partners, local communities, and various other stakeholders. To this end, the company shall endeavor to constantly maintain an optimal system of corporate governance in line with the basic approach set forth below, believing that it will facilitate sustainable corporate development and enhance medium- to long-term corporate value.

1. The Board of Directors shall establish and uphold the Basic Policies and Action Charter, which every officer and employee of the company shall hold in common and which shall govern every business activities of the company.
2. Nihon Nohyaku shall honor the rights of its shareholders. It shall endeavor to prepare an environment wherein shareholders can exercise their rights appropriately, and to secure substantive fairness for shareholders.
3. Nihon Nohyaku recognizes the importance of its social responsibility and public mission. The company shall work with stakeholders as appropriate in order to foster a corporate culture conducive to wholesome business operations underlined by steadfast self-discipline.

4. In order to earn the trust of its stakeholders and the community and further enhance its corporate value, Nihon Nohyaku shall set compliance with laws, ordinances, and corporate ethics as its cornerstone, and aim to ensure transparency and fairness in decision-making, and construct an aggressive system of corporate governance to facilitate swift and bold decision-making that is premised on such.
5. Nihon Nohyaku recognizes the importance of the ecological and social challenges associated with sustainability. The company shall work to fulfil its social responsibility as a company that deals in chemical substances, and enhance its corporate value.
6. Nihon Nohyaku shall ensure a diverse balance of viewpoints and values, and pursue diversity with a view to achieving sustainable development.
7. In order to prepare a foundation for constructive dialogue with stakeholders, Nihon Nohyaku shall separately establish a Disclosure Policy; moreover, the company shall promote appropriate disclosure of company information, including information on non-financial operations, and transparency in its corporate management.
8. Nihon Nohyaku shall engage in constructive dialogue with stakeholders so as to contribute toward its sustainable development and the enhancement of its medium- to long-term corporate value.

We share these Guidelines throughout the entire the Nichino Group.

\* Nihon Nohyaku Corporate Governance Guidelines (drafted: November 13, 2015; enacted: December 22, 2015) (Excerpt)  
[http://www.nichino.co.jp/corporate/page\\_10060.html](http://www.nichino.co.jp/corporate/page_10060.html)

## 2. Corporate Governance Diagram

We have established “Basic Principles of the Nichino Group” as the base for all our activities. On the basis of the “Nichino Group Action Charter” and the Group Vision, both in accordance with the basic principle, we have established a corporate governance system to become a group of companies earning the trust of various stakeholders (see diagram below).

In establishing the system, we complied with the meaning and spirit of the corporate governance code, which has been incorporated into the Securities Listing Regulations of the Tokyo Stock Exchange in Japan, and established the “Nihon Nohyaku Corporate Governance Guidelines” to follow (November 2015).

### Corporate Governance Diagram



### Message from our External Directors



**Iwao Toigawa**

External Director  
 (Governance Committee  
 Chairman)

### Activity Report from Independent Officers

We are promoting our growth strategy to achieve our Group Vision of being an R&D-focused company with net sales exceeding 200 billion yen and positioning ourselves as a global Top 10 company.

To achieve these goals, it will be vital that we further improve our corporate governance structure in order to ensure that our business activities give due consideration to the interests of our stakeholders. This makes the role of Independent Officers more important than ever.

To contribute to the company’s sustainable development, we strive to provide the Board of Directors with advice and recommendations backed by expertise and experience.

Independent Officers actively exchange opinions and engage in close communication among ourselves concerning the status of and issues facing the company, and actively express opinions from perspectives and positions differing from those of internal officers.

Our activities are materialized in discussions and reports at the company’s Board of Directors, which we work to ensure are easily comprehensible for External Directors (the company also ensures we are able to freely discuss the management of the Board of Directors).

As members of the Governance Committee, the Advisory Body to the Board of Directors, we provide opinions and recommendations on the selection of director candidates, on executive salary, and conduct efficacy evaluations for the Board of Directors.

We are committed to contributing to the company’s efforts to earn the trust of stakeholders and society.





## What is Responsible Care (RC)?

RC encompasses voluntary activities wherein each company handling chemical substances secures “the environment, safety and health” and publishes the results of its activities, maintaining a dialogue and communication with society regarding all its processes, ranging from R&D through manufacturing, sales, logistics, use, and final consumption, to the disposal and recycling of the chemical substances.

This is an initiative that the global chemical industry is integrally promoting to safely manage chemical products over their life cycles through its activities, such that chemical products can contribute to improving the quality of life and sustainable development.

We have 6 items of implementation for Responsible Care, namely “RC codes”, consists of “Environmental Protection”, “Occupational Safety and Health”, “Process Safety /Disaster-Prevention”, “Logistics Safety,” “Product Stewardship (Chemical Materials and Product Safety)” and “Communication with Society” in Japan, we work to improve activities through the continued implementation of the PDCA (Plan→Do→Check→Act) cycle.

Together with our domestic Group companies, we are engaging in the Responsible Care (RC) activities being promoted by global chemical industries.

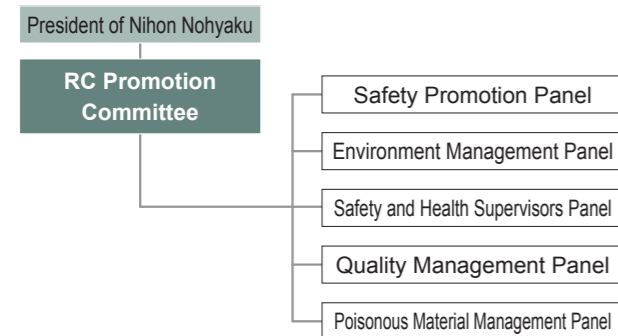
Our Group has established RC Mid-Term Targets and are conducting planned activities based on RC promotion policies established by each of our domestic companies.



## 1. RC Promotion Diagram

Our RC activities are conducted under our Corporate Governance System. The RC Promotion Committee, which also includes participation from the representatives of four of our domestic consolidated subsidiaries, governs activities for the entire the Nichino Group. Specific activities are promoted by five panels based on specific RC categories (figure below). We are a member of the JCIA RC Committee and we have registered four domestic consolidated subsidiaries with the committee as affiliate companies. The Environmental Safety Department of Nihon Nohyaku conducts annual RC audits of each plant, including those four companies.

### Responsible Care Organization Diagram



## 2. RC Global Charter

In 2014, we became a signatory to the RC Global Charter and are integrating the initiatives outlined in the Global Charter into the RC Mid-Term Targets for the Nichino Group. As of the end of January 2018, the RC Global Charter has been signed by 578 companies around the world. The ICCA\* maintains a list of signatories on its website.

\* International Council of Chemical Associations

### RC Global Charter



(Original)

## 3. Management System

The Nichino Group has acquired the following certifications for the management system and is working to continuously improve its operations.

International Standards	Company name (applicable office)
ISO9001 (Quality Management System)	<ul style="list-style-type: none"> <li>Nichino Service Co., Ltd.</li> <li>Hyderabad Chemical Pvt. Ltd.*1</li> <li>Nectar Crop Sciences Pvt. Ltd.*2</li> <li>Sipcam Nichino Brasil S.A.</li> </ul>
ISO14001 (Environment Management System)	<ul style="list-style-type: none"> <li>Nichino Service Co., Ltd.</li> <li>Hyderabad Chemical Pvt. Ltd.</li> <li>Nectar Crop Sciences Pvt. Ltd.</li> <li>Sipcam Nichino Brasil S.A.</li> </ul>
OHSAS18001 (Occupational Safety & Health Management System)	<ul style="list-style-type: none"> <li>Nichino Service Co., Ltd.</li> <li>Hyderabad Chemical Pvt. Ltd. (Balanagar)</li> <li>Nectar Crop Sciences Pvt. Ltd. (Humnabad)</li> <li>Sipcam Nichino Brasil S.A.</li> </ul>
ISO17025 (General requirements for the competence of testing and calibration laboratories)	<ul style="list-style-type: none"> <li>Japan EcoTech Co., Ltd. (Osaka Analysis Center)</li> </ul>

\*1 Currently Nichino India Pvt. Ltd.

\*2 Currently Nichino Chemical India Pvt. Ltd.

## 4. RC Mid-Term Targets and Activity Results/Plans

### 1) About the Nichino Group RC Mid-Term Targets (FY2016-2020)

RC Activities	RC Mid-Term Targets
General	<ol style="list-style-type: none"> <li>Maintain and expand Quality, Environment, and Occupational Safety &amp; Health Management Systems</li> <li>Enrichment and expansion of RC activities</li> <li>Education of RC to overseas sites, introduction of RC methods into plants which has not introduced ISO management system yet</li> </ol>
Environmental Protection	<ol style="list-style-type: none"> <li>Reduction of 1% or more per year of energy consumption unit*1 and reduction of CO2 emissions by promoting energy saving</li> <li>Participation in Fun to Share*2 activities of the Japanese Ministry of the Environment (JME)</li> <li>Maintain and expand zero emissions*3</li> <li>Green purchasing rate of 95% or higher for office consumables and designated products</li> <li>Strengthening, maintain and expand green procurement standards for raw materials and ingredients</li> <li>Continuing initiatives for a low-carbon society (plan based on status of nuclear plants and government policy)</li> </ol>
Occupational Safety & Health, Process Safety & Disaster Prevention	<ol style="list-style-type: none"> <li>Achieving zero traffic accident during work/commuting, and maintaining zero accident causing lost worktime</li> <li>Maintaining zero serious accident on the production equipment</li> <li>Visualization of risk assessment methods</li> </ol>
Logistics Safety	<ol style="list-style-type: none"> <li>Continuing zero serious logistics accident (scattering/spillage)</li> <li>Enhancement of logistics conference with logistics companies</li> </ol>
Product Stewardship (Chemical Materials & Product Safety)	<ol style="list-style-type: none"> <li>Develop environmental and safety-conscious products and field testing, considering environment preservation and worker safety</li> <li>Centralized management of safety information on chemical substances and appropriate provision to domestic and overseas subsidiaries</li> <li>Improvement of product quality and thorough management</li> </ol>
Communicating with Society	<ol style="list-style-type: none"> <li>Creation of RC reports (in Japanese and English) on level with CSR reports and receiving third-party validation</li> <li>Establishment of comfortable environment around business sites interacting and cooperating with the local communities</li> <li>Participation in and promotion of activities for towards VISION 2025 of Japan Crop Protection Association (JCPA)</li> </ol>

\*1 An index showing the efficiency of energy consumption that divides annual energy consumption by figures related to business (for example production amount, office surface area, sales volume, etc.). A lower energy consumption unit indicates better energy consumption efficiency.

\*2 National public movement to address global warming promoted by JME.

\*3 The final landfill amount of waste shall be 1% or less of the volume generated.

## 2) FY2017 Activity Results and Internal Evaluation

We actively engaged in activities aimed at achieving our Group Vision and the 2nd year benchmarks for our RC Mid-Term Targets.

RC Activities	FY2017			Page
	Major topics	Results	Evaluations	
General	1. Information exchange related to integrated RC activities into overseas plants	1. Visited Hyderabad Chemical Pvt. Ltd. (former name) to provide information on RC activities.	☀️*1	—
Environmental Protection	1. Promoting efficient energy consumption Promotion of energy saving, reduction of energy consumption unit 1% or more per year, reduction of CO <sub>2</sub> emissions and considering evaluation method for energy consumption efficiency 2. Registration for national movement "Fun to Share" being promoted by JME 3. Promote waste reduction, Maintenance and expansion of zero emissions 4. Green Purchase Rate of 95% or higher 5. Improvement of green procurement rate under new standards 6. Expansion of in Locavore*2 activities in order for CO <sub>2</sub> reduction and energy conservation	1. Energy consumption unit: Nihon Nohyaku (-3.4%), Nichino Service (-6.3%) CO <sub>2</sub> emissions: Total for Nihon Nohyaku and Nichino Service (+3.8%). Evaluated method for correcting external factors related to fluctuations in the consumption rate at the Research Center. 2. Registered by sites and facilities of the Nichino Group in Japan during FY2017. 3. Waste amount increased Zero emissions: Nichino Service Saga Plant has continued to meet the goal for over 10 years, Kashima Plant and Fukushima Plant for the fourth consecutive year. 4. Green purchasing rate at 99.3% (previous year: 97.4%) 5. Green procurement rate at 94.6% (previous year: 91.9%) 6. Questionnaires continued on "Number of times of one pot dish" and "Energy conservation that can be done at home"*3.	☁️	19-22
Occupational Safety & Health, Process Safety & Disaster Prevention	1. Achieving zero accident causing lost worktime, and achieving zero traffic accident during work and commuting 2. Maintaining zero serious accident on the production facilities 3. Conducting comply of risk assessment corresponding to the revised Occupational Safety and Health Law in Japan	1. Achieved zero accidents with workdays lost. Zero automobile accident (including minor damage due to flying objects) has not been achieved (previous year 47 accidents→38 accidents). 2. Zero serious accident in production facilities has been achieved continuously. 3. The information on risk assessment method of chemical substances has been provided, and risk assessment has been conducted at each business site in Japan.	☔️	23-25
Logistics Safety	1. Continuing zero serious accidents (scattering/spillage) in logistics 2. Strengthening of communication with logistics companies 3. Continuation Yellow Cards and White Cards 4. Promotion of modal shift *4	1. Continue achieving zero serious accidents caused by scattering or spillage has remained to be zero. 2. Information exchange meetings have been held among the SCM Department of Nihon Nohyaku, each Nichino Service Plant and related logistics companies. 3. Continued all logistic companies and drivers Yellow Cards and White Cards which includes product safety information. 4. Increased small-lot shipments despite focus on modal shift.	☀️	26
Product Stewardship (Chemical Materials & Product Safety)	1. Continue effort to eliminate PRTR*5 inert ingredients in new formulated products Substituting 50% of NPE*6 in existing products (We already stopped using NPE to a new formulated products) 2. Continue of the aggressive revision of MSDS*7 to SDS*7 under GHS*8 3. Promote SDS information provision and sharing internally and with domestic and overseas subsidiaries in the Nichino Group	1. 4 new products, not containing NPE have been launched. The NPE replacement study continued. 2. Continued establishment of SDSs under GHS for export. Collaborated with overseas subsidiaries with updating of SDSs under GHS for their products, and creation of SDS-related documents. 3. Provided SDS and other environmental and safety information to domestic and overseas affiliates. Continued updating of SDS under GHS	☀️	26-28
Communicating with Society	1. Creation RC report 2017 with a view to CSR report and creation English version of RC report 2. Investigating the planing for JCIA inspection on RC activities in each site or CSR report 3. Establishment of environmental maintenance and improvement around business sites interacting and corroborate with local communities 4. Participating and promoting activities towards Japan Crop Protection Association (JCPA) VISION 2025	1. Issued RC report (April 2017) and English version of RC report (September 2017). 2. Planned of JCIA inspection on CSR report 2018(March 2018). 3. Each business site supported local community welfare and community events. 4. Participated in each committee of JCPA and conducted education ensure compliance and proper use of agrochemicals.	☀️	29-32

\*1 Internal evaluation of actual results: ☀️ Achieved ☁️ Partially achieved ☔️ Not achieved  
 \*2 A composite word with the term "Local" and the term "-vore (meaning an animal that eats something)", meaning "people who eat local food". It indicates an activity that leads to a reduction of CO<sub>2</sub> when combined with "local consumption of local products" and expanded consumption of "domestic agricultural and marine products".  
 \*3 Questionnaires based on the "Lifestyle check 25" of "Family Energy Saving Dictionary (2012 version)" of the Energy Conservation Center, Japan, including our original question items.  
 \*4 Switching the transportation of raw materials and products from trucking to rail freight and transshipment with less CO<sub>2</sub> emissions.  
 \*5 Pollutant Release and Transfer Register  
 \*6 Polyoxyethylene nonylphenyl ether  
 \*7 Material Safety Data Sheet, Safety Data Sheet  
 \*8 Globally Harmonized System of Classification and Labelling of Chemicals

## 3) FY2018 Activities

RC Activities	Major topics
General	1. Consideration of RC activities with focus on SDGs
Environmental Protection	1. Promoting energy conservation (goal: Reduction of 1% or more per year of energy consumption unit), Continuation of study on the calculation methods for consumption unit, continuation of the evaluation of consumption unit based on the form of business, and reduction of CO <sub>2</sub> emissions. 2. Maintain green purchasing rate of 95% or higher, improving green procurement rate 3. Promotion of 3Rs* for waste reduction, maintainance and expansion of zero emissions 4. Continuation of initiatives for a low-carbon society (Locavore), Consideration of Fun to Share initiatives 5. Grasp the energy conservation goals of the local governments group companies are located and the status of energy conservation activities of overseas group companies and its national goals of energy conservation
Occupational Safety & Health, Process Safety & Disaster Prevention	1. Maintaining zero accident with workdays lost, conducting of education and training aimed at achieving zero traffic accidents during work and commuting 2. Conduct maintenance and inspections to keep zero serious accidents at production facilities 3. Visualization of risk assessment corresponding to the revised Occupational Safety and Health Law
Logistics Safety	1. Conduct of training to maintain zero serious accident caused by scattering or spillage 2. Strengthening of communication with logistics companies: holding regular logistics conferences with transport and warehouse companies 3. Continuing to provide of Yellow Cards and White Cards 4. Continuing to promote modal shift
Product Stewardship (Chemical Materials & Product Safety)	1. Continuing effort to eliminate PRTR inert ingredients in new formulated products. Substituting 50% of NPE in existing products (We already stopped using NPE to new formulated products.) 2. Continuing of appropriate management of chemical substances, conduction necessary education and training 3. Conduct risk assessment, Continuing of measures to prevent accidents due to chemical substances 4. Provision and sharing of SDS information internally and with domestic and overseas subsidiaries 5. Continuous providing information on new regulations of chemical substances
Communicating with society	1. Continuing of participating in community activities, Collaboration with the local community and improving the environment condition around the establishment 2. Expanding RC activities to overseas subsidiaries Investigation on development of activities to overseas group companies (RC information provision, surveillance on environment and occupational safety, etc.) 3. Issuing CSR report 4. Receiving JCIA inspection for CSR report 2018 5. Participating and promoting activities towards VISION 2025 of JCPA (for example voluntary improving product labels)

\* Stands for Reduce, Reuse, and Recycle of waste.

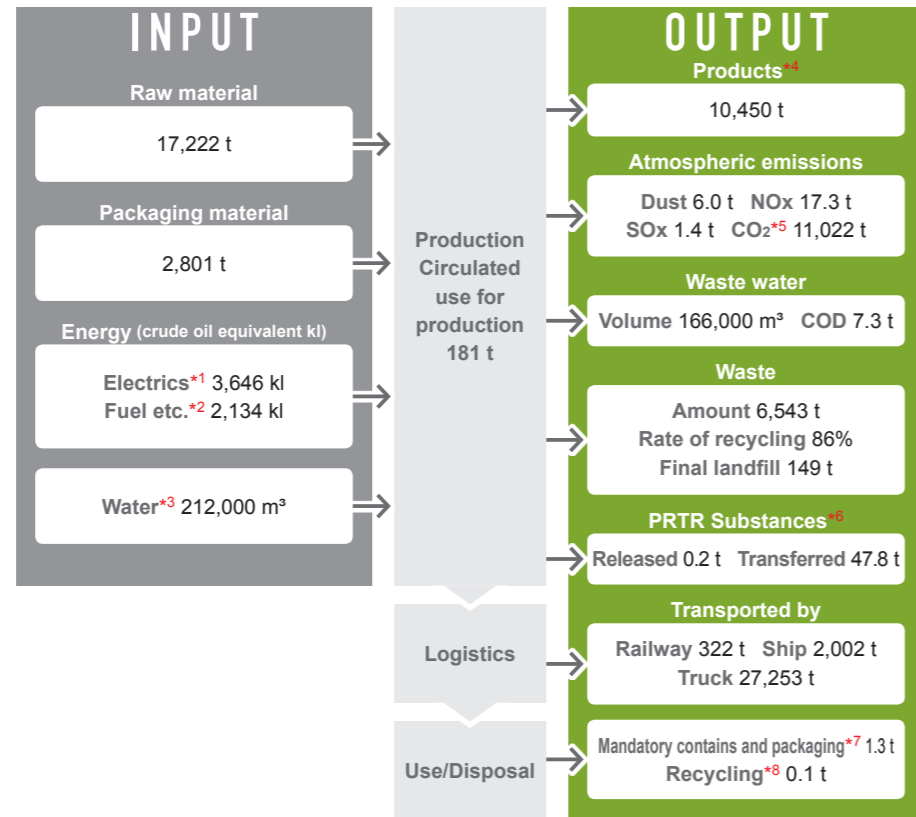




## 1. Input of Resources and Energy and Output of Products and Environmental Load

The following shows the amounts of raw materials, energy and water used in our business activities, along with the matters discharged in the process of production /products consumption and disposal.

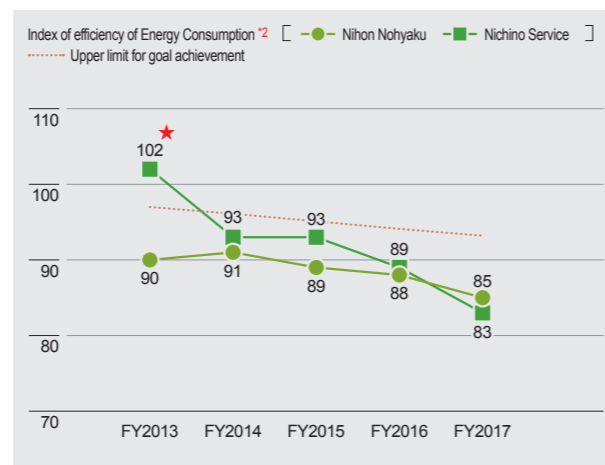
- \*1 Purchased electricity calculated as crude oil equivalent.
- \*2 Amount of heavy oil, light oil, kerosene, gasoline, city gas, LP gas, and purchased steam are expressed in crude oil equivalent.
- \*3 Total sum of tap water, well water, and industrial water for Research Center, Osaka Office, and Nichino Service Plants.
- \*4 Product amount = (technical grade production amount) + (formulation production amount) - (technical grade amount used for formulation production)
- \*5 Used emission factors were referred to the Act on Promotion of Global Warming Countermeasures.
- \*6 Includes data for Japan EcoTech (Fukushima / Osaka Analysis Center) (Aggregation period: April 2016 - March 2017).
- \*7 Containers and packaging amount of agrochemical products for home and garden use sold during the 2017 fiscal year.
- \*8 Amount consigned to the Japan Containers and Packaging Recycling Association



## 2. Environmental Impact

### 1) Efficiency of Energy Consumption

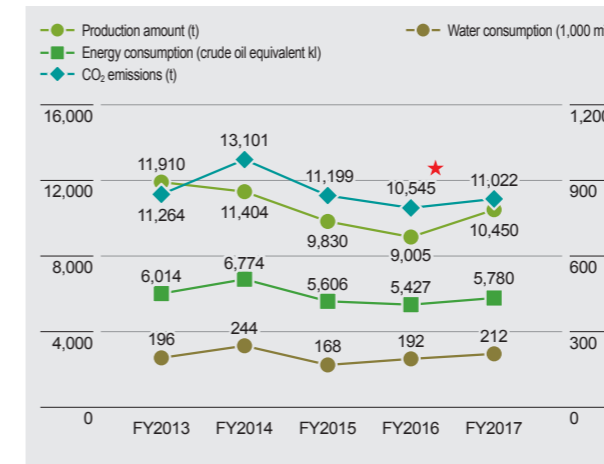
Nihon Nohyaku and Nichino Service are promoting energy conservation with the goal of lowering our energy consumption unit by 1% or more compared to the previous fiscal year. During FY2017, both companies achieved this goal (Nihon Nohyaku 3.4% reduced and Nichino Service 6.3% reduced), indicating favorable progress in our energy conservation efforts. In particular, the five-year average of year on year change of energy consumption unit at Nichino Service reached the voluntary benchmarks defined by the government. As a result, Nichino Service was officially recognized for excellence in energy conservation (S Class) for the second consecutive year under the JMETS\*1 Business Classification System. We also began conducting efficiency of energy consumption evaluations at other domestic Group companies as part of efforts to optimize energy consumption.



\*1 Japanese Ministry of Economy, Trade and Industry  
\*2 Index for each fiscal year when the efficiency of energy consumption for FY2010 is set as 100.

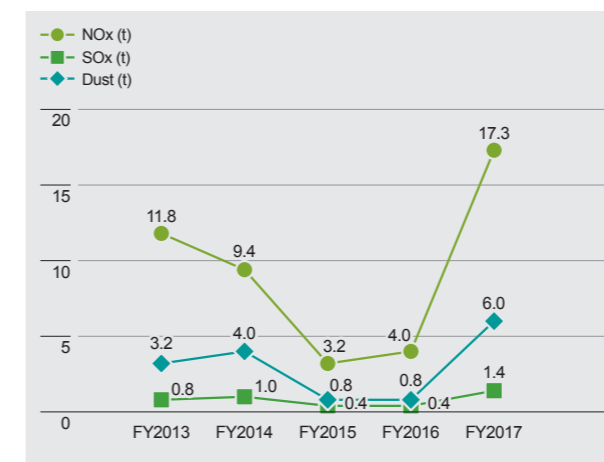
### 2) Status of Energy Consumption, CO<sub>2</sub> Emissions, Water Consumption, and Waste Water

Due to a significant increase in production amount, energy consumption (crude oil equivalent) increase by 6.5% from the previous year and CO<sub>2</sub> emissions increased by 3.8%. Also, water consumption increased by 10.3% from the previous year due to the increase in production amount. The 166,000 m<sup>3</sup> of waste water shown in the figure represents a 6.8% increase over the previous year and the COD pollutant load of 7.3 t was an increase of 41.7%.



### 3) Emission to Atmosphere

Nitrogen oxides (NOx) emissions derived from exhaust gasses from boilers, etc., increased by 13.3 t from the previous year due to a major increase in facility operation but we adhered to exhaust level standards. Sulfur oxides (SOx) and dust emissions also increased but both were at relatively low levels.



### 4) Waste

#### (1) Amount of waste

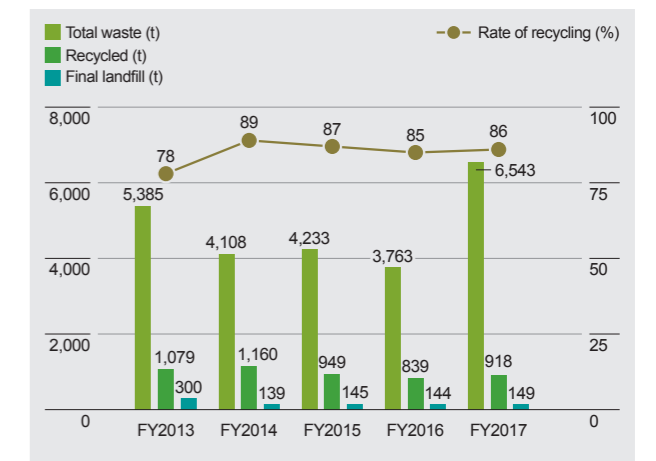
The amount of waste increased by 74% due to increased operations at the Research Center and increased production at Nichino Service plants.

#### (2) Reduction of final landfill

All plants separate waste and worked to reduce final landfill by practicing the 3R(reduce, reuse, and recycle of waste) system. Final landfill amount from the Research Center increased due to an increase in testing soil. The Nichino Service Fukushima Plant, Kashima Plant, and Saga Plant all achieved zero emissions.

The rate of recycling was 86%, representing a minor increase compared to the previous year.

\* Rate of recycling = recycled amount / (recycled amount + final landfill amount)



#### (3) Survey and inspection of waste disposal contractors

We select contractors capable of the proper waste disposal and conduct surveys and inspection of final landfill sites periodically.

#### (4) Waste containing PCB

We have stored strictly highly concentrated PCB waste and waste containing minimum amounts of PCB\*, under strict leakage prevention system and dispose systematically in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes.

\* Refers to electrical device waste products that unintentionally contain minimum amounts of PCB, manufactured after the termination of PCB manufacturing.

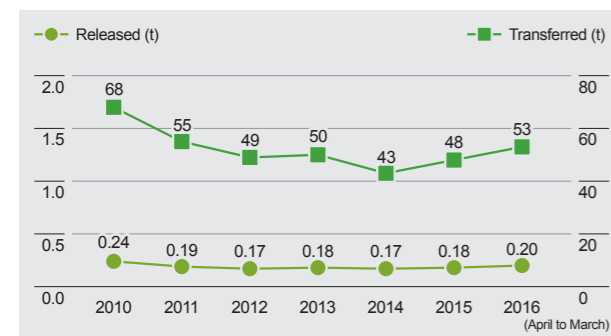
### 5) PRTR Law\*1 Applicable Hazardous Substance Released and Transferred Amount\*2 (Cumulation period: April 2016 - March 2017)

#### (1) Released\*3 amount

With the increase in production amount and using for testing and research, released amount increased by 12.4% compared to the previous year.

#### (2) Transferred\*4 amount

Transferred amount increased by 10.7% compared to the previous year due to increased handling and changes produced items.



\*1 PRTR is an abbreviation of Pollutant Release and Transfer Register, defined under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances into the Environment and Promotion of Improvements to the Management Thereof.  
 \*2 Scope of calculation includes Japan EcoTech Fukushima and Osaka Analysis Center.  
 \*3 Release to atmosphere, public waters, soil, and landfill.  
 \*4 Transferred to sewer works, consignment of disposal to a waste disposal contractor (excluding amount shipped as commercial products).  
 \*5 All agrochemical technical grades.

#### Released and transferred amount: Top 10 substances by amount

Released amount			
Rank	Current Y	Previous Y	Substance name (kg)
1	1		n - Hexane 90.0
2	3		Xylene 21.0
3	2		Triethylamine 14.0
4	4		Ethylbenzene 12.0
5	5		1,2-Dichloroethane 10.0
5	10		Isoprothiolane *5 10.0
5	6		Buprofezin *5 10.0
8	19		Fenitrothion *5 9.0
9	20		Tebufenozide *5 6.0
10	8		Acetonitrile 4.7
			Other 10.4
			Total 197.1

Transferred amount			
Rank	Current Y	Previous Y	Substance name (t)
1	1		Chlorobenzene 29.1
2	3		Xylene 5.5
3	4		n - Hexane 4.0
4	5		Acetonitrile 3.6
5	6		Ethylbenzene 3.4
6	8		Isoprothiolane *5 1.3
7	2		Oxine-copper *5 1.1
8	7		Water soluble compound of zinc 1.0
9	10		Flutolanil *5 0.6
10	9		Poly (oxyethylene) = alkyl ether (limited to those having 12 to 15 carbon atoms in the alkyl group and said compounds) 0.4
			Other 2.9
			Total 52.9

## 3. Environmental Accounting

### 1) Environmental Protection Costs

Total facilities investments related to upgrading to energy efficient equipment and new product development were 78 million yen (down 69.4% from previous year). On the other hand, personnel, facility maintenance, and related expenses\*1 were 775 million

yen in total (up 5.3% from previous year). Of those expenses, 521 million yen (68% of expenses) were related to environmental protection spending within R&D.

Environmental protection is one of the most important social responsibilities of a corporation, and we will continue to allocate appropriate expenditures for investments and expenses.

Environmental Protection Costs				
Classification	Details of major initiatives	Investments (million yen)	Expenses (million yen)	
1. Costs within business area	(1) Pollution prevention	Prevention of air pollution, water pollutant, bad odor	6 ( -7)*2	122 ( -4)
	(2) Global environmental protection	Prevent global warming by energy conservation	48 ( +15)	8 ( +8)
	(3) Resource recycling	Industrial waste, general waste disposal	0 (-207)	110 ( +4)
2. Upstream/Downstream	Cost of switching to environmental conservation type raw materials	0	0	
3. Management activity	Research Center, office neighborhood greenification, environmental load monitoring	0	13 ( +1)	
4. R&D costs	R&D for products contributing to environment protection	24 ( +22)	521 (+31)	
5. Social activity costs	Donations/support for organizations involved in environmental protection	0	0	
6. Environment damage response costs	Pollutant recovery costs	0	0	
<b>Total</b>		<b>78 (-177)</b>	<b>775 (+39)</b>	

\*1 Expense amounts: Maintenance and management expenses for facilities used for environmental measures as well as personnel and other expenses related to other environmental measures (including depreciation).  
 \*2 ( ) indicates change from previous fiscal year, no figures indicated if unchanged.

### 2) Environmental Protection Effect: Improvement Achieved through Investments and Expenditures for Environmental Protection

We worked to promote energy conservation but due to an overall increase in work volume, particularly an increase in production (116% YoY), we recorded increases for all categories, including energy consumption and CO2 emissions.

Effect item	Details	Item (unit)	YoY change	Change (%)
Pollution prevention	Air/water pollutant emissions	Dust (t)	+5.1	+606
		NOx (t)	+13.3	+337
		SOx (t)	+1.0	+258
		COD (t)	+2.4	+48
Global environmental protection	Greenhouse effect gas emissions Energy/water usage rates	CO2 (t)	+477	+5
		Energy (crude oil equivalent) (kl)	+353	+6
		Water (1,000 m <sup>3</sup> )	+20	+10
Resource recycling	Waste	Amount (t)	+2,780	+74
		Final landfill amount (t)	+5	+3

## 4. Activities towards Green Purchasing and Green Procurement

Nihon Nohyaku is enrolled in the Green Purchasing Network, through which we proactively promote green purchasing by our domestic Group companies. Our green purchasing rate for our entire Group is 99%, surpassing our goal (95% or higher). In addition to consideration of quality and price, we will continue to promote the purchasing of items and materials contribute to reducing environmental load. We also improved our green procurement rate from 92% last year to 95%. This is based on new our green procurement standards established in FY2016. We will continue efforts to improve our green procurement rate.

#### The Nichino Group green procurement standards

Each green supplier of chemical materials should satisfy the condition A) and, in addition, satisfy at least one of conditions B1) to B3).

- A) Providing SDS (Safety Data Sheet) or equivalent GHS-related information.
- B1) Actively promoting environmental conservation\*1.
- B2) Supplying products with less environmental impact and without highly hazardous substances\*2.
- B3) Not using any highly hazardous substances during processing and manufacturing\*2.

\*1 Activity examples: acquired environment management system certification, involved in Responsible Care activities, participating in national environmental protection activities (Fun to Share, etc.), issuing environmental reports, acquired environmental ranking.  
 \*2 Hazardous substance examples: POPs, substances applicable to PRTR (excluding agrochemical active ingredients), substances applicable to major regulations in other countries (e.g.: SVHC in the EU), chemical substances not allowed in foods, etc.

## 5. Efforts towards Creating a Low-Carbon Society

Since 2010, we complying with the Action Plan for Low-Carbon Society led by the Japan Business Federation (Keidanren). We promote CO2 emissions reductions alongside with following initiatives.

### (1) Supplying renewable energy

We installed a solar power generator in Nichino Service Saga Plant. All power generated by the facility (1,676 MWh) is sold to power companies, which contributes to CO2 emission reductions by reducing the output coefficient of the power company.

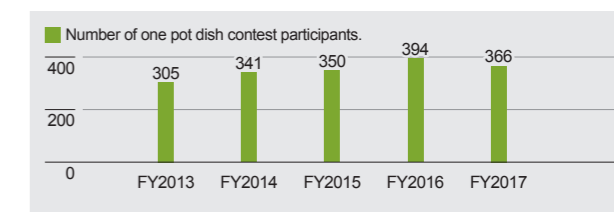
### (2) Registration with Fun to Share

In FY 2017, all our domestic Group companies registered with "Fun to Share", a national initiative promoted by the Ministry of the Environment. Our involvement in Fun to Share includes an activity declaration that centers on our Group common theme of "Locavore", our original social contribution activity. We will continue to raise awareness of global warming countermeasures and participate in environmental protection activities.

### (3) Promoting Locavore

We engage in "Locavore", our unique Group social contribution activity. We can reduce food mileage by increasing consumption of agricultural and marine produce for which the country has a high rate of self-sufficiency. To promote this initiative, we hold a contest in the winter to see who makes a one pot dish (nabe) the most times. This year there were 366 participants and the winner made a one pot dish meal 83 times (December to February).

In the summer, we conduct a survey on "Energy conservation that can be done at home", which had 533 participants (August). Participants increased from the previous year and we contributed to raising awareness for CO2 reduction in the home.







RC activities supporting sustainable development

# Occupational Safety & Health, Process Safety & Disaster Prevention



## 1. Occupational Safety & Health

### 1) Efforts to Create a Pleasant Workplace and Protect Human Rights

In addition to promoting opportunities for women in the workplace (p.6, p.10), our Group respects fundamental human rights, including rejection and denouncing child labor, and we proactively pursue globalization with a focus on diversity. We believe mutual understanding and respect are key in an environment that involves in dealing with various histories, cultures, and customs.

We promote personnel development that fosters to maximize the unique capabilities and senses of each employee. As a system to maintain and promote employee health and address the issue of work-life balance, we have established various programs, including setting goals for using paid time off, providing full physical examinations for employees over age 40, allocating refresh vacations and travel coupons based on the number of consecutive years of employment, a long-term sick leave system, half-day paid leave, childcare leave ("Mama Papa Child Care Leave Plus", paid childcare leave for the husbands of women on childcare leave, expansion of those applicable for child nursing care leave, company-sponsored provision of allowance during childcare leave period, etc.) shorter working hours for childcare, shorter working hours for expectant and nursing mothers, family care leave, and volunteer leave. To respond to diversifying workstyles, we adopted a flex-time system designed based on the recommendations of an expert committee. Moving forward, we also will evaluate a telecommuter system.

### 2) Promotion of Safety and Health Management

All sites hold regular safety and health committee meetings, through which we check on the status of goals, action plans, and progress, and conduct risk assessments. Through these meetings, we work to eliminate work-related injuries, create a pleasant work environment, and improve our safety and health levels. At the Head Office and Research Center, which both have more than 50 employees, we have contracts with industrial physicians and mental health professionals to create a system that allows employees the opportunity to consult with experts on mental health and other issues. At offices without a dedicated industrial

physician, we use web conferencing systems to enable sessions with the Head Office industrial physician. We also use external contractors to establish the Nichino Group Consultation Desk, where employees and their families can consult on all types of health issues, including mental health. To address the stress check mandated by the government in 2016 in Japan, we conducted group analyses and provided sessions conducted by external specialists for all employees of certain departments. These efforts promote a better work environment for our employees. We also proactively encourage and have a high level of participation among applicable employees for the specified health guidance and data health plan sponsored by our Health Insurance Society.

### 3) Expenses for Safety & Health

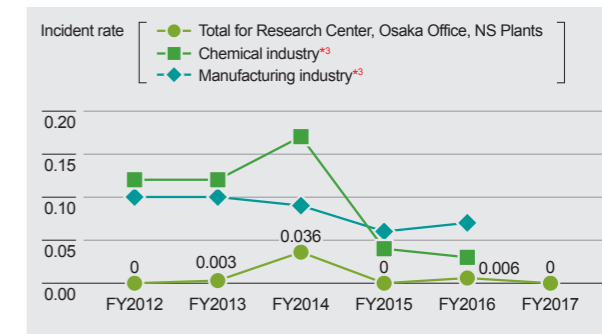
In FY2017, total expenses were 25.2 million yen, including 13.6 million yen for health examinations, 10.1 million yen for industrial physicians, and 1.5 million yen for vaccinations, including influenza countermeasures, and mental health. We will continue to allocate necessary expenses to improve safety and health, and towards mental health.

### 4) Working Condition Improvement at Production Sites

To prevent worker health damage, fire or explosions, and other accidents related to chemical substances, at Nichino Service we have outlined "Work Management Standards for Handling Chemical Substances" and voluntarily established Acceptable Operator Exposure Limits for each chemical substance handled. We conduct measurements regularly to manage these standards. This fiscal year, we established the new exposure limits for two substances for our facilities.

### 5) Incident Rate\*1 and Record of Zero-Occupational Accident\*2

There was no accident with workdays lost, unfortunately there were six accidents without workdays lost that occurred at domestic Group companies (six accidents in the previous year). The total incident rate for the Research Center, the Osaka Office, and Nichino Service was below the average levels for the manufacturing industry and the chemical industry. We will continue to promote the prevention of work-related injuries as we aim for zero accidents.



\*1 A scale for indicating the severity of work-related injuries calculated using the formula [workdays lost/total work hours (per 1,000 hours)]  
 \*2 Record of No. of days and work hours without an accident with workdays lost.  
 \*3 Referenced from FY2016 Survey on Trends in Work-Related Accidents (Office survey (offices with 100 or more employees) and general construction business survey) (April 25, 2017: MHLW).

### Record of Zero-Occupational Accident

Site	Total No. of Days	Total hours (1,000 hours)
Nihon Nohyaku	Research Center	2,620
	Osaka Office	426
Nichino Service	Fukushima Plant	1,342
	Kashima Plant	1,566
	Saga Plant	6,575

## 2. Process Safety & Disaster Prevention

### 1) Disaster Preparedness

At Nihon Nohyaku and Nichino Service, we conducted initial response training based on the assumption of a fire at Nichino Service Kashima Plant. Training involved cooperation by several offices. We established an emergency response headquarters at the Nihon Nohyaku Head Office and confirmed functions and roles, and tested the safety confirmation system to validate efficacy. (September 25, 2017)

### 2) Created Overseas Risk Management System

With the goal of further enhancing the Nichino Group overseas risk management system, we created regulations and procedures outlining detailed response measures in the event of an emergency situation involving employees traveling on business or assigned overseas (October 25, 2017). We will work as a Group to prepare for diverse and increasing risks overseas.

### 3) Safety Management of Facilities

We conducted planned risk assessments and mandated inspections for facilities and equipment. We monitor waste water based on voluntary managed standards and work to prevent waste water levels from exceeding those standards. As a result, we had no serious water quality incidents, including serious facility accidents or agrochemical leaks.

### 4) Training for Emergency

We regularly conduct training at each site to ensure our ability to respond appropriately in the event of an emergency. Topics are introduced below.

#### Nihon Nohyaku

At the Head Office, each year we participate in joint firefighting drills held by our building to prepare for responses in the event of an emergency.

At the Research Center, we conducted large-scale disaster prevention training, including training for calling the fire department, and participated in firefighting skill improvement training held by the fire department.

At the Osaka Office, which took over the system in place by the former Nichino Service Osaka Plant, in addition to disaster prevention trainings we also conducted leak response training to account for the site's role as a logistics center.



Firefighting & evacuation drills (Head Office: July 21, 2017)





Large-scale disaster prevention training (Research Center - November 2, 2016)



Firefighting skill improvement training (Research Center - October 19, 2016)



Disaster prevention training (Osaka Office - September 28, 2017)



Leak response training (Osaka Office - September 28, 2017)

### Nichino Service

At each site, we conducted firefighting training and emergency response training to address raw material or product leaks caused by natural disaster or accidents.



Emergency situation training (Nichino Service Fukushima Plant - September 6, 2017)



Disaster prevention training (Nichino Service Kashima Plant - September 5, 2017)



Emergency situation training (Nichino Service Saga Plant - July 12, 2017)

### 5) Other Efforts for Safety Operation

The Research Center worked to increase overall safety awareness, including holding a seminar by the Research Center General Manager titled "4-4 Feel Safety Day at Nihon Nohyaku" that reviewed past accidents and safety driving training.



Safety driving training (Research Center - June 16, 2017)



## Logistics Safety, Product Stewardship (Chemical Materials & Product Safety)



## 1. Logistics Safety

### 1) Safety Management During Transport

During the transport of toxic substances, poisons, or hazardous materials/designated flammable substances stipulated by the Fire Service Act, we ask drivers to carry Yellow Cards, which include a concise indication of contact information, handling methods, and precautions for implementing first aid in the event of an accident. To account for the difficulty in using Yellow Cards for mixed shipments or for small-lot shipments after reloading cargo at relay points, we use Container Yellow Cards, which shows the guideline number and UN number on the outside of the container to indicate emergency response measures. These are both measures recommended by the JCIA. Since FY2010, we created and provided White Cards that is printed backside of invoice, indicates the similar information as a Yellow Card, enabling a uniform system of management that promotes logistics safety.

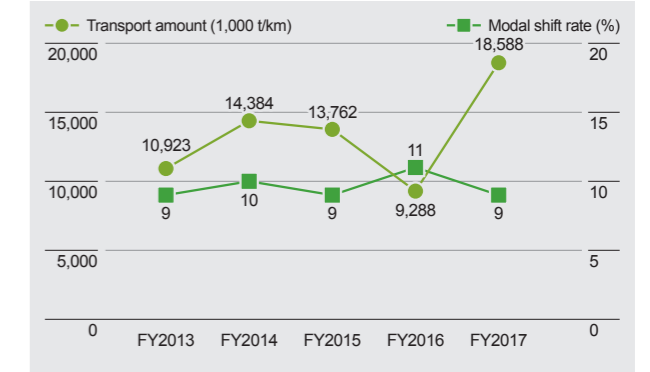


Our original invoice with the "White Card" information

### 2) Promotion of Modal Shift

Transported amount of products and intermediate agents increased from the previous year as CO<sub>2</sub> emissions related to logistics were 2,324 t (153% YoY). To reduce CO<sub>2</sub> emissions, we are progressing with a modal shift to convert the method of transport between Nichino Service Plants from trucking to railway freight or marine transport. Our modal shift rate\* in FY2017 was 9%, down 2 points from the previous year. This was due to an increase in the volume of small-lot shipments via truck. We will continue to focus on transport that emphasizes this modal shift.

\* Modal shift rate (ratio of railway freight and marine transport) = (railway freight and marine transport amount) / (total transport amount) x 100



## 2. Product Development Considering Environment / Safety and Animal Welfare

### 1) Development of Safe Agrochemicals

Agrochemicals used today must not only protect crops from pests and weeds, but also must give due consideration to the impact on human and environmental organisms. We conduct R&D with the goal of developing agrochemicals from the perspective of the environment, safety and health. In recent years, we have been promoting an accelerated and multi-faceted approach to safety research during the exploratory research phase. This not only enables an early evaluation of various risks, but also leads to increased awareness regarding the environment, safety, and animal welfare. During R&D, in addition to performance of evaluations, we also conduct safety evaluations based on testing for over 30 criteria based on the latest science, including toxicity, environmental impact, and residual effects. After this process,

products must be approved and registered in each respective country before being launched to market. To ensure the safety of inert ingredients in agrochemical agents, we also are conducting the planned response for EU regulations for new and existing products (REACH\*). Furthermore, we engage in broad-based RC activities in every stage of our business activities, from R&D to production, sales, logistics, use, disposal, and recycling, to ensure product safety. With increased operations overseas due to our expansion of overseas offices, we are ensuring compliance with the environmental laws and regulations of each country and conducting environmentally, safety, and health-conscious R&D based on this registration systems.

\* Registration, Evaluation, Authorization, and Restriction of Chemicals: EU comprehensive system for the registration, evaluation, approval and restriction of chemical substances.



## 2) Creating Environmentally-conscious Products Based on Global Standards

R&D staff from Group companies in North and South America, Europe, and Asia regularly gather in Japan to exchange information on the conditions in each country/region to promote product development founded in mutual cooperation.

To promote environmental safety, we published "Chemical Development for Overseas Markets" as voluntary global development standards. We also

established advanced voluntary standards for countries and regions where agrochemical registration parameters related to safety do not meet the standards outlined by the Organisation for Economic Co-operation and Development (OECD). Through these standards, we outline clear policies for ensuring the safety of workers and the environment (November 27, 2017).

# 3. Raw Materials and Products Safety Management

## 1) Management of Safety Data Sheet (SDS) for Globalization

We have created and provided SDS for approximately 700 items with the goal of ensuring the safe handling of our agrochemicals and other chemical products, and preventing work-related injuries and other accidents. We also obtained and created digital versions of SDS for all raw materials and products, to create a system that allows relevant departments at the Research Center and Nichino Service to obtain and browse this information via our internal LAN.


For the products we have developed, we have completed SDS revisions based on the latest JIS standards. Overseas, we are responding to the regulations of each country to address GHS response requirements outlined in laws related to chemical substances in the EU, Korea, China, and the USA. We are cooperating with our Group company Nichino Europe Co., Ltd. to revise SDS for the EU into REACH-compliant SDS based on the latest CLP regulations\*.

\* EU regulation on classification, labelling and packaging of substances and mixtures: Classification methods based on GHS were adopted and have gradually been applied since December 1, 2010. There is a need to conform product labels, SDS, etc. for chemical substances distributed within the EU to CLP regulations.

### What is GHS

Abbreviation for Globally Harmonized System of Classification and Labelling of Chemicals, which is recommended by the UN in July 2003, GHS outlines the following.

1. **Classifying the hazards of chemical substances and their mixtures in accordance with a methods and definitions that are globally common.**
2. **The hazards are displayed on product labels and SDSs using standardized hazard symbols / signal words, etc.**
3. **Making the hazards of chemicals easy to understand by the global standardization of these classifications and labeling.**



## 2) Agrochemical/Chemical Substance Quality Management

We work to ensure product quality and safety in every stage of our business activities, from R&D to production, sales, logistics, use, and final consumption as well as disposal and recycling. Our Quality Management Panel conducts detailed evaluations of product quality, and for production Nichino Service has obtained ISO9001 certification as part of its efforts to maintain and improve quality. Pharmaceutical GMP (production management and quality control standards) was an issue during the previous fiscal year. We promoted use of the PDCA cycle to improve the GMP management system for our production of pharmaceutical raw materials. We underwent reexaminations for GMP conformity by the Pharmaceuticals and Medical Devices Agency and the Ibaraki Prefectural Department of Pharmaceutical Affairs, and were recertified as being GMP-compliant (November 29, 2016). We will continue working to improve quality.

We use the internal visualization of response status for claims received in relation to our products to promote rapid and accurate response. Although the number of claims has fallen compared to the 45 to 65 claims received several years ago but FY2017 product claims did increase by 4 claims year on year to 31 claims.

We conduct risk management for product liability (PL) to prevent PL issues.

## 3) Eliminating NPE and Reducing PRTR Substances

Poly(oxyethylene) nonylphenyl ether (NPE) is categorized as an endocrine disrupting substance that degrades into the environment. As such, we have eliminated NPE as an inert ingredient in new products and are progressing with the elimination of NPE from existing products. In FY2017, we released 4 new NPE-free products and removed NPE from 1 existing product. We also are working to reduce PRTR substances during new product development.

## 4) Response to Poisoning and Environmental Accidents

We provide the Japan Poison Information Center (JPIC) with SDS and other information for responding to poisoning accidents related to our products. This information is beneficial in handling inquiries from medical institutions to the JPIC in the event of an accident. During FY2017, there were 14 inquiries made to the JPIC. We also received 5 inquiries for hazardous information. We rapidly provide various information as part of our efforts to use information to improve product safety.

During FY2017 as well, we have no poisoning accident or environmental accident, and no requiring official report under the Consumer Product Safety Act.

### Activities Promoting the Proper Use of Agrochemicals

#### Practice Strict Compliance! 7 Basic Rules

1. **Make sure to fully read labels and user manuals prior to use.**
2. **Make sure to convey usage plans to neighbors prior to use if planning to use in residential areas or other surrounding areas.**
3. **Make sure to use agrochemical protective gear, including masks and gloves.**
4. **Make sure products do not spray or run outside the farm area.**
5. **Make sure to create a record of use.**
6. **Make sure to separate from food and store in locked storage.**
7. **Make sure to properly dispose of empty containers and other waste.**

Japan Crop Protection Association





## 1. Distributing Information to Society

We conduct the following with the goal of providing beneficial and accurate information. Please contact us with any opinions or requests.

### 1) Customer Consultation Service

We have established consultation desks based on product fields. We accept inquiries from customers regarding domestic agrochemical products via telephone or via the inquiry form on our website.

We also accept general questions and inquiries from consumers regarding agrochemicals. By providing relevant information, we hope to increase understanding of agrochemicals. Inquiries regarding products other than agrochemicals are responded to by the relevant department.

#### Consultation desk

##### Domestic agrochemical products

TEL. +81-3-6361-1414

(TECHNICAL SERVICE & PROMOTION DEPT.)

##### Pharmaceuticals, Animal Health Care products

TEL. +81-3-6361-1418

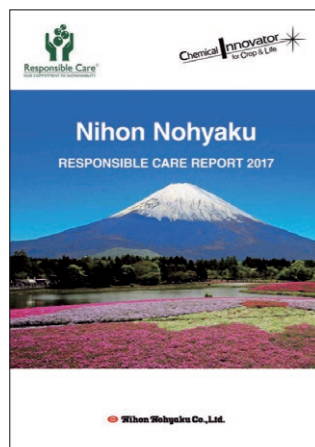
(PHARMACEUTICAL DEPT.)

##### Termiticide, Agrochemicals for turf and garden

TEL. +81-3-6361-1417

(CHEMICAL PRODUCTS DEPT.)

(Weekdays, 9:00 am - 5:25 pm)



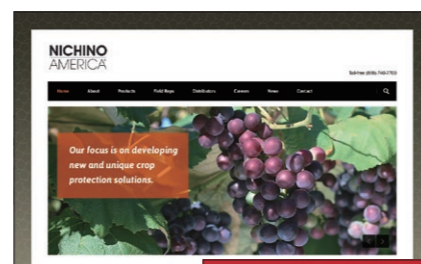
Responsible Care Report 2017 (available on our website)

### 2) Disclosure of Business Information

To promote understanding of our business activities by as many stakeholders as possible, we work to provide accurate and timely information disclosure and to enhance disclosed information. We continuously review information content and update information as necessary.



Website: <http://www.nichino.co.jp/en/> (top page)



Overseas Group company website (top page)



## 2. Relationship to Society

### 1) Community Service

#### Kawachinagano Local Manufacturers Exploration

Our Research Center was introduced in a feature titled "Kawachinagano Local Manufacturers Exploration" in the Kawachinagano City Magazine (April 2017). It is a series featuring a full-page article (back page) for which the magazine visits the production sites of businesses operating in the city to introduce their technology and creativity. This issue marked the 18th edition of this series. The article features an interview with General Manager of Research Center and photos for easy introduction. Approximately 48,000 copies of the magazine are printed and distributed to homes throughout the city. The publication is also available for browsing on the Kawachinagano City website.



Kawachinagano City Magazine - April 2017 Issue (Kawachinagano City website: <http://www.city.kawachinagano.lg.jp/>)

#### Cooperation with the neighboring irrigation association in the canal cleaning

Once a year we cooperate with the irrigation association, which supports our field tests, in the cleaning of the canal near the Research Center. Early on a Sunday morning, the members of the irrigation association and volunteers from the Research Center and Nichino Service Kawachinagano Center gather. Wearing gloves, long boots, and using hoes and other tools, the group removes the dirt, mud, and weeds that have collected along the long water canal from the reservoir to the farmlands. This year we were blessed with good weather but if it does rain then the volunteers wear raincoats, which can make the task much tougher. However, when the task is completed, volunteers not only feel the fatigue of a hard day's work but also with the joy of achievement. The day is a good opportunity for the volunteers to break a sweat for a good cause and share in the bonding that comes with mutual effort.



Cooperation with the neighboring irrigation association in the canal cleaning (Research Center - May 28, 2017)

#### Revitalizing the orange tree planted by Ieyasu Tokugawa

Right next to the statue of Ieyasu Tokugawa in the Shizuoka City Sumpu Castle Park is an orange tree planted by Ieyasu Tokugawa (Shizuoka Prefecture Designated Natural Treasure). The tree is said to be over 400 years old but recently has suffered damage caused by scale insects. Representatives from our Shizuoka sales staff cooperated with local officials to

use our agrochemical "Applaud" and "Spray Oil" to stop the damage caused by the scale insects. Through our actions, we contributed to the recovery and conservation of this treasured tree, and to the delight of all involved. When you visit Shizuoka Prefecture, make sure to visit the statue of Ieyasu Tokugawa and the orange tree he planted.

\* Ieyasu Tokugawa in the Edo era founder Shogun.



Statue of Ieyasu Tokugawa and the orange tree planted by Ieyasu Tokugawa



recovered from damage caused by scale insects (December 22, 2017)



## 2) Relationships with Stakeholders

### Tours by high school students

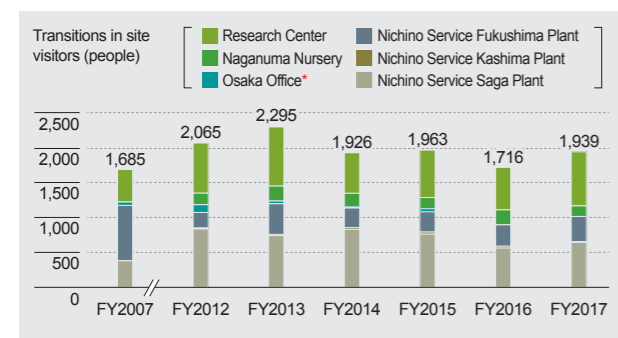
Six students from Eiai High School in Sapporo, Hokkaido visited our Head Office as a part of their school's carrier project. We provided explanations on the necessity of agrochemicals and about our business operations mixed in with 3 choices quizzes and product introductions. The tour involved lively Q&A and students left with a greater understanding of agrochemicals.



Student visit (Head Office: November 6, 2017)

### Acceptance of visitors for factory tours and laboratory tours

In FY2017, the Research Center, Naganuma Nursery, and the Nichino Service Plants were visited by 1,939 people. Visitors were provided a tour of our facilities as well as explanations and seminars to promote understanding of agrochemicals.



\* Osaka Office includes figures for the former Nichino Service Osaka Plant through July 2016.

## 3) Contributing to Society

### Dispatching lecturers and guest speakers

In FY2017, we again dispatched speakers from our Research Center to universities, agricultural colleges and academies, and middle schools, to hold seminars and visiting lectures to promote accurate understanding of agrochemicals and help disseminate accurate information on irradiation and other scientific technology.

### Agricultural college scholarship and workshops

In FY2008, we started the Nichino Scholarship Fund, commemorating the 80th anniversary of our founding. This year marks the 11th year of the fund. Each year, we provide scholarship funds to students from 9 agricultural colleges around Japan to support the agricultural careers of more than 150 students. Scholarship students are invited to participate in workshops of our Research Center and other Group locations sites to provide them with a better understanding of our business and to increase their knowledge of agrochemicals. We hope this system for providing promising students with scholarships will aid in the development of successors to the future of Japan's agriculture.



Tour with Nichino Scholarship students (Research Center: July 21, 2017)

### Cooperating with blood donations

The Research Center, Nichino Service Fukushima and the Saga Plants cooperate with Japan Red Cross blood drives. A blood donation truck visits sites and conducts blood drives for half a day. Although the break required following donation requires some time, many employees found time in between work to give blood. We plan to continue cooperating with blood drives.



(Research Center: July 10, 2017)

## Participation in the Project of JMAFF



### 1) Nougyou-Joshi\* Project

We participate in the Nougyou-Joshi Project, an initiative by JMAFF to raise an existence sense of a female farmer in the whole society. It's to plan for increase of the lady of the young people who chooses agriculture as occupation through dissemination of related information. This project aims to tie the knowledge and ideas of female farmers with corporate technology and knowledge to create new products and services, and actively promote them throughout society.

We launched the "Nihon Nohyaku Thinking of Future Female Farmer Project". Specifically, as a member of the Women in Agriculture Project, we are planning to hold online seminars on agrochemical efficacy and safety as well as develop a convenient website for registered participants.

In November 2017, we held a kickoff meetings with 14 members of the Nougyou-Joshi Project from around Japan to prepare for the seminars based on the themes of "How can we call crops grown with agrochemicals safe?" and "Proper agrochemical use for ensuring safe crop production". At the kickoff meetings, participants exchanged opinions on seminar content. Feedback included, "I learned new things", "I wanted to know more about agrochemicals", "I have more confidence in speaking with consumers about the safety of agrochemicals", and "I enjoyed speaking with like-minded people."

Through this project, we will contribute to developing an environment that provides more opportunities for female farmers.

\* Nougyou = agriculture / engagement in farming  
Joshi = girl / lady



Kickoff meeting (Head Office: November 22, 2017)



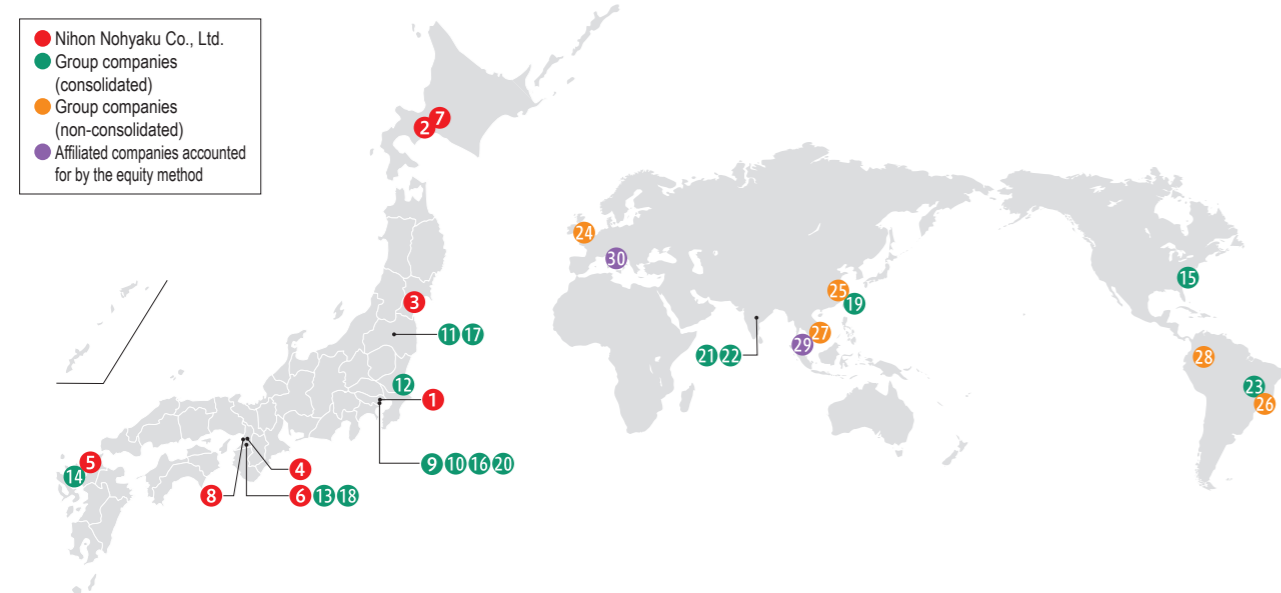
### 2) Participation in "AI-based pest infestation early diagnosis technology development" consortium

We are a corporate member of the "AI-based pest infestation early diagnosis technology development" consortium, one of the JMAFF FY2017 sponsored research projects for the creation of next-generation agriculture using artificial intelligence. This project aims to develop technology that will enable new farmers and instructors on farms to use a tablet to diagnosis pest infestations and implement countermeasures. Specifically, the project involves collecting image data to build a

database for crops that have been damaged by pest infestations or other problems related to crop harvest. This database would be used to develop a system comprising highly versatile user-friendly applications that can be offered as a low-cost service for diagnosis of pest infestations. Through this project, we will address one of our Basic Principles of fulfilling market needs by creating superior values with innovative technologies.



# The Nichino Group Global Sites



## Nihon Nohyaku Co., Ltd.

1 Head Office, Tokyo Branch	19-8, Kyobashi 1-Chome (Kyobashi OM Bldg.), Chuo-ku, Tokyo 104-8386
2 Sapporo Branch	10-2, Kitasanjounishi 2-Chome (Sapporo HS Bldg.), Chuo-ku, Sapporo-shi, Hokkaido 060-0003
3 Sendai Branch	10-17, Ichibancho 2-Chome (Sendai Ichiban Bldg.), Aoba-ku, Sendai-shi, Miyagi 980-0811
4 Osaka Branch, Tokai-Hokuriku Sales Office	6-18, Miyahara 4-Chome (Shin Osaka Wako Building), Yodogawa-ku, Osaka-shi, Osaka 532-0003
5 Fukuoka Branch	12-5, Tenjin 1-Chome (Daiwa Securities Fukuoka Bldg.), Chuo-ku, Fukuoka-shi, Fukuoka 810-0001
6 Research Center	345 Oyamada-cho, Kawachinagano-shi, Osaka 586-0094
7 Naganuma Nursery	Kita 2 Banchi, Higashi 7 Sen, Naganuma-cho, Yubari-gun, Hokkaido 069-1317
8 Osaka Office	2-30, Tsukuda 5-Chome, Nishiyodogawa-ku, Osaka-shi, Osaka 555-0001

## Group companies (consolidated)

9 Nichino Ryokka Co., Ltd.	14-4 Nihonbashi-Kodenmachi (Okaya Building 6F), Chuo-ku, Tokyo 103-0001
10 Nichino Service Co., Ltd. (Head Office)	19-8, Kyobashi 1-Chome (Kyobashi OM Bldg.), Chuo-ku, Tokyo 104-8386
11 Nichino Service Fukushima Plant	286, Hiraishtakada 4-Chome, Nihonmatsu-shi, Fukushima 964-0981
12 Nichino Service Kashima Plant	19 Sunayama, Kamisu-shi, Ibaraki 314-0255
13 Nichino Service Kawachinagano Center	345 Oyamada-cho, Kawachinagano-shi, Osaka 586-0094
14 Nichino Service Saga Plant	180-1 Aza-Nihonsugi, Oaza-Tsutsumi, Kamimine-cho, Miyaki-gun, Saga 849-0124
15 Nichino America, Inc.	U.S.A. / Wilmington
16 Japan EcoTech Co., Ltd. (Head Office)	12-2, Kyobashi 3-Chome (Kyobashi No. 2 Yuraku Bldg., 7F), Chuo-ku, Tokyo 104-0031
17 Japan EcoTech Fukushima Analysis Center	286, Hiraishtakada 4-Chome, Nihonmatsu-shi, Fukushima 964-0981
18 Japan EcoTech Osaka Analysis Center	345 Oyamada-cho, Kawachinagano-shi, Osaka 586-0094
19 Taiwan Nihon Nohyaku Co., Ltd.	Taiwan/Taipei
20 AgriMart Corporation	12-2, Kyobashi 3-Chome (Kyobashi No. 2 Yuraku Bldg., 6F), Chuo-ku, Tokyo 104-0031
21 Nichino India Pvt. Ltd.	India / Hyderabad
22 Nichino Chemical India Pvt. Ltd.	India / Hyderabad
23 Sipcam Nichino Brasil S.A.	Brazil / Uberaba

## Group companies (non-consolidated)

24 Nichino Europe Co., Ltd.	UK / Cambridge
25 Nichino Shanghai Co., Ltd.	China/ Shanghai
26 Nichino do Brasil Agroquímicos Ltda.	Brazil / Sao Paulo
27 Nichino Vietnam Co., Ltd.	Vietnam / Ho Chi Minh
28 Nihon Nohyaku Andica S.A.S.	Colombia / Bogota

## Affiliated companies accounted for by the equity method

29 Agricultural Chemicals (Malaysia) Sdn. Bhd.	Malaysia / Penang
30 Sipcam Europe S.p.A.	Italy / Milan

# Information and Topics of Each Facility

Number of employees for Research Center and each plant includes non-full-time employees.

## Research Center

**General Manager:** Kozo Machiya  
**Address:** 345 Oyamada-cho, Kawachinagano-shi, Osaka  
**Number of employees:** 177  
**Land area:** approx. 71,000 m<sup>2</sup>  
**Floor surface area:** approx. 16,000 m<sup>2</sup>



## Research Center Policy

Our mission is to create new agrochemicals meet the needs of society to secure a safe and steady food supply, and to improving the quality of life. We embrace our role as a base for disseminating bioscience research information related to fine chemical products for agrochemicals and pharmaceutical products, from fundamental research on chemicals, biological organisms, and safety to research for product commercialization and industrial application. We are dedicated to various social activities, information disclosure, and open communication and ensure our position as a research center that is trusted by the community.

## RC Activity Topics

1. We proactively accept tour requests to promote further understanding of agrochemical efficacy and use, and agrochemical safety. In 2017, we welcomed a total of 774 visitors for tours. Visitors included farmers who use agrochemicals as well as middle school students and Nichino Scholarship students (agricultural college students).



Tour with middle school students (August 4, 2017)



Tour with Nichino Scholarship students (October 26, 2016)

2. In 2017, we again participated in the Kawachinagano City Citizen's Festival. We provided flower and vegetable seedlings (raised at Research Center by Nichino Service). The seedlings were provided as prizes for the stamp rally conducted in the adventure & nature area, one of the multiple event areas. The vegetable seedlings were more popular than the flowers. We hope seedlings will grow-up well.



Kawachinagano City Citizen's Festival (May 14, 2017)

3. We held an information exchange session at our Research Center conference room based on the Pollution Prevention Treaty we have signed with Kawachinagano City. The session provided city staff from the Environmental Measures Department, the Risk Management Department, and the Fire Department to confirm the results of our environmental measurements (emissions, waste water, noise, vibrations, etc.). We also provided a tour of the facilities. Measurements showed there to be no major issues. We received constructive questions and proposals, and we were able to promote mutual understanding. This marked the seventh year since we began holding the information exchange sessions at the Research Center, and over that time we have welcomed visits by some 50 city officials. We look forward to continuing with these sessions in the future.



Information exchange session with Kawachinagano City (May 23, 2017)

## Research Center environmental data

Items	Content (unit)	FY2013	FY2014	FY2015	FY2016	FY2017
Energy	Crude oil equivalent (kl)	1,926	1,973	1,931	1,961	1,970
Water	(1,000 m <sup>3</sup> )	29	30	27	31	31
	SOx (t)	0.0	0.0	0.0	0.0	0.0
Atmospheric emissions	NOx (t)	3.3	2.6	1.8	2.2	2.0
	Dust (t)	0.0	0.0	0.0	0.0	0.0
Waste	CO <sub>2</sub> (t)	3,549	3,881	3,913	3,912	3,871
	Amount (t)	197	184	196	202	206
Waste water	Final landfill (t)	131	122	137	137	140
	Volume (1,000 m <sup>3</sup> )	9	10	8	16	19
	COD (t)	0.3	0.2	0.2	0.4	0.0



### Nichino Service Co., Ltd. Kashima Plant

**General Manager:** Michihiko Kawaguchi  
**Address:** 19 Sunayama, Kamisu-shi, Ibaraki  
**Number of employees:** 44  
**Land area:** approx. 45,000 m<sup>2</sup>



#### Plant Policy

1. Ensure plant and equipment maintenance and management, and work to prevent explosions, fires, chemical substance leaks, and other accidents. Also, strengthen system for ensure appropriate response to emergency situations.
2. Work towards energy conservation to prevent global warming and protect natural resources.
3. Continuously reduce amount of chemical substances and waste with business activities.
4. Constantly ascertain hazards and toxicity of chemical substances handled and products by the plant and work to maintain and improve the environment, health, and safety.
5. Ensure a safe, comfortable, and pleasant work environment, and work to prevent work-related injuries, promote improved health, and increase safety and health level.



Overall Safety Inspection (June 5, 2017)

#### RC Activity Topics

1. We promoted the implementation of OHSAS18001, worked to improve overall occupational safety & health, and achieved zero accidents.
2. In FY2017, we achieved zero environmental accidents and zero environmental law violations, goals outlined in ISO14001.
3. During the disposal of industrial waste, we applied our electronic manifest and reinforced legal compliance. Furthermore, we conducted the planned monitoring of industrial waste disposal contractors to confirm proper disposal was being conducted.
4. We conducted stress checks to ascertain the level of mental stress felt by employees as part of efforts to prevent mental health problems.
5. As part of our safe operations initiative, we conducted an Overall Safety Inspection involving inspections of procedures for agrochemical technical pesticide products and risk validation.
6. We contributed to the local community by participating in community cleanup conducted by the Corporate liaison meeting in Hasaki District (twice per year)
7. As part of GMP management, we focused on voluntary inspection education to improve the skill levels of GMP internal audit staff.
8. We conducted a chemical substance risk evaluation using BIGDr (chemical substance risk evaluation support tool) provided by the JCIA.

#### Nichino Service Kashima Plant environment data

Items	Content (unit)	FY2013	FY2014	FY2015	FY2016	FY2017
Products	Technical grades*1 / bulk powder (t)	1,142	1,339	1,186	1,387	1,577
	Energy	Crude oil equivalent*2 (kl)	2,398	3,025	2,007	1,982
Water	(1,000 m <sup>3</sup> )	144	192	117	139	158
	SOx (t)	0.5	0.6	0.1	0.3	0.3
	NOx (t)	8.0	6.1	0.9	1.4	14.3
	Dust (t)	3.2	4.0	0.7	0.8	5.9
Atmospheric emissions	CO <sub>2</sub> (t)	4,148	5,212	3,465	3,368	3,452
	Amount (t)	4,281	2,718	3,166	2,725	5,508
	Final landfill (t)	155	9	4	4	4
Waste	Volume (1,000 m <sup>3</sup> )	134	205	106	128	135
	Waste water COD (t)	5.6	10.1	2.2	4.7	7.2

\*1 Includes volume of technical grades used at other plants  
 \*2 Includes volume used by Nihon Nohyaku departments stationed at the plant

### Nichino Service Co., Ltd. Fukushima Plant

**General Manager:** Hitoshi Yamaguchi  
**Address:** 4-286 Hiraishitakada, Nihonmatsu-shi, Fukushima  
**Number of employees:** 71  
**Land area:** approx. 119,000 m<sup>2</sup>



#### Plant Policy

1. Work to reduce chemical substances, CO<sub>2</sub> emissions and industrial waste from business activities, and promote resource and energy conservation as part of environmental protection efforts.
2. Conduct planned risk assessments, standard work procedure education, and risk prediction activities to prevent fires, explosions, chemical substance leaks, and other accidents. Also, conduct regular training to ensure appropriate response to emergency situations.
3. Applying the OHSAS18001 system, we prevent work-related injuries. Protect the safety and health of workers and work to create a pleasant, comfortable work environment.
4. We conduct to prevent logistics-related appropriate labeling of product containers accidents, and use Yellow Cards, White Cards, etc., to provide product safety information to all shipping and warehouse operators.
5. Conduct risk management for all processes related to the handling of chemical substances at the plant. Provide appropriate product safety information to all workers, clients, and affiliate operators involved in handling to maintain and improve safety, health, and the environment.
6. Encourage communication with the community and further mutual understanding through participation in community activities and social contribution activities.

#### RC Activity Topics

1. Prepared for emergency situations by conducting firefighting drills and drills for responding to agrochemical substance leaks.
2. Worked to improve overall occupational safety & health by applying method of OHSAS18001, and reviewing preventive measures of past incidents.
3. Continued to achieve zero environmental accidents and zero environmental law violations.
4. As part of community activities, we lent our ground for use by youth baseball team registered (15 times), and regularly conducted neighborhood cleaning (4 times/year).  
 We welcomed 42 groups totaling 361 visitors, including agrochemical consumers, to promote understanding regarding agrochemical safety.

#### Nichino Service Fukushima Plant environment data

Items	Content (unit)	FY2013	FY2014	FY2015	FY2016	FY2017
Products	Agrochemicals (t)	5,601	4,323	4,155	3,914	5,138
	Energy	Crude oil equivalent (kl)	538	514	456	449
Water	(1,000 m <sup>3</sup> )	8	8	9	7	8
	SOx (t)	0.2	0.2	0.2	0.0	0.9
	NOx (t)	0.2	0.2	0.2	0.0	0.3
Atmospheric emissions	Dust (t)	0.0	0.0	0.0	0.0	0.0
	CO <sub>2</sub> (t)	1,227	1,209	1,083	1,043	1,221
Waste	Amount (t)	436	469	363	380	429
	Final landfill (t)	9	2	1	2	1
Waste water	Volume (1,000 m <sup>3</sup> )	6	7	6	5	7
	COD (t)	0.0	0.0	0.0	0.0	0.0



Driving safety seminar (July 7, 2017)



### Nichino Service Co., Ltd. Saga Plant

**General Manager:** Hideki Utaka

**Address:** 180-1 Aza-Nihonsugi, Oaza-Tsutsumi, Kamimine-cho, Miyaki-gun, Saga

**Number of employees:** 87  
(7 are members of the Osaka Storage / Delivery Group)

**Land area:** approx. 84,000 m<sup>2</sup>



#### Plant Policy

1. Work to reduce CO<sub>2</sub> emissions and industrial waste, and promote resource and energy conservation as part of environmental protection efforts.
2. Promote the use of risk assessments to prevent fires, explosions, chemical substance leaks, and other accidents.
3. Utilize the OHSAS18001 system to prevent work-related injuries, provide mental care for employees, and create a pleasant work environment.
4. Provide product safety information to all logistics and warehouse operators to prevent logistics-related accidents.
5. Through agrochemical production, we all engage in efforts to contribute to society to ensure a safe and steady food supply and improve the quality of life.

#### RC Activity Topics

1. In FY2017, we achieved zero environmental accidents and zero environmental law violations, goals outlined in ISO14001.
2. We monitored industrial waste processing contractors to confirm proper treatment was being conducted.
3. As part of our communication with the society to promote understanding regarding agrochemical safety and usage methods, we welcomed 42 groups totaling 643 visitors including from universities, agricultural colleges and Agriculture officials. We also accepted two interns from two neighboring schools, providing opportunities to learn about agrochemical production, inspection to shipping etc.
4. To prepare for emergency situations, we conducted drills (firefighting and evacuation drills, agrochemical technical grade/product leak response drills, tank leak response drills, waste water treatment facility trouble response drills, etc.).



Disaster prevention training (September 11, 2017)

#### Nichino Service Saga Plant environment data

Items	Content (unit)	FY2013	FY2014	FY2015	FY2016	FY2017
Products	Agrochemicals (t)	5,701	6,438	5,466	4,891	5,288
Energy	Crude oil equivalent (kl)	830	960	950	835	1,045
Water	(1,000 m <sup>3</sup> )	13	13	14	13	14
	SOx (t)	0.1	0.2	0.1	0.1	0.3
Atmospheric emissions	NOx (t)	0.3	0.5	0.3	0.4	0.8
	Dust (t)	0.0	0.0	0.0	0.0	0.0
	CO <sub>2</sub> (t)	1,764	2,213	2,204	1,840	2,159
Waste	Amount (t)	392	649	399	375	312
	Final landfill (t)	0	0	0	0	0
Waste water	Volume (1,000 m <sup>3</sup> )	6	6	7	7	6
	COD (t)	0.0	0.0	0.0	0.0	0.0

### Osaka Office

**General Manager:** Sumitaka Kose

**Address:** 2-30, Tsukuda 5-Chome, Nishiyodogawa-ku, Osaka-shi, Osaka

**Number of employees:** 23 (including Production Technology Group of the Technology Management Dept., Osaka Storage / Delivery Group of Nichino Service Saga Plant, Japan EcoTech members)

**Land area:** approx. 30,000 m<sup>2</sup>

**Floor surface area:** approx. 15,000 m<sup>2</sup>

#### Office Policy

The Administration Group, Production Technology Group of the Technology Management Dept., Osaka Storage / Delivery Group of Nichino Service Saga Plant, and Japan EcoTech work out of the Nihon Nohyaku Osaka Office (from July 2017). From 2016, we continued initiatives at the former Nichino Service Osaka Office and spent one year evaluating what types of activities could be adopted. Although the Osaka Office only has a small number of staff, amid development construction, the entire the Nichino Group is committed to contributing to society through RC activities.

#### RC Activity Topics

1. Provided seminars and announcements to local residents regarding development construction. During the construction period, we checked construction noise levels and work to implement noise prevention measures to promote a better environment.
2. We conducted safety patrols, identified potential near misses and encouraged submission of near misses to promote accident prevention and maintain zero accidents.
3. To prepare for emergency situations, we conducted (1) fire extinguisher training, (2) disaster prevention training (shutdown, evacuation), and (3) leak response and other emergency training. Furthermore, (4) we held seminars and provided training to ensure that mobile powered pumps can be used by anyone.



Fire extinguisher training (August 3, 2017)

#### Osaka Office environment data

Items	Content (unit)	FY2013	FY2014	FY2015	FY2016	FY2017
Energy	Crude oil equivalent (kl)	204	203	164	106	68
Water	(1,000 m <sup>3</sup> )	2	1	2	1	1
	SOx (t)	0.0	0.0	0.0	0.0	0.0
Atmospheric emissions	NOx (t)	0.0	0.0	0.0	0.0	0.0
	Dust (t)	0.0	0.0	0.0	0.0	0.0
	CO <sub>2</sub> (t)	362	370	334	213	132
Waste	Amount (t)	80	89	109	81	88
	Final landfill (t)	5	6	4	1	5
Waste water	Volume* (1,000 m <sup>3</sup> )	0	0	0	0	0
	COD (t)	0.0	0.0	0.0	0.0	0.0

\* All treated as industrial waste

## Third-Party Verification

In accordance with the Nichino Group RC mid-term targets (FY2016-2020), we received an inspection for the verification of this newly issued CSR Report 2018 (March 2018). Verification was conducted at our Head Office and at Nichino Service Saga Plant. The inspection entailed confirming the rationality of our calculation methods and the accuracy of our figures for the performance benchmarks (figures) indicated in this Report, as well as the accuracy of information other than numerical figures. We also received advice on how to improve our Group RC activities.

Opinion Letter of Third-Party Verification for  
"Nihon Nohyaku Co., Ltd. CSR Report 2018"

March 28, 2018

For: Mr. Yosuke Tomoi  
Representative Director and President  
Nihon Nohyaku Co., Ltd.

■ Purpose of Verification  
The purpose of this verification is for the Responsible Care® Verification Center to assert an opinion from the perspective of experts in the chemical industry on the following matters regarding the CSR Report 2018 published by Nihon Nohyaku Co., Ltd. (hereinafter referred to as the Report and the Company respectively).

- 1) Rationality of calculation and aggregation methods for performance indicators (numerical) and accuracy of figures
- 2) Accuracy of non-numerical information
- 3) Responsible Care activities and CSR activities
- 4) Characteristics of the Report

■ Validation procedures

- At the Head Office, we investigated the rationality of aggregation methods for numerical figures reported by each site (offices and plants) and the accuracy of non-numerical information. This investigation involved questioning task supervisors and report creation staff regarding the contents of the Report and receiving disclosure of materials and explanations from task supervisors and report creation staff.
- At Nichino Service Saga Plant, we investigated the rationality of calculation methods for numerical figures reported to the Head Office, the accuracy of numerical figures, and the accuracy of non-numerical information. The Nichino Service Saga Plant investigation involved questioning task supervisors and report creation staff regarding the contents of the Report and receiving disclosure of materials and explanations from task supervisors and report creation staff, and cross-referencing this information with physical evidence.
- We used a sampling method for the investigation of numerical data and disclosed information.

■ Opinion

- 1) Regarding rationality of calculation and aggregation methods for performance indicators (numerical) and accuracy of figures
  - In regards to the calculation and aggregation methods and accuracy of numerical figures, at present, accurate calculations are being achieved but we expect that Nihon Nohyaku Co., Ltd. and Nichino Service shall work in an integrated manner to ensure a greater level of reasonableness and accuracy.
- 2) Regarding accuracy of disclosed information
  - Information disclosed in the Report was confirmed to be accurate. At the draft of the Report, we resulted in minor recommendations regarding the appropriateness of expressions and document ease of understanding but at present these matters have been revised.
- 3) About Responsible Care activities and CSR activities
  - As an agrochemical manufacturer, the Company has outlined the goals of developing highly effective and safe agrochemicals, working to ensure a steady food supply, and contributing to the SDGs mission of eliminating starvation. We highly appreciate that the Company is working diligently towards those goals.
  - We expected that the Company shall study, in the mid-term business plan, the CSR Promotion System, as well as strengthening its structure and enriching its contents without delay.
  - We highly appreciate that Nichino Service Saga Plant achieved zero "accident with working days lost" for a period of 18 years and 9 months.
- 4) Characteristics of the Report
  - We highly appreciate that the structure of the Report organically links to Group Basic Principles, Top Commitment, mid-term business plan, and feature articles, creating a format that is easy to understand for the readers.
  - We highly appreciate that the Report has presented that the Company proactively provides tours to the Research Center and plants, and accepts about 2000 people each year since 2012, to promote understanding of agrochemicals.

*Shigeki Nagamatsu*  
Shigeki Nagamatsu  
General Manager, Responsible Care Verification Center  
Japan Chemical Industry Association



Verification Day 2 (Nichino Service Saga - March 19, 2018)



Site inspection (Nichino Service Saga - March 19, 2018)



Verification Day 3 (Head Office- March 22, 2018)

Opinion letter of third-party verification



 **NIHON NOHYAKU CO., LTD.**

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We practice Green Purchasing.



In Sep. 2014, Nihon Nohyaku received a Development Bank of Japan loan based on the DBJ Environmentally Rated Loan Program.