

CSR Report 2019

Corporate Social Responsibility Report 2019



NIHON NOHYAKU CO., LTD.

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About the Nihon Nohyaku Group

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 2018 agrochemical fiscal year (October 2017 to September 2018, 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 2018. Information includes topics through March 2019.

[Issue]

March 2019 (Next: Planned for March 2020)

The Nihon Nohyaku Group (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 36.

- The Basic Principles of the Nihon Nohyaku 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 Nihon Nohyaku 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.

Based on the above Basic Principles, the Nichino Group is pushing forward the establishment of a CSR promotion system.

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.

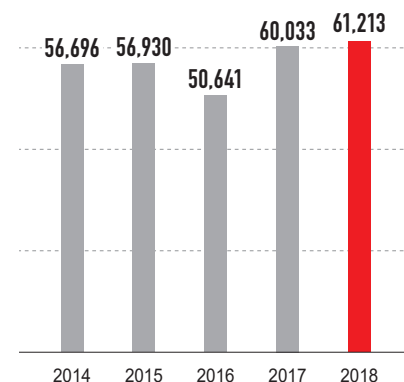


Financial and Non-Financial Highlights

Financial Information (consolidated)

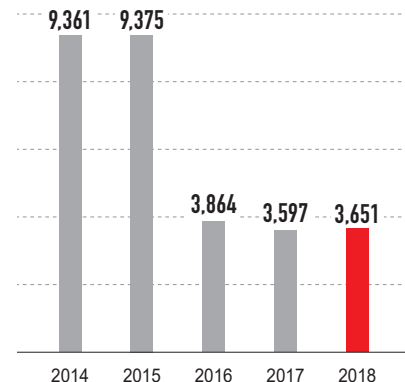
Sales

(million yen)



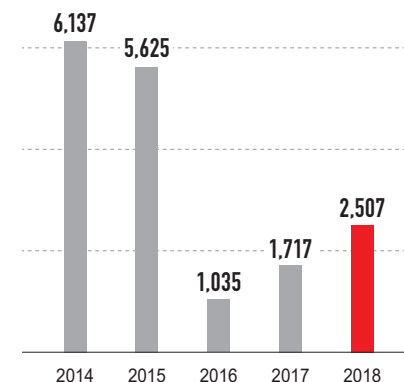
Ordinary income

(million yen)

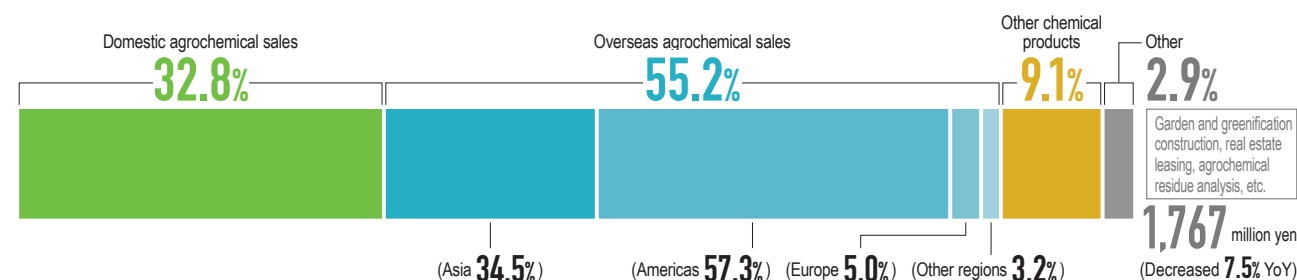


Profit attributable to owners of parent

(million yen)



Status by business division



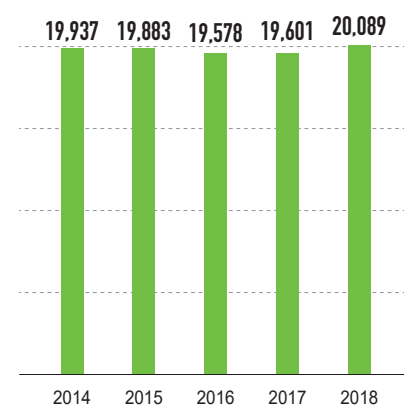
Domestic agrochemical sales

Sales

20,089 million yen
(Increased 2.5% YoY)



(million yen)



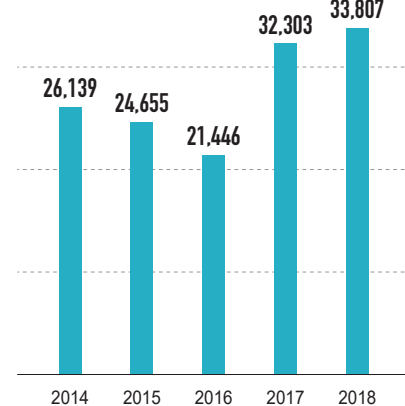
Overseas agrochemical sales

Sales

33,807 million yen
(Increased 4.7% YoY)



(million yen)



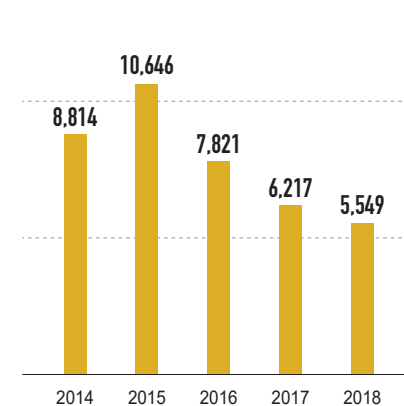
Other chemical products

Sales

5,549 million yen
(Decreased 10.8% YoY)



(million yen)

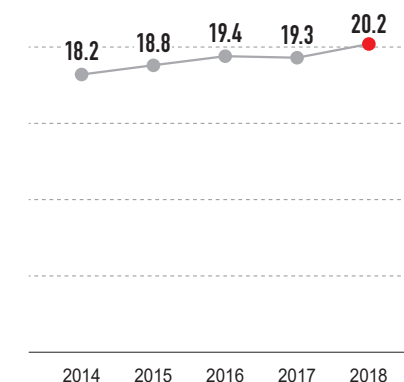


Non-financial Information

Rate of female employees

(Nihon Nohyaku Co., Ltd)

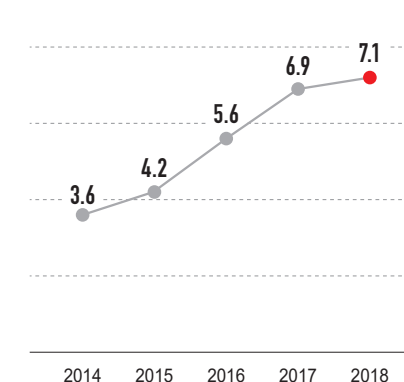
(%)



Rate of female managers

(Nihon Nohyaku Co., Ltd)

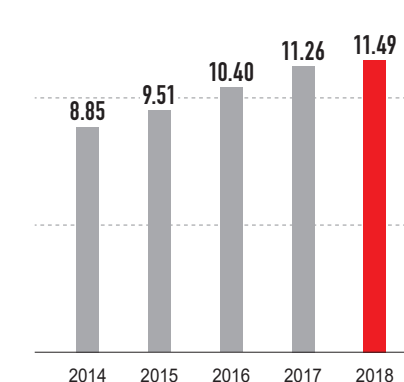
(%)



Paid leave days used^{*1}

(Nihon Nohyaku Co., Ltd)

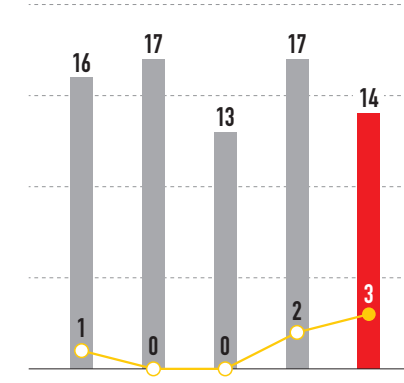
(days)



Number of male employees taking paternity leave^{*2}

(Nihon Nohyaku Co., Ltd)

(persons)

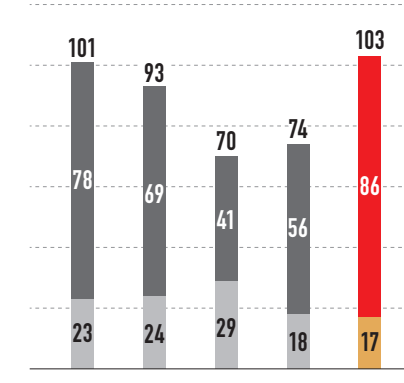


Female employee maternity leave usage rate was 100%

Number of patent applications filed

(Nihon Nohyaku Co., Ltd)

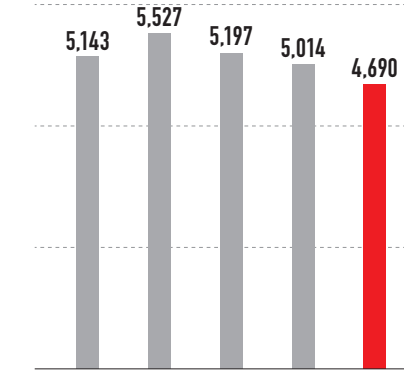
(Number)



R&D expenses

(Group consolidated)

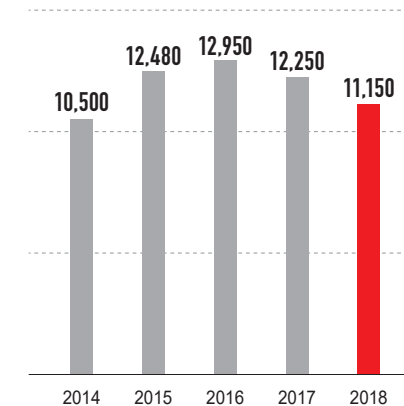
(million yen)



Charitable donations

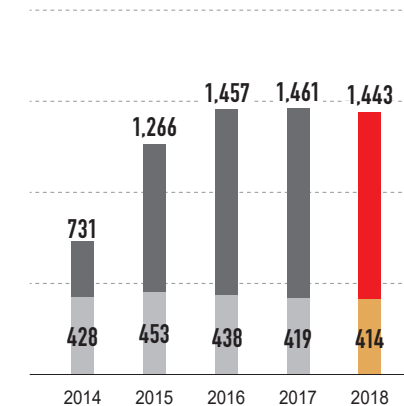
(Nihon Nohyaku Co., Ltd)

(thousand yen)



Number of employees

(persons)

■ Nihon Nohyaku Co., Ltd
■ The Nichino Group (consolidated)

- ^{*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

Our Mission as an Agrochemical Manufacturer: We Contribute to Steady Global Food Supply.

Nihon Nohyaku was established as the first agrochemical manufacturer in Japan and celebrated our 90th anniversary in November 2018.

We have been continuously creating new agrochemicals as an R&D-focused enterprise while constantly pursuing innovation in response to changing times.

The global population is expected to reach 9.8 billion people by 2050. As a global company, the Nichino Group contributes to ensuring safe and steady food supply by creating safer and more effective agrochemicals.



Nihon Nohyaku has helped develop society through agrochemicals

Nihon Nohyaku was established in 1928 as the first agrochemical manufacturer in Japan.

Agrochemicals are now recognized and widely used throughout the world as an effective means to maintain the harvest volume and quality of crops while eliminating pests and other factors harmful to the crops. In Japan, it was Nihon Nohyaku that used the term “NOHYAKU (agrochemical)” in the company name for the first time and spread the word throughout Japan.

Because agriculture is, unlike unmodified nature, an artificial process in which a single type of crop is planted across a wide area, stable harvest often comes with difficulty. In nature, diverse animals and plants fight for their survival, which inhibits certain types of pests and weeds from proliferating. However, agricultural fields such as rice paddies and crop fields tend to suffer from an unstable ecosystem and become susceptible to pests because those fields find use in growing a single plant species for the sake of efficiency. In addition, the growth of weeds results in depriving crops of necessary water and nutrients and preventing their photosynthesis. Agrochemicals are one of the safe and effective means to eliminate these pests and weeds and maintain harvest volume and quality.

Since its foundation, Nihon Nohyaku has upheld the mission of ensuring safe and steady food supply and improving the quality of life for all, striving for spreading agrochemicals, developing pest controlling techniques and promoting their safe and appropriate use.

Yosuke Tomoi

President

Toward an R&D-focused enterprise that creates safer and more effective agrochemicals

Nihon Nohyaku has been trusted by the market as a manufacturer that develops highly-safe, excellent new agrochemicals.

We believe that safe agrochemicals provide selective efficacy on targeted pests with low toxicity and volume. For example, Nihon Nohyaku’s insecticide APPLAUD (buprofezin) has a killing effect against plant hoppers, a rice paddy pests, and whiteflies and scale insects that harm cotton and fruits, but does not affect their natural predators such as birds, frogs, and spiders. APPLAUD inhibits molts of some hemipteran larvae such as plant hoppers, which molt as they grow, but does not act on any other animals or plants at all.

We have created such highly-safe, selective, and original agrochemicals, and this has enabled us to establish a unique position in the agrochemical market.

Promoting globalization toward sustained growth

For Nihon Nohyaku to contribute to ensuring safe and steady food supply, we must create new agrochemicals on a continuous basis. Creating new agrochemicals requires a significant amount of R&D investments, which is why Nihon Nohyaku has been working to expand our business scale, including through globalization in order to secure funds needed.

Our overseas business expansion has been making progress. In 1997, we established Nihon Nohyaku America, Inc. (currently Nichino America, Inc.) as we aimed to expand our business model based on the direct sales of proprietary agrochemicals, which was followed by the acquisition of Hyderabad Chemical Pvt. Ltd. (currently Nichino India Pvt. Ltd.), an Indian manufacturing and sales company, in 2015 and Sipcam Nichino Brasil S.A., a Brazilian manufacturing and sales company, in 2016, as consolidated subsidiaries.

The Nichino Group now has direct sales networks in countries in North America and Europe, as well as in other major agricultural producers including Brazil, India, Taiwan, Vietnam and Colombia, and overseas sales now account for more than 50% of our consolidated net sales.

Toward contributing to steady global food supply

The global population is currently 7.6 billion people and this is expected to increase by 28% to 9.8 billion people by 2050. To support such a large population, increased food production is essential. The Sustainable Development Goals (SDGs), adopted by the United Nations Headquarters in 2015 with the participation of leaders from over 150 member states, set out “Zero Hunger” as one of their goals.

One possible way of increasing food production is cropland expansion, but there seems to be little room for expansion because most regions have a limited amount of land suitable for agricultural cultivation. Using agrochemicals is one of the effective means to secure a stable harvest volume of crops in a limited amount of an agricultural field. Nihon Nohyaku conducts “All-around Screening”^{*} in research for new agrochemicals, applies the latest computer simulation technologies and works to diversify and expand research through open innovation that involves joint research with universities and public research institutions. In this way, we maintain and realize the target of “consistently launching new agrochemicals in every three years”, contributing to ensuring steady food supply.

Securing stable, continuous food production and quality is bringing a growing demand for new agrochemicals. But only several companies, including major multinational enterprises in the U.S. and Europe, as well as some companies in Japan, are capable of developing new agrochemicals, because synthesizing and screening agrochemicals requires advanced technology and abundant expertise. Therefore, we believe that the role played by the Nichino Group’s high capability to create new agrochemicals is significant.

^{*} A method in which one compound goes through an evaluation process that covers a wide range of fields including insecticide, fungicide and herbicide. This allows us to develop valuable compound efficacy without overlooking it.

Formulating a new Mid-Term Business Plan toward 2021

The Nichino Group has set “Growing Global to become an outstanding globally competitive group” in 2013 as its Group Vision. Under the Vision, we are committed to launching high value-added new and unique agrochemicals and expanding sales of quality generic agrochemicals and other highly-pervasive agrochemicals in Asian, South American and other countries with strong demands, in order to contribute to steady global food supply. Nihon Nohyaku sets net

I The Nichino Group Vision

Nichino Group Growing Global

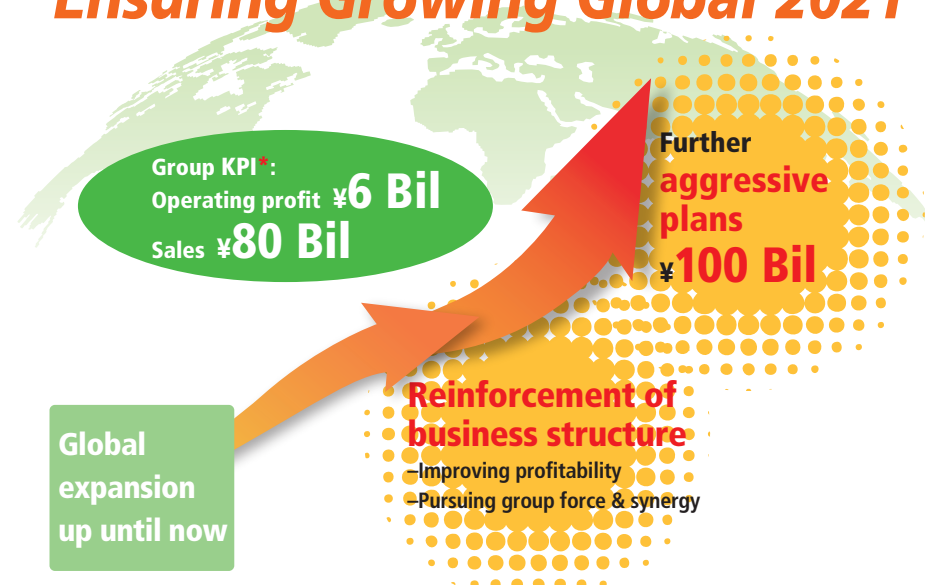
To become an outstanding globally competitive group

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

Mid-Term Business Plan

Ensuring Growing Global 2021



* KPI: An abbreviation for "Key Performance Indicator", which serves as an indicator for understanding the degree of achievement of targets of a company.

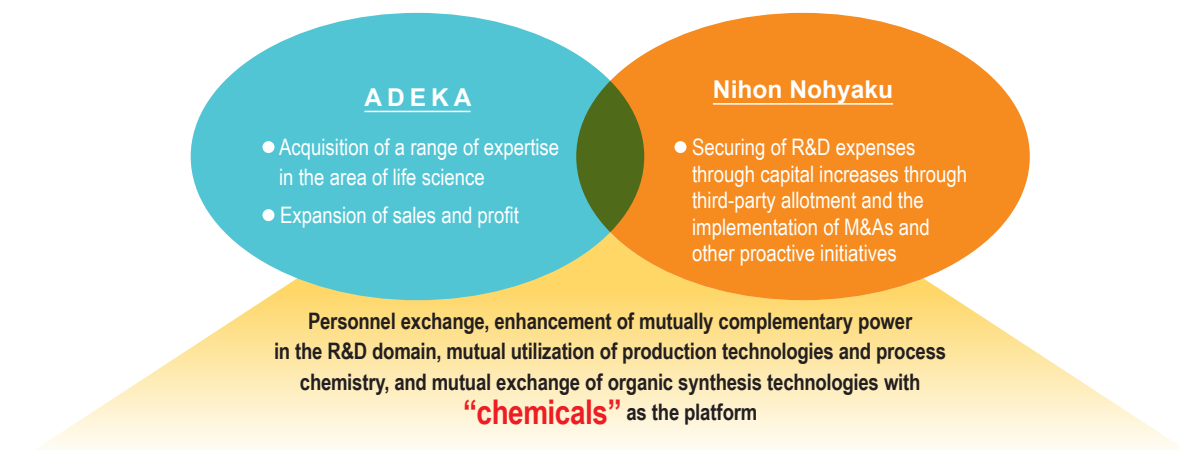
sales of over 200 billion yen, the largest in the agrochemical industry in Japan and among the largest worldwide, as its "ideal business scale", and will strive to realize this goal.

As a milestone for 200 billion yen in net sales, Nihon Nohyaku has formulated a new Mid-Term Business Plan "Ensuring Growing Global 2021 (EGG2021)" that sets the final year of FY2021. The new Mid-Term Business Plan aims to expand our operational capacity through maximized profit contribution of past investment and acquisition projects and execution of additional growth strategies. We aim to achieve consolidated net sales of 80 billion yen and a further aggressive goal of 100 billion yen by FY2021. The new Mid-Term Business Plan sets out "improving profitability" and "pursuing group force & synergy" as the two pillars. As for the former, we will work to improve profit margins and the capabilities of marketing, sales, new agrochemicals creation, and product development. With regard to the

latter, we will be implementing measures such as strengthening of the governance system, effective sharing of R&D functions, global procurement and building of a manufacturing system, with the aim of strengthening the global system and maximizing the Group functions. Additionally, we will work to create a work environment in which employees can work "*ikiiki-wakuwaku*" (meaning working with liveliness, excitement and joy) by implementing measures that help them realize their own growth. Such measures include an operation and workstyle reform project to improve employees' productivity and diversity promotion.

Nihon Nohyaku signed a capital and business alliance agreement with ADEKA Corporation in August 2018 to strengthen our financial foundation and create synergy. Nihon Nohyaku serves as a core enterprise in ADEKA Group's life science field while maintaining the independence of management.

I Synergy expected from the capital and business alliance with ADEKA Corporation



To our stakeholders

The Nichino Group has established the "Basic Principles of the Nichino Group", setting the three principles of 1) contributing to society by ensuring safe and steady food supply and improving the quality of life for all, 2) fulfilling market needs by creating superior values with innovative technologies and 3) committing ourselves to being a trustworthy company for all stakeholders through fair and vigorous business activities, as the base for all the activities of our employees. These Basic Principles, which are consistent with the common global SDGs, will serve as the basis for the Nichino Group to improve its CSR promotion system.

Under the situation where the global population is expected to continue growing, the Nichino Group has invested about 10% of net sales in R&D to focus on creating new agrochemicals as an R&D-focused enterprise and thereby contribute to steady global food supply, while achieving continuous growth. However, in the recent context of the soaring needs for the safety

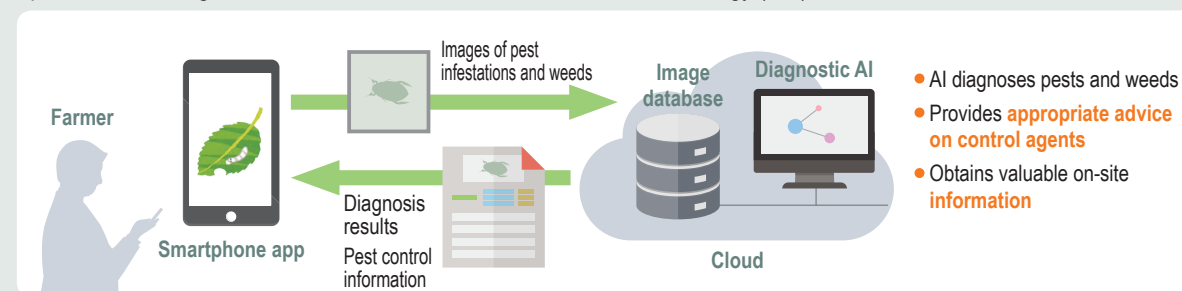
and selectivity of agrochemicals, Nihon Nohyaku is committed to accelerating growth by spending more time and cost than ever, with the aim of creating new agrochemicals and generating profits.

Nihon Nohyaku not only works to ensure continuous growth with a long-term perspective, but also participates in initiatives concerning smart agriculture utilizing AI and IoT, as well as IT related projects promoted by the Ministry of Agriculture, Forestry and Fisheries. By taking a proactive approach to these new movements and engaging in closer communication with our customers, we hope not only to improve our brand strength, but also to utilize a wealth of information obtained from our customers in R&D and marketing of the products of Nihon Nohyaku, and reflect them in our products and services.

We would like to ask all of our stakeholders to watch over the Nichino Group's initiatives with generous eyes in the years ahead, and we hope for their continuing support, encouragement, and understanding.

I Smart agriculture

Smart agriculture refers to a new type of agriculture that promotes the realization of laborsaving and high-quality production utilizing robotics and information and communication technology (ICT).





Nichino America, Inc.

Contribution to Safe and Stable Food Production in the United States, the Largest Crop Exporting Country

The U.S. is the second largest crop protection market in the world and the largest crop exporting country in the world. For international farm trade, obtaining Maximum Residue Limits (MRL) and Import Tolerances (IT) from the destination countries and regions for the export crops have become crucial requirements.

Therefore, U.S. agrochemical companies are responsible not only for crop protection but also for supplying safe food all over the world through the promotion of appropriate application timing and technique of agrochemicals. The safety and risk assessment standards needed for humans, animals and the environment - including water, soil and beneficial organisms - are becoming increasingly strict these days. Along with this movement, the number of requirements and the investment needed for acquiring and maintaining an agrochemical registration is also increasing year by year.

Jeffrey R. Johnson, the President of Nichino America, Inc. (NAI), talks about managing Nichino Group's activity in the U.S. under this increasingly challenging business environment.



Nichino America, Inc.
President
Jeffrey R. Johnson

Reference JMAFF "Status of Agriculture, Forestry, and Fisheries in the U.S." Updated July 3, 2017
http://www.maff.go.jp/j/kokusai/kokusei/kaigai_nogyo/k_gaikyo/attach/pdf/usa2-3.pdf

The development, registration and supply of newly discovered agrochemicals is the Nichino Group's mission

Since its establishment in 2001, NAI has been expanding its business by boosting direct sales to U.S. distributors, mainly selling Nihon Nohyaku proprietary products. One of the characteristics of NAI is that we put key focus on developing and selling agrochemicals for the high value crop market, rather than large acreage crops like corn and soybeans. Our products include, for example, flutolanil for white mold on peanuts, fenpyroximate for mites on tree nuts, buprofezin for scale insects on grapes and pyraflufen-ethyl as a cotton harvest aid. In the U.S. market, the number of insects, fungus and weeds, which are becoming tolerant against a variety of pesticides is increasing and effective agrochemicals are continually required. We have developed and launched tolfenpyrad in the U.S. citrus market, where growers are having difficulty with one of the most destructive citrus diseases - huanglongbing. Tolfenpyrad provides excellent insecticidal efficacy against Asian citrus psyllid, the insect which transmits this troublesome disease, and is now widely used as one of the best solutions by citrus growers trying to

control huanglongbing. In addition, we acquired the federal food crop registration for pyriproxyfen insecticide and launched it in 2019. Pyriproxyfen demonstrates outstanding efficacy against a variety of pests that are developing resistance to many current insecticides, such as aphids, citrus thrips and whiteflies. Additionally, we are now developing a novel fungicide pyraziflumid, which has high fungicidal efficacy against a broad range of diseases, and orthosulfamuron herbicide for weed control in tree nuts and grapevine fields. We will continue providing solutions that cater to the needs of the U.S. growers.

NAI's mainstay products



Contribution to customers through reliable information and technical support

We have strengthened our capabilities to develop and register new agrochemicals in tandem with expanding the business. Our consultative technical selling approach based on the collaboration of our Development, Regulatory, Marketing and Sales teams has been a key to this business expansion. Our Product Development Group finds ways to make full use of the potential abilities of our new and existing compounds by working with experts at universities and in Nihon Nohyaku, while implementing efficacy evaluations in actual farm field conditions. Our Regulatory Group builds and maintains a good relationship with the U.S. Environmental Protection Agency that allows us an open-minded discussion for obtaining new registrations, maintaining our current uses and setting MRL's/IT's. This successful approach is based on cross-departmental information sharing and collaboration with other Nichino Group companies. NAI's Sales team works closely with both our Product Development Group and Marketing team to match the biological performance of each product with market needs, providing optimal solutions to each customer. In

addition, the Sales team provides customer feedback to the Development Group to improve our products utility for the farmers. Based on these technology-based activities, many of our products contribute to increased crop yields and quality through an integrated management of pest infestations and weeds (IPM*).



* Integrated Pest Management: To control pest infestations and weeds that harm crops by combining cultural, biological, chemical and physical technologies, including agrochemicals, in an integrated manner.

column

Contribution to solution of customer issues through concerted efforts of the Product Development Group and Technical Sales Representatives



Many peanut growers in Georgia had struggled for many years with the soil-borne disease white mold, which causes significant yield loss. Our Product Development Group implemented a lot of field trials with the University of Georgia, which has a significant influence on pest control programs for peanuts in Georgia and established the status of flutolanil as the main product for white mold. Our local Technical Sales Representative, Mr. Wayne Brown identifies problems in existing disease control through deep communication with customers and proposes protection programs that respond to each of them, thereby establishing a relationship of trust. For example, we made a proposal for Mr. Gary Sauls, a large peanut grower in Shellman, Georgia, for two sequential applications of flutolanil at an interval of 30 days. This proposal had excellent results in improving the yield. Mr. Sauls continues to use the product and has high expectations for additional proposals for new products from the Nichino Group.

Nichino America, Inc.

Capital: 700,000 U.S. dollars

Founded: March 7, 2001

Number of employees: 44 (as of the end of September 2018)

Operating results: 65 million U.S. dollars in net sales, 7 million U.S. dollars in operating income, and 5 million U.S. dollars in net income (for the fiscal year ended September 2018)



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 Nihon Nohyaku Group.

* Nihon Nohyaku Corporate Governance Guidelines (drafted: November 13, 2015; enacted: December 22, 2015; and revised: November 13, 2018) (Excerpt)
https://www.nichino.co.jp/corporate/page_10060.html

Nihon Nohyaku examined the necessity of revisions to these Guidelines in consideration of the Corporate Governance Code of the Tokyo Stock Exchange ("CG Code") revised on June 1, 2018. As a result, we determined that, while the basic approach does not need to be revised, two points on the right need to be revised in accordance with the CG Code. Accordingly, these Guidelines were revised on November 13, 2018.

Revisions to the Corporate Governance Guidelines

- 1) **Clarification of the policy on reduced cross shareholdings: CG Code [Principle 1.4]**
 Clear statements were added to the effect that those shares held by Nihon Nohyaku under cross shareholdings that are obviously no longer in line with our holding policy shall be promptly sold off.
- 2) **Clarification of the policy and procedures for the dismissal of management executives: CG Code [Principle 3.1]**
 Clear statements were added to the effect that the Governance Committee, the advisory body to the Board of Directors, deliberates and reports the appropriateness, etc., of the process, reasons and other matters for dismissing a Director or a Corporate Auditor of Nihon Nohyaku upon a consultation request from the Board of Directors.

2. Corporate Governance Diagram

We have established "Basic Principles of the Nihon Nohyaku Group" as the base for all our activities. On the basis of the "Nihon Nohyaku 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 on next page).

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.

Nihon Nohyaku and the Group companies report to the Compliance Committee and the Group Compliance Council on the status of compliance with laws and regulations and various internal regulations.

In addition, Nihon Nohyaku and the Group companies report to the Risk Management Committee and the Group Risk Management Council on risk management issues, etc., after identifying their respective risks.

Corporate Governance Diagram



Governance Committee Nihon Nohyaku has established the "Governance Committee" as the advisory body to the Board of Directors to further improve our corporate governance.

The Governance Committee deliberate and reports the appropriateness, etc., of the process for appointing and dismissing candidates for Director or Corporate Auditor of Nihon Nohyaku, their qualification and reasons for appointment/dismissal, the independence standards for appointing independent officers, evaluations of the overall effectiveness of the Board of Directors, the officers' remuneration system and other matters upon a consultation request from the Board of Directors.

In principle, a majority of the members of the Governance Committee shall be independent officers.

The Board of Directors, upon receipt of the reports from the Governance Committee, shall select candidates for Director and determine the officers' remuneration system, etc.

Governance Committee meetings were held four times in FY2018.

Message from our External Directors

Activity Report from Independent Officers

The steady supply of food is put at risk following an increase in the global population, global warming and other factors. Under such circumstances, Nihon Nohyaku is dedicated to promoting safe and reliable agrochemicals, thereby supporting stable supply of food and making a wide-ranging contribution to agriculture as a whole.

To this end, Nihon Nohyaku has formulated the Basic Principles and the Action Charter and established a robust corporate governance system with its standing as an essential part of society in mind. Realizing a robust corporate governance system requires us to share the Basic Principles, thoroughly understand and enforce the company's Action Charter, build and maintain a compliance system, and ensure communication (atmosphere of openness) within the workplace. In this regard, the Board of Directors meetings of Nihon Nohyaku allow open and energetic discussions.

My strengths lie in accounting (currently certified public accountant examiner). As an External Director, I have proactively contributed to management decisions including the maintenance of our business foundation and important business activities, among others, from objective and social perspectives and the standpoint of a representative of shareholders, based on my expertise and a broad range of accumulated insight on management. As for governance activities, I have provided reports and advice mainly on selection and remuneration of candidates for officer, and evaluations of the effectiveness of the Board of Directors, as a member of the Governance Committee, the advisory body to the Board of Directors.

Nihon Nohyaku aims to become an outstanding, global R&D-focused agrochemical enterprise with our solid management foundation. In steadily expanding overseas, the company will need not only to continuously create new agrochemicals backed by research and technologies but to secure and foster new human resources. Overseas expansion also entails profitability boost through an efficient global strategy to achieve better consolidated operating results.

At the agricultural frontline, farmers are diligently and earnestly working every day to maximize harvests and improve their quality. To live up to their expectations, Nihon Nohyaku must continue growing as a company always trusted by stakeholders and society. As an independent officer, I am committed to proactively fulfilling my duties.



Yasunori Matsui
 External Director
 (Governance Committee Member)

Responsible Care activities



As part of Nihon Nohyaku's major CSR activities, we are engaging in Responsible Care (RC) promoted by the global chemical industry. In undertaking RC activities, the Nichino Group has established the RC Mid-Term Targets and is systematically carrying out the activities based on the RC promotion policies established by each of our domestic companies. This initiative also leads to realizing the SDGs.

What is Responsible Care (RC)?

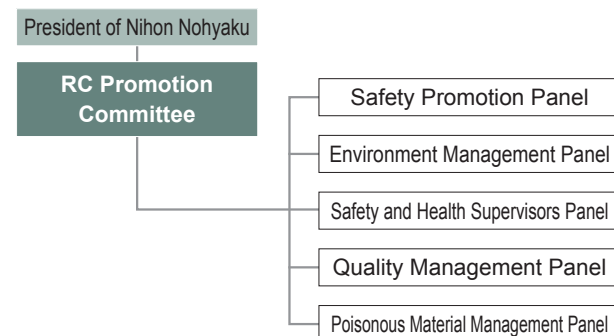
RC encompasses voluntary activities wherein each company handling chemical substances secures "the environment, safety and health" and publishes the results of its activities, maintaining a dialogue and communication with society regarding all its processes, ranging from R&D through manufacturing, sales, logistics, use, and final consumption, to the disposal and recycling of the chemical substances. We have six 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 Products Safety)" and "Communication with Society" in Japan, we work to improve activities through the continued implementation of the PDCA (Plan→Do→Check→Act) cycle.

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.

1. RC Promotion Diagram

Under our corporate governance system, the RC Promotion Committee governs the RC activities of the entire domestic Nichino Group, which are promoted by five panels (figure below). We participate in the JCIA RC Committee and have registered four domestic consolidated subsidiaries with the committee as affiliate companies. The Environmental Safety Department of Nihon Nohyaku conducts annual RC audits of all business sites of domestic Group companies.

Responsible Care Organization Diagram

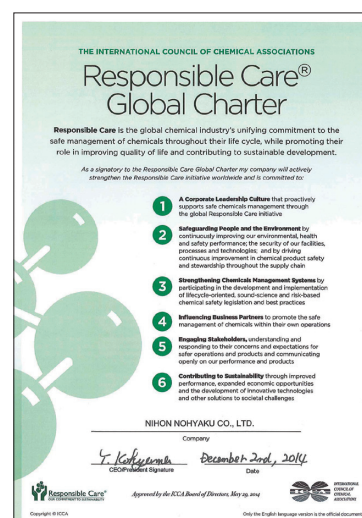


2. RC Global Charter

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 2019, the RC Global Charter has been signed by 580 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)	● Nichino Service Co., Ltd. ● Nichino India Pvt. Ltd.
ISO14001 (Environment Management System)	● Nichino Chemical India Pvt. Ltd. ● Sipcam Nichino Brasil S.A.
OHSAS18001 (Occupational Safety & Health Management System)	● Nichino Service Co., Ltd. ● Nichino India Pvt. Ltd. (Balanagar) ● Nichino Chemical India Pvt. Ltd. (Humnabad) ● Sipcam Nichino Brasil S.A.
ISO17025 (General requirements for the competence of testing and calibration laboratories)	● Nihon Ecotech Co., Ltd. (Osaka Analysis Center)

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	1. Maintain and expand Quality, Environment, and Occupational Safety & Health Management Systems 2. Enrichment and expansion of RC activities 3. Education of RC to overseas sites, introduction of RC methods into plants which has not introduced ISO management system yet
Occupational Safety & Health, Process Safety & Disaster Prevention	1. Achieving zero traffic accident during work/commuting, and maintaining zero accident causing lost worktime 2. Maintaining zero serious accident on the production equipment 3. Visualization of risk assessment methods
Environmental Protection	1. Reduction of 1% or more per year of energy consumption unit ^{*1} and reduction of CO ₂ emissions by promoting energy saving 2. Participation in Fun to Share ^{*2} activities of the Japanese Ministry of the Environment (JME) 3. Maintain and expand zero emissions ^{*3} 4. Green purchasing rate of 95% or higher for office consumables and designated products 5. Strengthening, maintain and expand green procurement standards for raw materials and ingredients 6. Continuing initiatives for a low-carbon society (plan based on status of nuclear plants and government policy)
Logistics Safety	1. Continuing zero serious logistics accident (scattering/spillage) 2. Enhancement of logistics conference with logistics companies
Product Stewardship (Chemical Materials & Product Safety)	1. Develop environmental and safety-conscious products and field testing, considering environment preservation and worker safety 2. Centralized management of safety information on chemical substances and appropriate provision to domestic and overseas subsidiaries 3. Improvement of product quality and thorough management
Communicating with Society	1. Creation of RC reports (in Japanese and English) on level with CSR reports and receiving third-party validation 2. Establishment of comfortable environment around business sites interacting and cooperating with the local communities 3. Participation in and promotion of activities for towards VISION 2025 of Japan Crop Protection Association (JCPA)

^{*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) FY2018 Activity Results and Internal Evaluation

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

RC Activities	FY2018			Page
	Major plans	Results	Evaluation ^{*1}	
General	1. Considering RC activities with focus on SDGs	1. Formulated the FY2019 RC promotion policy with focus on SDGs.	☀	—
Occupational Safety & Health, Process Safety & Disaster Prevention	1. Maintaining zero accidents with workdays lost, and conduct education and training aimed at achieving zero traffic accidents during work and commuting 2. Conducting maintenance and inspections to keep zero serious accidents at production facilities 3. Visualizing risk assessment corresponding to the revised Occupational Safety and Health Law in Japan	1. One accident causing lost worktime occurred. Zero traffic accidents has not been achieved (38 accidents in the previous year→37 accidents). Conducted extraordinary audit at Nichino Service Fukushima Plant. Conducted safety education at each plant and promoted initiatives for risk prediction (so-called KY and potential near misses). 2. Zero serious accidents in production facilities has been achieved continuously. 3. Provided information concerning revisions to laws and regulations to the Group companies and plants and conducted risk assessment.	☔	18-20
Environmental Protection	1. Promoting efficient energy consumption (goal: reduction of energy consumption unit 1% or more per year of energy consumption), continuing to consider evaluation method for energy consumption efficiency, continuing evaluation of consumption unit based on form of business and reduce CO ₂ emissions 2. Maintaining green purchasing rate of 95% or higher and improving green procurement rate 3. Promoting 3Rs ^{*2} for waste reduction and maintaining and expanding zero emissions 4. Continuing initiatives for a low-carbon society (Locavore ^{*3}) and consider Fun to Share initiatives 5. Grasping energy conservation goals and status of energy conservation activities of local governments of overseas Group companies	1. Energy consumption unit: Nihon Nohyaku -0.3%, Nichino Service +1.5%. Nichino Service was recognized for excellence in energy conservation (S Class) for a third consecutive year by JMETI. CO ₂ emissions: Total for Nihon Nohyaku and Nichino Service -3.6%. 2. Green purchasing rate at 99.5% (previous year: 99.3%); green procurement rate at 91.2% (previous year: 94.6%). 3. Waste amount decreased by 10%. Zero emissions: Nichino Service Saga Plant continues to meet the goal for a 15th consecutive year and Kashima Plant and Fukushima Plant for a fifth consecutive year. 4. Questionnaires continued on “Number of times of one pot dish” and “Energy conservation that can be done at home” ^{*4} . 5. Started surveys on India and Brazil.	☁	21-24
Logistics Safety	1. Conducting training to maintain zero serious accidents (scattering/spillage) in logistics 2. Strengthening of communication with logistics companies: holding regular logistics meetings with transport and warehouse companies 3. Continuing to provide Yellow Cards ^{*5} and White Cards ^{*6} 4. Promoting modal shift ^{*7}	1. Conducted training at each plant. Continued achieving zero serious accidents caused by scattering or spillage. 2. Information exchange meetings have been held among the SCM Department of Nihon Nohyaku, each Nichino Service Plant and related logistics companies. 3. Continued. 4. Decreased slightly due to an increase in small-lot shipments.	☁	25

^{*1} Internal evaluation of actual results: ☀ Achieved ☁ Partially achieved ☔ Not achieved
^{*2} Reduce, Reuse, Recycle
^{*3} 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 CO₂ when combined with “local consumption of local products” and expanded consumption of “domestic agricultural and marine products”.
^{*4} 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.
^{*5} Cards which include concise indications of contact information, handling methods and precautions for prompt response to an accident during the transport of toxic substances, poisons or hazardous materials/designated flammable substances stipulated by the Fire Service Act.
^{*6} Cards unique to Nihon Nohyaku that indicate similar information as Yellow Cards for products for which the carrying of a Yellow Card is not required.
^{*7} Switching the transportation of raw materials and products from trucking to rail freight and transshipment with less CO₂ emissions.

RC Activities	FY2018			Page
	Major plans	Results	Evaluations	
Product Stewardship (Chemical Materials & Products Safety)	1. Continuing to eliminate PRTR ^{*8} inert ingredients in new products Substituting 50% of NPE ^{*9} in existing products (continue non-use of NPE in new products) 2. Continuing appropriate management of chemical substances and conduct necessary education and training 3. Conducting risk assessment Continuing measures to prevent accidents due to chemical substances 4. Promoting SDS ^{*10} information provision and sharing internally and with domestic and overseas subsidiaries in the Nichino Group 5. Continuing to provide information on revisions to laws and regulations concerning chemical substances	1. Nine new products not containing NPE have been launched. The NPE substitution study for existing products is being continued. 2. Revised the standards in response to inappropriate operation of chemical storage of Nihon Nohyaku Head Office. Performed safety education at each plant. 3. Conducted at each plant as planned and worked to prevent accidents. 4. Provided environmental and safety information to domestic and overseas affiliates. Continued updating of SDS under GHS. ^{*11} Introduced an automated SDS creation system. 5. Obtained information concerning revisions to laws and regulations and disseminated 130 pieces of the information to relevant departments.	☀	25-27
Communication with Society	1. Continuing to participate in community activities, collaborate with local communities to improve the environmental conditions around the plants 2. Considering expansion of activities to overseas subsidiaries (such as RC information provision and survey on environment and occupational safety) 3. Issuing the CSR report 4. Receiving JCIA inspection for the CSR report 5. Participating in and promoting activities toward Japan Crop Protection Association (JCPA) VISION 2025 (improving product labels)	1. Continued participation in community activities by each plant. Nichino Ryokka participated in “Street Cleanup Day”. 2. Provided the CSR report and RC-related information. 3. Issued the Japanese version in April and the English version in July. Included initiatives concerning smart agriculture and Women in Agriculture Project. 4. Received JCIA inspection (March 2018). 5. Participated in each committee of JCPA, took actions on the revised Agricultural Chemicals Control Act (draft) and continued education to ensure proper use of agrochemicals.	☀	28-31

^{*8} Pollutant Release and Transfer Register
^{*9} Polyoxyethylene nonylphenyl ether
^{*10} Safety Data Sheet
^{*11} Globally Harmonized System of Classification and Labelling of Chemicals

3) FY2019 Activities

RC Activities	Major topics
General	1. Discussing CSR promotion system building. 2. Examining the next-term RC Mid-Term Targets (draft outline) taking SDGs and CSR into consideration. 3. Improving efficiency and accuracy of performance data calculation.
Occupational Safety & Health, Process Safety & Disaster Prevention	1. Conducting education and training to raise safety awareness and sensitivity to risks with the aim of achieving zero work-related injuries and traffic accidents while commuting. 2. Conducting maintenance and inspections to maintain zero serious accidents at production facilities and periodic training. 3. Conducting systematic risk assessment, SOP education, near misses and KY and indications at workplaces.
Environmental Protection	1. Promoting energy conservation (goal: reduction of 1% or more per year of energy consumption unit), continuing study on the calculation methods for consumption unit, continuing the evaluation of consumption unit based on the form of business and reviewing energy sources with the aim of reducing CO2 emissions. 2. Maintaining green purchasing rate of 95% or higher, improving green procurement rate. 3. Promoting 3Rs and reducing waste by maintaining and expanding zero emissions. 4. Continuing initiatives for a low-carbon society (Locavore).
Logistics Safety	1. Conducting training to maintain zero serious accidents caused by scattering or spillage. 2. Holding regular logistics meetings with transport and warehouse companies. 3. Preventing problems through continued provision of Yellow Cards and White Cards and strengthening of their linkage. 4. Continuing to promote modal shift.
Product Stewardship (Chemical Materials & Product Safety)	1. Continuing efforts to avoid using NPE and reducing PRTR inert ingredients in new products. Substituting 50% of NPE in existing products (continue non-use of NPE in new products). 2. Continuing appropriate management of chemical substances and conducting necessary education and training. 3. Conducting risk assessment and continue measures to prevent accidents due to chemical substances. 4. Promoting SDS information sharing within the Nichino Group. Starting full operation of the automated SDS creation system early. 5. Continuing to provide information on new regulations of chemical substances.
Communication with Society	1. Continuing to participate in community activities, collaborating with local communities and improving the environmental conditions around the establishment. 2. Expanding activities to overseas subsidiaries (RC information provision, etc) . 3. Strengthening exchange with stakeholders through issuance of CSR Report 2019 and information provision on the website. 4. Continuing activities toward the Japan Crop Protection Association (JCPA) VISION 2025.



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, 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 the health of our employees and support their work-life balance, we have established more programs than required by law (table below). In FY2018, we promoted volunteer leave for the Tokyo 2020 Olympic and Paralympic Games in response to employee requests. To respond to diversifying workstyles, we adopted a flex-time system, and in FY2019, we will establish a more employee-friendly environment by introducing systems for working from home and shorter working hours. In addition, we appointed a “Diversity Special Mission Promotion Manager” to create a working environment in which employees with diverse values (gender, age, nationality, workstyle, sexual orientation, gender identity, etc.) are able to demonstrate their capabilities at their full potential. Going forward, we intend to proactively work on diversity.

Major internal programs

Field	Program
Maintaining and promoting the health of employees	Full physical examinations for employees over age 40 and long-term sick leave
Support for work-life balance	Allocating refresh vacations and travel coupons based on the number of consecutive years of employment, Half-day paid leave, Family care leave, Volunteer 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 and shorter working hours for expectant and nursing mothers

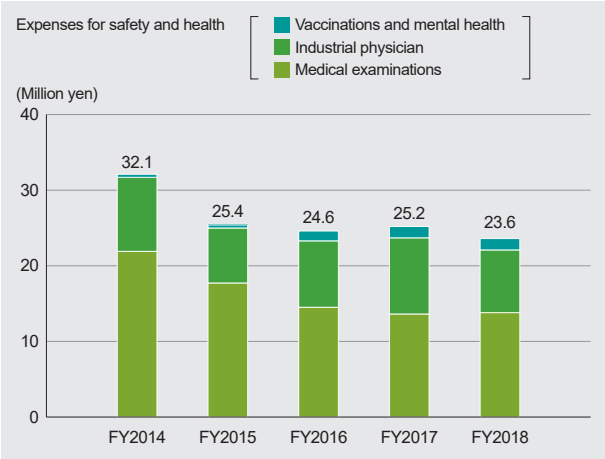
2) Promotion of Safety and Health Management

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 with high levels of stress. These efforts promote a better work environment for our employees. We maintain 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

We allocate necessary expenses each year to improve safety and health, and towards mental healthcare. The spending over the past five years are shown in the figure below.



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.

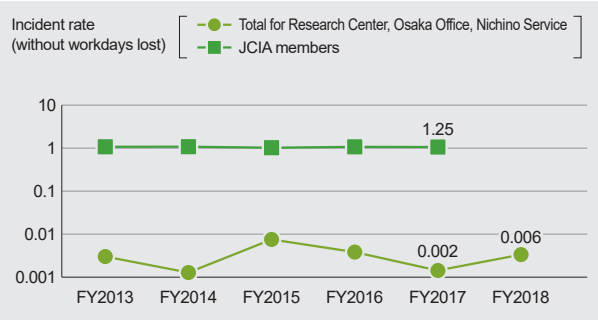
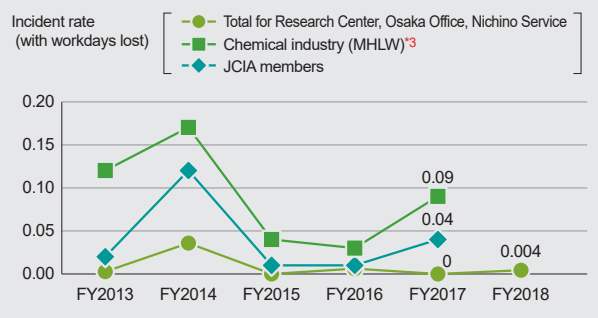
5) Incident Rate*1 and Record of Zero-Occupational Accident*2

At domestic Group companies, unfortunately, there was one accident with workdays lost (accident that occurred while commuting for which the injured person was not responsible; zero accidents in the previous year) and there were seven accidents without workdays lost (six accidents in the previous year).

The total incident rate concerning accidents with workdays lost for the Research Center, the Osaka Office and Nichino Service was below the average level for the chemical industry and JCIA members. The total incident rate concerning accidents without workdays lost*5 remains low. We will continue to promote the prevention of work-related injuries as we aim for zero accidents.

Record of Zero Occupational Accidents

	Site	Total No. of Days	Total hours (1,000 hours)
Nihon Nohyaku	Research Center	2,985	2,309
	Osaka Office*4	791	479
Nichino Service	Fukushima Plant	1,707	648
	Kashima Plant	1,931	438
	Saga Plant	6,940	2,916



*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 FY2018 Survey on Trends in Work-Related Accidents (Office survey (offices with 100 or more employees) and general construction business survey) (May 7, 2018: MHLW).
*4 Includes figures for the Osaka Storage / Delivery Group of Nichino Service Saga Plant.
*5 A scale for indicating the frequency of accidents without workdays lost, calculated using the formula {number of accidents without workdays lost (persons)/total working hours (per million hours)} (including accidents without workdays lost while commuting).

2. Process Safety & Disaster Prevention

1) Response to Earthquake Disaster

Nihon Nohyaku Head Office gave training to ensure smooth coordination between the Head Office and each of the plants when a near-field earthquake occurs in the Tokyo Metropolitan area. 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 its efficacy.

2) Safety Management of Facilities

We conducted planned risk assessments and mandated inspections for facilities and equipment. We monitor waste water based on voluntarily 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.

3) Training for Emergency

Topics are introduced on the right.

Nihon Nohyaku

At the Head Office, we participate in joint firefighting drills held by our building manager each year, and in FY2018, we took the Standard First Aid Course. At the Research Center, we conducted large-scale disaster prevention training, including training for fire reporting, and participated in firefighting skill improvement training held by the local fire department. At the Osaka Office, we conducted leak response training on account of the site's role as a logistics center, in addition to disaster prevention training.



Standard First Aid Course (Head Office: June 19, 2018)



Large-scale disaster prevention training (Research Center: November 2, 2017)



Leak response training (Osaka Office: December 14, 2018)

Nichino Service

At each site, we conducted firefighting training and emergency situation training to address potential raw material or product leaks caused by natural disaster or accidents. Also, we provided direct-experience safety education and implemented a campaign to strengthen the ability to detect potential near misses (risk prediction) to improve sensitivity to risks.



Emergency situation training (Nichino Service Fukushima Plant: September 6, 2018)



Firefighting training (Nichino Service Kashima Plant: May 9, 2018)



Direct-experience safety education (Nichino Service Saga Plant: July 20, 2018)

Nichino Ryokka, Nihon Ecotech, and AgriMart

We continued providing these companies with annual training to ensure that they can take appropriate measures in case of emergency in the same manner as in the branches and sales offices of Nihon Nohyaku.

4) Other Topics

The Research Center established the “4-4 Feel Safety Day at Nihon Nohyaku” based on lessons learned from past accidents and held a seminar given by its General Manager concerning the theme. It also provided a safe driving lecture to prevent automobile accidents, a lecture concerning honeybees given the recently growing number of sting accidents from honeybees for research use, among other themes, to raise safety awareness.



Safe automobile driving lecture (Research Center: June 20, 2018)



Lecture concerning honeybees (Research Center: September 19, 2018)



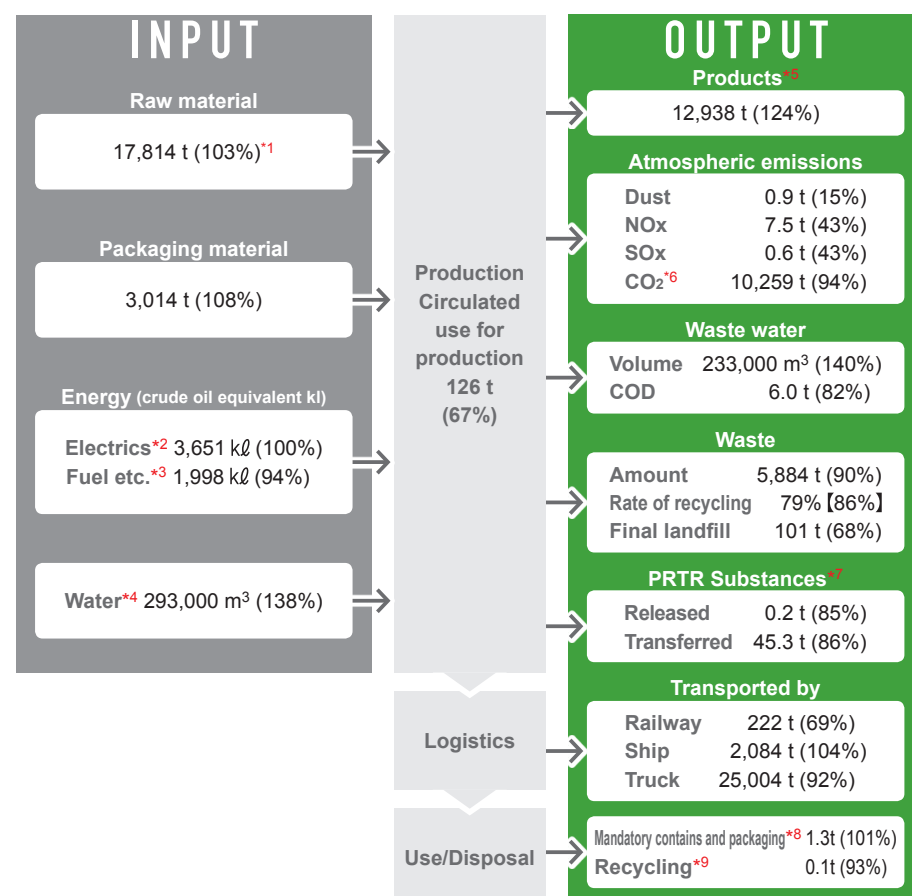
Environmental Protection



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.

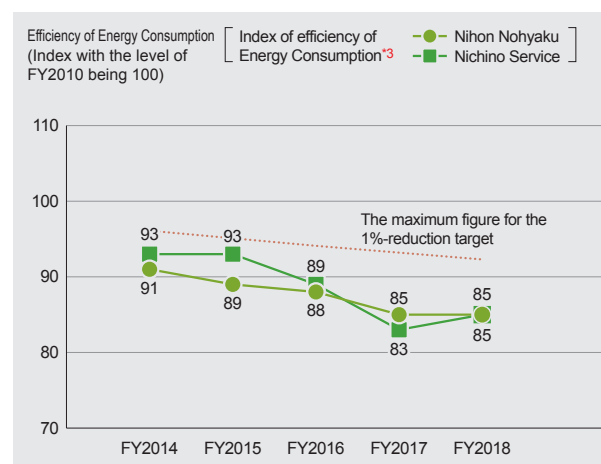
- *1 The round brackets indicate comparisons with the previous year, and the square brackets indicate percentage points in the previous year.
- *2 Purchased electricity calculated as crude oil equivalent.
- *3 Amount of heavy oil, light oil, kerosene, gasoline, city gas, LP gas, and purchased steam are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



2. Environmental Impact

1) Efficiency of Energy Consumption

As specified business operators defined in the Energy Conservation Act*1, 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. Both of the companies failed to reach the FY2018 targets (Nihon Nohyaku: 0.3% reduced, and Nichino Service: 1.5% increased) due in part to changes in the produced items and increased energy consumption for air conditioning caused by the effects of weather. On the other hand, Nichino Service was officially recognized for excellence in energy conservation (S Class) for a third consecutive year under the Business Classification System of the Energy Conservation Act*2. We also set standards according to the business forms and began conducting efficiency of energy consumption evaluations at other domestic Group companies as part of efforts to optimize energy consumption.

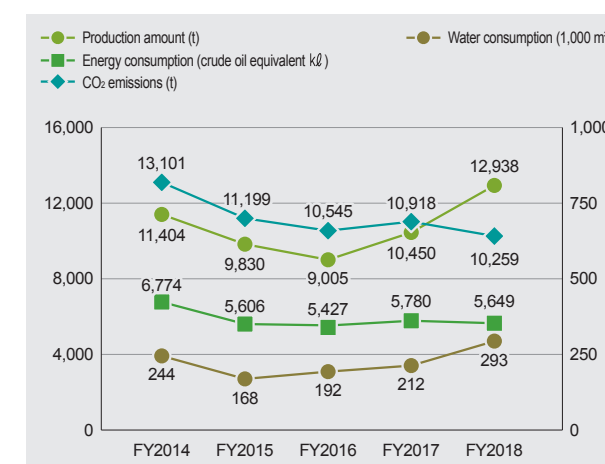


- *1 Abbreviation for the "Act on the Rational Use, etc. of Energy"
- *2 A system under which business operators are officially recognized for excellence in energy conservation (S Class) if they meet the nonbinding targets defined by the Japanese Government (annual reduction of 1% or more on average) or the benchmark targets (e.g., the figure of energy consumption in the manufacture of iron and steel with blast furnaces, divided by the amount of crude steel should be 0.531 kl/t or lower for the iron industry, with blast furnaces) in the past five-year average of the year-on-year changes in the efficiency of energy consumption to be reported on a periodic basis to the government. The operators are categorized into four ranks: S, A, B and C.
- *3 Index for each fiscal year when the efficiency of energy consumption for FY2010 is set as 100.

2) Energy Consumption, CO2 Emissions, and Water Consumption

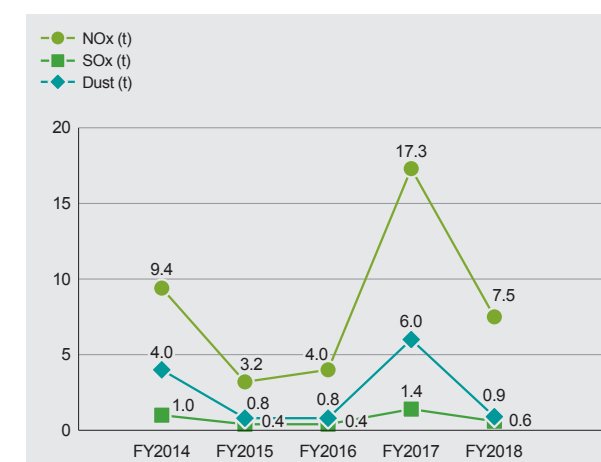
Due to changes in the produced items, energy consumption (crude oil equivalent) decreased by 2.3% from the previous year, and CO2 emissions* decreased by 6.0%. Water consumption increased by 37.9% from the previous year.

* The CO2 emissions are calculated using the latest emission coefficient (published in November 20, 2018) and the following formula. However, as the CO2 emission coefficient of the power companies for April through September 2018 remains to be finalized, the figures for FY2018 are tentative and use the coefficient for the same period of the previous year (the same below).
CO2 emissions (t) = Σ{consumption volume by type of fuel x energy conversion coefficient by type of fuel (fixed)} x CO2 emission coefficient by type of fuel (fixed) + Σ{power consumption volume by power company x CO2 emission coefficient by power company (variable)}



3) Emission to Atmosphere

Nitrogen oxides (NOx) emissions derived from exhaust gasses from boilers, etc., decreased by 9.7 t from the previous year thanks in part to changes in the produced items and improved facility operating conditions. Sulfur oxides (SOx) and dust emissions also decreased, both being at relatively low levels. Exhaust gases are appropriately managed to comply with the exhaust level standard and other standards.



4) Waste

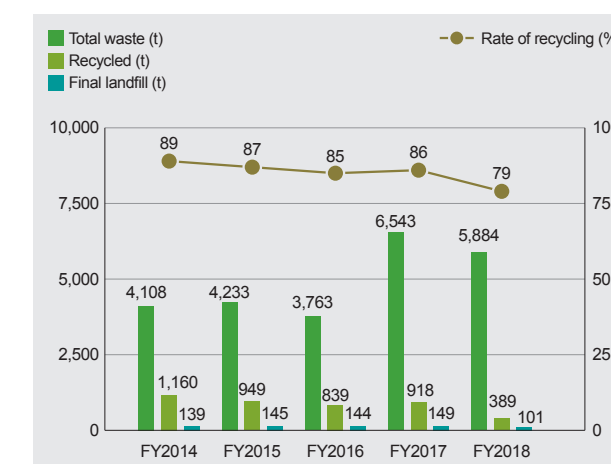
(1) Amount of waste

The amount of waste decreased by 10% from the previous year following changes in the timing of disposal at the Research Center and changes in the produced items 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. The final landfill amount from the Research Center decreased following changes in the timing of disposal of testing soil, and the Nichino Service Fukushima Plant, Kashima Plant and Saga Plant continuously achieved zero emissions. The rate of recycling* decreased from the previous year as a result of a decrease in the amount of waste to be recycled such as disposed paper and metal scrap.

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



(3) Survey and inspection of waste disposal contractors

We outsource waste disposal to contractors capable of properly treat waste and continue on-site surveys and inspections of the final landfill sites.

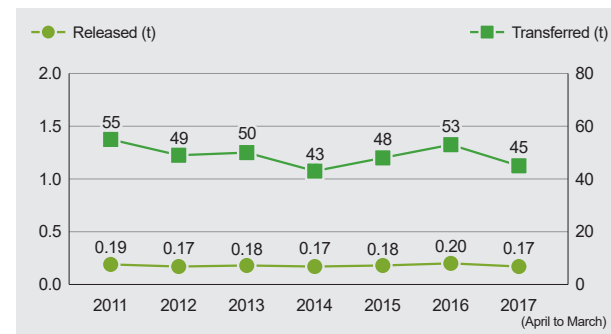
(4) Waste containing PCB

We have stored strictly highly concentrated PCB waste and waste containing minimum amounts of PCB*1, under strict leakage prevention system and dispose systematically in accordance with the PCB Special Measures Act*2.

- *1 Refers to electrical device waste products that unintentionally contain minimum amounts of PCB, manufactured after the termination of PCB manufacturing.
- *2 Abbreviation for the "Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes".

5) PRTR Law^{*1} Applicable Hazardous Substance Released and Transferred Amount^{*2} (Cumulation period: April 2017 - March 2018)

Both the released amount^{*3} (down 15.1% YoY) and the transferred amount^{*4} (down 14.4% YoY) decreased from the previous year due to changes in the produced items and other factors.



- ^{*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 Nihon Ecotech Fukushima and Osaka Analysis Center.
- ^{*3} Release to atmosphere, public waters, soil, and landfill.
- ^{*4} The amount of substances including those transferred to sewer works and for which disposal was consigned to a waste disposal contractor (excluding the 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	1	n - Hexane
2	2	2	Xylene
3	3	3	Triethylamine
4	4	4	Ethylbenzene
5	8	5	Fenitrothion ^{*5}
6	5	6	1,2-Dichloroethane
6	5	6	Buprofezin ^{*5}
8	11	8	Hydrazine
9	5	5	Isoprothiolane ^{*5}
10	13	10	Diazinon ^{*5}
			Other
			Total

Transferred amount			
Rank	Current Y	Previous Y	Substance name (t)
1	1	1	Chlorobenzene
2	2	2	Xylene
3	5	3	Ethylbenzene
4	3	4	n - Hexane
5	4	5	Acetonitrile
6	10	10	Poly (oxyethylene) = alkyl ether (limited to those having 12 to 15 carbon atoms in the alkyl group and said compounds)
7	9	7	Flutolanil ^{*5}
8	7	14	Oxine-copper ^{*5}
9	14	11	Fenitrothion ^{*5}
10	11	11	Buprofezin ^{*5}
			Other
			Total

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

Energy consumption and CO₂ emissions, among others, decreased following changes in the produced items and other factors.

Effect item	Details	Item (unit)	YoY change	Change (%)
Pollution prevention	Air/water pollutant emissions	Dust (t)	-5.1	-86
		NOx (t)	-9.7	-56
		SOx (t)	-0.9	-60
		COD (t)	-1.6	-21
Global environmental protection	Greenhouse effect gas emissions	CO ₂ (t)	-659	-6
		Energy (crude oil equivalent)(k ₂)	-131	-2
		Water (1,000 m ³)	+80	+38
Resource recycling	Waste	Amount (t)	-659	-10
		Final landfill amount (t)	-48	-32

4. Activities towards Green Purchasing and Green Procurement

Nihon Nohyaku is enrolled in the Green Purchasing Network, through which we proactively promote green purchasing in tandem with our domestic Group companies. Our green purchasing rate for our entire Group is 99%, surpassing our goal (95% or higher). We will continuously promote the purchase of office supplies and other items taking into consideration not only quality and prices, but also environmental friendliness.

The green procurement rate concerning raw materials, subsidiary materials, and other materials, decreased from 95% in the previous year to 91% in this fiscal year due to an increase in the number of procured items. We will continue 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.

3. Environmental Accounting

1) Environmental Protection Costs

Total facilities investments related to upgrading to energy efficient equipment and new product development were 213 million yen (up 173.5% from previous year). On the other hand, personnel, facility maintenance, and related expenses^{*1} were 753 million

yen in total (down 2.9% from previous year). Of those expenses, 500 million yen (66% of expenses) were related to environmental protection spending within R&D.

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

Environmental Protection Costs (Unit: million yen) ^{*2}				
Classification	Details of major initiatives	Investments	Expenses	
1. Costs within business area	(1) Pollution prevention	Prevention of air pollution, water pollutant, bad odor	28 (+22)	129 (+7)
	(2) Global environmental protection	Prevent global warming by energy conservation	103 (+56)	2 (-7)
	(3) Resource recycling	Industrial waste, general waste disposal	13 (+13)	112 (+1)
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	10 (-3)	
4. R&D costs	R&D for products contributing to environment protection	69 (+45)	500 (-21)	
5. Social activity costs	Donations/support for organizations involved in environmental protection	0	0	
6. Environment damage response costs	Pollutant recovery costs	0	0	
Total		213 (+135)	753 (-22)	

^{*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.

5. Efforts towards Creating a Low-Carbon Society

We have been taking part in the Action Plan for Low-Carbon Society led by the Japan Business Federation (Keidanren) since 2010 and are promoting the following initiatives in addition to CO₂ emissions reductions.

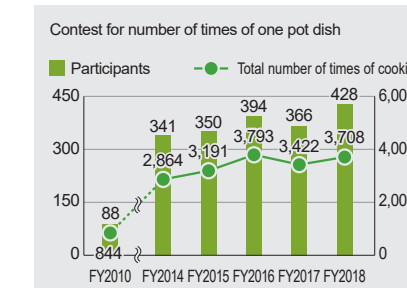
1) Supplying Renewable Energy

We installed a solar power generator in Nichino Service Saga Plant. All power generated by the facility (1,678 MWh) is sold to power companies, which contributes to CO₂ emission reductions by reducing the output coefficient of the power company.

2) Promoting Locavore

The Nichino Group companies registered their activity declarations with "Fun to Share" promoted by the Ministry of the Environment, on a plant or company basis, using "Locavore", our original social contribution activity, as the common word in the declarations. We hold a contest in the winter to see who makes a one pot dish (*nabe*) most often (December through February). The contest is aimed at reducing food mileage through

increased consumption of agricultural and marine produce with a high rate of domestic self-sufficiency. The contest drew saw 428 participants this time. They cooked a one pot dish 8.7 times on average, and the winner cooked it 80 times. In the summer, we again conducted a survey on "Energy conservation that can be done at home", which had 566 participants (August). Both of the events drew a larger number of participants compared with the previous year and contributed to raising awareness of CO₂ emissions reduction during the transport of foods and at home.





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. We created White Cards in FY2010 and have been using them to indicate similar information as Yellow Cards on the back of invoices for products for which carrying a Yellow Card is not required, thereby striving to promote logistics safety.



Invoice

Our original invoice with the White Card

2. Product Development Considering Environment / Safety and Animal Welfare

1) Development of Safe Agrochemicals

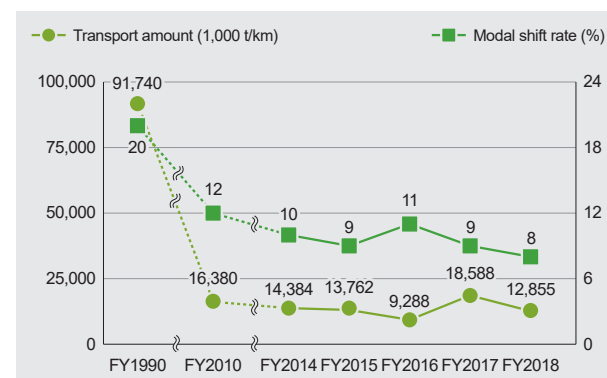
Agrochemicals used today must not only protect crops from pest infestations and weeds, but also must give due consideration to the impact on humans and the environment. We conduct R&D with the goal of developing agrochemicals from the perspective of the environment, safety and health. We have been promoting an accelerated and multifaceted 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. We also have all domestic Group companies maintain a system to monitor revisions to laws and regulations to ensure compliance.



2) Promotion of Modal Shift

While the transported amount of products and intermediate agents was almost flat from the previous year, CO₂ emissions related to logistics were 2,163 t (down 7% YoY) due to shorter transport distances by truck. To reduce CO₂ emissions, we have worked on a modal shift to convert the method of transport mainly between Nichino Service plants from trucking to railway or marine freight. However, our modal shift rate* in FY2018 was 8%, down 1 percentage point from the previous year, due to a decline in the railway freight ratio. 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) New Products in Consideration of the Environment, Safety and Health

Parade 20 Flowable (for vegetables) Parade 15 Flowable (for fruit trees)

Nihon Nohyaku acquired agrochemical registrations of "Parade® 20 Flowable" and "Parade® 15 Flowable", our proprietary fungicides using pyraziflumid as an active ingredient, on March 30, 2018, and launched them in April 2018.

Parade 20 Flowable is a fungicide mainly used for beans, vegetables and flowers, and Parade 15 Flowable is used for fruit trees. They demonstrate high efficacy against a wide variety of diseases including gray mold, stem rot, powdery mildew, scab (a major disease of apples), alternaria blotch, brown blotch, ring rot and brown rot.

These products are effective against a broad range of diseases owing partly to the effect of inhibiting the respiration of fungi (SDHI: succinate dehydrogenase inhibitor). They are also excellent in sustainability of effects and are usable in many crops even the day before harvesting because of the low risk of harmful effects on the approved crops. Drawing on these characteristics, we are committed to contributing to disease control of various crops.



Developer's Voice

Parade development and its future outlook

Parade is a long-awaited general fungicide agent that covers a broad range of crops and diseases. Thanks to the cooperation of relevant departments, we could commercialize and launch the product quickly after registration. The fungicide is favorably received by users, and I believe that it helps Nihon Nohyaku grow further. We are currently working to expand the application of the product to soil drench treatment for cell seedlings as a laborsaving control method, whereby increasing the value of Parade even further.



Kazuhiko Kikutake
General Manager of the Development Dept.
(assumed the position in December 2018)

3. Management of Safety Information on Raw Materials and Products

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

We have created the SDSs for approximately 700 items based on the latest JIS standards and provided it both inside and outside Nihon Nohyaku with the goal of ensuring the safe handling of our agrochemicals and other chemical products, and preventing work-related injuries and other accidents. Also, we are developing a system that allows relevant departments at the Research Center and Nichino Service to browse and utilize the SDSs for all raw materials and products and other information via our internal LAN. Overseas, we are required to address GHS response requirements outlined in laws related to chemical substances in the EU, Korea, China and the USA. We are not only cooperating with our Group company Nichino Europe Co., Ltd. to continue revising the SDSs for the EU into REACH^{*1}-compliant the SDSs based on the latest CLP regulations^{*2}, but also responding to the regulations of each country and other globalization requirements. We introduced an automated SDS creation system at the end of FY2018 to refine and streamline operations to create and revise SDS.

*1 Registration, Evaluation, Authorisation, and Restriction of Chemicals: A comprehensive system for registration, evaluation, approval and restriction of chemical substances in Europe

*2 Regulation on Classification, Labelling and Packaging of substances and mixtures: The EU Regulation that stipulates methods of classification, labelling and packaging of chemical products. Classification methods based on GHS have been adopted and have gradually been applied since December 1, 2010. There is a need for product labels, SDS, etc., for chemical substances distributed within the EU, to conform to the CLP regulations.

What is GHS

An abbreviation for Globally Harmonized System of Classification and Labelling of Chemicals, which was recommended by the United Nations in 2003. The outline is as follows:

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 utilizes the ISO9001 management system to maintain and improve product quality. In addition, we continue to improve the quality of pharmaceuticals under the GMP (production management and quality control standards) management system for our production of pharmaceutical raw materials.

We conduct risk management for product liability (PL) to prevent PL issues. We use the internal visualization of response status for complaints received in relation to our products to promote rapid and accurate response. We received 26 product complaints in this fiscal year, a decrease of five complaints from the previous fiscal year.

4. Eliminating NPE and Reducing PRTR Substances

Poly(oxyethylene) nonylphenyl ether (NPE) is categorized as an endocrine disrupting substance that degrades into the environment, and we have eliminated NPE as an inert ingredient in new products and are progressing with the elimination of NPE from existing products.

In FY2018, we released nine new NPE-free products. We also are working to reduce the use of PRTR substances during new product development.

5. 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 this fiscal year, there were 11 inquiries concerning Nihon Nohyaku's products made to the

JPIC. We also received 10 direct inquiries for risk and hazard information. We promptly provide various types of information to help improve product safety. During FY2018, we had no environmental accidents relating to Nihon Nohyaku's products and no poisoning accidents requiring official reporting under the Consumer Product Safety Act.

Communication with Society



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 our agrochemicals. Note that the handling of termiticides and wood preservative products has been transferred to AgriMart Corporation in December 2018.

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, Wood Preservative products
TEL. +81-3-5159-1711
(AgriMart Corporation)
(Weekdays, 9:00 am - 5:00 pm)



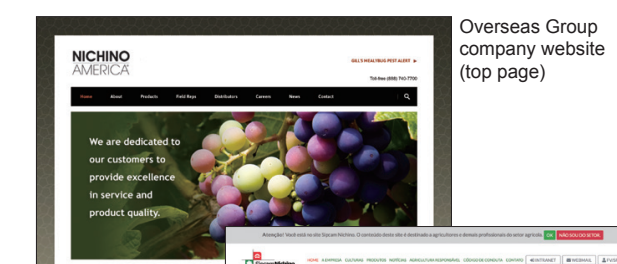
Archived CSR Reports and Responsible Care Reports (available on our website)

2) Disclosure of Business Information

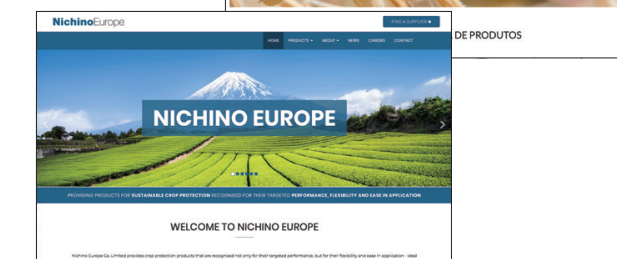
To promote understanding of our business activities by as many stakeholders as possible, we work to provide accurate and timely information disclosure and to enhance disclosed information. We continuously review information content and update information as necessary.



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



Overseas Group company website (top page)



2. Relationship to Society

1) Community Service

Nichino Ryokka Greenery Day

Nichino Ryokka has set its founding anniversary (June 1) as “Nichino Ryokka Greenery Day” and is undertaking initiatives to contribute to customers and local communities. In FY2018, Nichino Ryokka participated in the “Street Cleanup Day”, a cleanup activity promoted by the Chuo City local government of Tokyo, where 26 employees collected litter in the neighborhood of Nihonbashi-Kodenmacho where the Head Office of Nichino Ryokka is located. In addition, Nichino Ryokka has been certified as a company that promotes work-life balance by the Chuo City local government. Going forward, the company is committed to contributing to society through various activities.



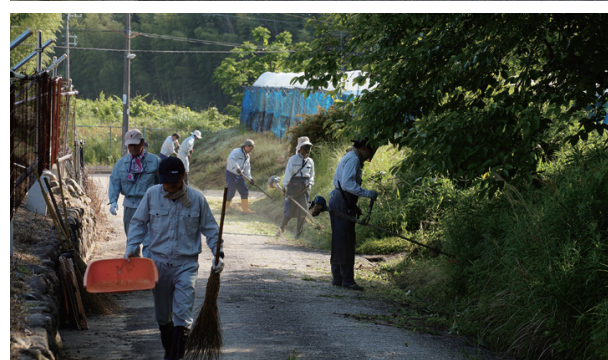
Participation in “Street Cleanup Day” (Nichino Ryokka: June 4, 2018)

Kuromaro Juku

The Research Center sent a lecturer to “Kuromaro Juku”, a citizens’ college course provided by the Kawachinagano City. The lecturer gave a lecture concerning the safety of agrochemicals under the theme of “Thinking about safety of chemical substances found in your daily life”. We have limited opportunities to meet local residents to talk about our field of expertise; however, the lecture had a large audience even though it was raining on that day. The lecturer strived to provide easy-to-understand, thoughtful explanations during the lecture. The participants asked many questions at the end of the lecture, demonstrating the high level of interest in the subject. It was a valuable opportunity for Nihon Nohyaku as well.

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. Volunteers from the Research Center and the Nichino Service Kawachinagano Center, together with members of the irrigation association, raked out the dirt, mud and weeds that have piled up along the long water canal from the reservoir to the farmlands using equipment brought from the centers. The work brings back the clean canal, and allows us to enter another field trial season for the year in good spirits.



Cooperation with the neighboring irrigation association in the canal cleaning (Research Center: May 27, 2018)

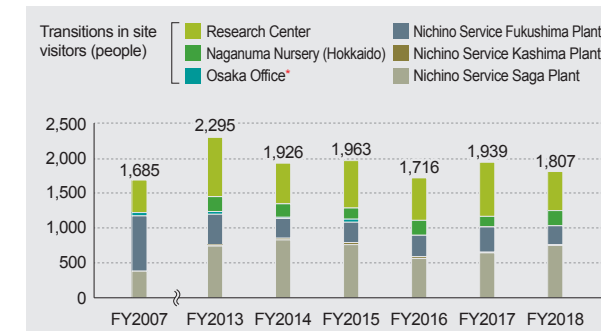


Kuromaro Juku, Kawachinagano citizens’ college course (May 8, 2018)

2) Relationships with Stakeholders

Acceptance of visitors for factory tours and laboratory tours

In FY2018, the Research Center, Naganuma Nursery, and the Nichino Service Plants were visited by 1,807 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 until July 2016.

3) Contributing to Society

Participation in the Project of JMAFF

(1) Initiatives toward smart agriculture

① Control with reduced workloads utilizing unmanned aerial vehicles

Nihon Nohyaku has established a system in which unmanned aerial vehicles*, a promising technology for reducing workloads, spray agrochemicals. The system materialized after we acquired registrations of drone spraying of the following agrochemicals: “Ippon 1 kg Granule 75” and “Ippon D 1 kg Granule 51” (one-shot application herbicides used in between rice planting and 2.5 leaf stage) as well as “Tekken 1 kg Granule”, “Nitouryu 1 kg Granule” and “One Stage 1 kg Granule” (herbicides used in between 15 days after rice planting and 4 leaf stage). We also pushed forward preparations for the launch of “Tsurugi 250 Granule” planned in FY2019 by conducting application tests using major drone types. Application using drones expectedly shortens labor hours of a weed control per unit area to one third or less.

* Unmanned helicopters and multirotor aircraft for industrial use (so-called drones)

(2) Women in Agriculture Project

Nihon Nohyaku held the “Online Seminar to Understand the Basics of Agrochemicals” (first part: February 2018, second part: June 2018) for women engaging in agriculture. This seminar was created in cooperation with the members who participated in the kickoff meeting (November 2017) to respond to “providing consumers with easy-to-understand explanations on why we can call crops grown with agrochemicals safe”. Taking advantage of opinions and ideas provided in the kickoff meeting, we incorporated various useful tips in the seminar by creating materials with many diagrams and graphical illustrations to make them easy to read and making the seminar proceed in the form of dialogue between the lecturer and an assistant to make the difficult contents easier to understand. The seminar was attended by a large number of participants from all over Japan as we live-streamed it online, allowing people to join it using PCs and smartphones.

The first part of the seminar focused on the theme of “safety of crops grown with agrochemicals”. The topics of the lecture included “What is the unit of toxicity?” and “Setting of the maximum residue limits for agrochemicals”, which were rather hard-to-understand, but the participants commented that they “could gain

② AI-based diagnosis and control support system

Since FY2017, Nihon Nohyaku has been involved in a research project of a web system equipped with functions such as making AI-based diagnosis of pest infestations and proposing effective chemicals. Additionally, in FY2018, we established a new consortium called “Control Support System Study Group”, and started developing a system that supports the diagnosis and control of weeds and pest infestations using smartphones. The system is targeted at providing functions that enable everyone to easily manage a variety of weeds and pest infestations by farm field with reduced workloads.

correct knowledge of agrochemicals”, “found it very useful thanks to a number of key terms that provide clues to easy-to-understand explanations to consumers”, “felt grateful for the opportunity as the seminar was provided with desired contents” and “wished to have many more opportunities like this”. The second part cast light on “proper ways of using agrochemicals”, and gave explanations on “checking of agrochemical labels”, “preparation of spray solutions”, “spraying and cleanup work after spraying”, “methods of storing and disposing of agrochemicals” and “recording the use of agrochemicals”, in line with the actual procedures to be taken when using agrochemicals. In addition, the lecturer played a video where a Nihon Nohyaku employee demonstrated the preparation of spray solutions and their application in a farm field, to encourage the participants to understand the process more easily. The participants gave such comments as that they “thought the explanation using the video was excellent as it helped [their] understanding of how to use and apply agrochemicals” and “could gain more complete knowledge of what [they] had known after going through the first and second parts”. Both of the two parts received favorable response from the participants. Going forward, we are planning to develop a convenient web service as a new project.

Dispatching lecturers and guest speakers

In FY2018, 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. We also cooperated with the Green and Safety Promoters Association in dispatching lecturers.

Agricultural college scholarship and workshops

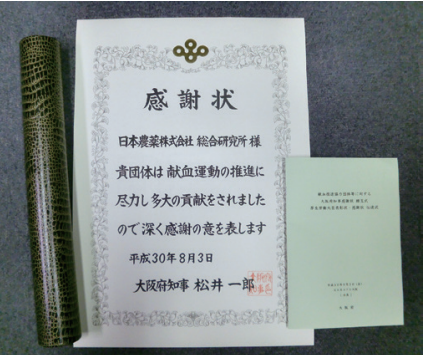
In FY2008, we started the Nichino Scholarship Fund, commemorating the 80th anniversary of our founding. This year marks the 12th year of the fund. Each year, we provide scholarship funds to students from 9 agricultural colleges around Japan to support the agricultural careers of more than 150 students. 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.



Workshop with Nichino Scholarship students (Research Center: July 9, 2018)

Cooperating with blood donations

The Research Center, Nichino Service Fukushima and the Saga Plants cooperate with Japan Red Cross blood drives. Blood donation trucks visit these sites for a blood drive to be conducted for half a day at each of them, with participation by many employees who find time during work to donate blood. The Governor of Osaka Prefecture presented a letter of appreciation to the Research Center in FY2018, in recognition of our continued support for blood donations.



Letter of Appreciation (Research Center: August 3, 2018)

Information and Topics of Each Facility

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

Research Center

General Manager: Kazuhiko Motoba
(assumed the position on December 21, 2018)
Address: 345, Oyamada-cho, Kawachinagano-shi, Osaka
Number of employees: 177
Land area: approx. 71,000 m²
Floor surface area: approx. 16,000 m²



Research Center Policy

Our mission is to create new agrochemicals meet the needs of society to secure safe and steady food supply, and to improving the quality of life. We embrace our role as the center of all sorts of 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.

CSR Activity Topics

1. We proactively accept tour requests to promote further understanding of agrochemical efficacy and use, and agrochemical safety. In this year, we welcomed a total of 559 visitors for tours. Visitors included farmers who use agrochemicals as well as college students in the agricultural department, Nichino Scholarship students (agricultural college students) and people from neighboring communities.



Tour (November 21, 2017)

2. In this year, we again participated in the Kawachinagano City Citizen's Festival. We provided flower and vegetable seedlings (raised at Research Center by Nichino Service). Nihon Nohyaku distributed seedlings as a prize for a stamp rally in the "Adventure & Nature Area", one of the venue's multiple event areas where the rally was held, and the prize was so popular that we ran out of all the seedlings we prepared for the rally.



Kawachinagano City Citizen's Festival (May 13, 2018)

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 found in the activities of the Research Center. We received constructive questions and proposals, and we were able to promote mutual understanding. This marked the eighth year since we began holding the information exchange sessions at the Research Center, and we have welcomed visits by many city officials up until now. We look forward to continuing with these sessions in the future.

Research Center environmental data

Items	Content (unit)	FY2014	FY2015	FY2016	FY2017	FY2018
Energy	Crude oil equivalent(kℓ)	1,973	1,931	1,961	1,970	1,986
	Water (1,000 m ³)	30	27	31	31	29
	SOx (t)	0.0	0.0	0.0	0.0	0.0
Atmospheric emissions	NOx (t)	2.6	1.8	2.2	2.0	2.0
	Dust (t)	0.0	0.0	0.0	0.0	0.0
	CO ₂ (t)	3,881	3,913	3,912	3,863	3,681
Waste	Amount (t)	184	196	202	206	118
	Final landfill (t)	122	137	137	140	81
	Volume (1,000 m ³)	10	8	16	19	17
Waste water	COD (t)	0.2	0.2	0.4	0.0	0.0

Nichino Service Co., Ltd. Kashima Plant

General Manager: Shigeyuki Sakao
(assumed the position on December 21, 2018)

Address:
19, Sunayama,
Kamisu-shi, Ibaraki

Number of employees:
44

Land area:
approx. 45,000 m²



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 the discharge 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.
6. Work to participate in community activities and interact with neighboring companies to strengthen ties with local communities and neighboring companies.



Overall Safety Inspection (August 8, 2018)

CSR Activity Topics

1. We implemented OHSAS18001, worked to improve overall occupational safety & health, and achieved zero accidents.
2. In FY2018, we achieved zero environmental accidents and zero environmental law violations, goals outlined in ISO14001.
3. To prepare for emergency situations, we conducted firefighting trainings, emergency evacuation trainings and leak response trainings.
4. 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.
5. As part of our safe operations initiative, we conducted an Overall Safety Inspection involving initial pyraziflumid manufacture review, re-inspections of past serious near misses 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.



Cleaning around the plant (December 6, 2017)

Nichino Service Kashima Plant environmental data

Items	Content (unit)	FY2014	FY2015	FY2016	FY2017	FY2018
Products	Technical grades ^{*1} / bulk powder (t)	1,339	1,186	1,387	1,577	1,537
	Crude oil equivalent ^{*2} (kl)	3,025	2,007	1,982	2,070	1,987
Energy	Water (1,000 m ³)	192	117	139	158	241
	SOx (t)	0.6	0.1	0.3	0.3	0.1
	NOx (t)	6.1	0.9	1.4	14.3	4.8
Atmospheric emissions	Dust (t)	4.0	0.7	0.8	5.9	0.8
	CO ₂ (t)	5,212	3,465	3,368	3,428	3,221
	Amount (t)	2,718	3,166	2,725	5,508	4,842
Waste	Final landfill (t)	9	4	4	3	3
	Volume (1,000 m ³)	205	106	128	135	202
Waste water	COD (t)	10.1	2.2	4.7	7.2	5.6

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

Nichino Service Co., Ltd. Fukushima Plant

General Manager: Hitoshi Yamaguchi

Address:
286, Hiraishitakada 4-Chome,
Nihonmatsu-shi, Fukushima

Number of employees:
70

Land area:
approx. 119,000 m²



Plant Policy

1. Comply with related laws, regulations and rules, proactively work on CSR activities and continuously promote the “environment, safety, health, and communication with the community”. Properly manage poisonous and hazardous materials and prevent harm to health and hygiene.
2. Continuously improve systems through management reviews. Appropriately respond to legal and other requirements, establish systems, create and manage documentation, collect information, handle audits and thereby work to improve the systems.
3. Work to reduce the discharge of chemical substances, CO₂ emissions and industrial waste from business activities, and promote resource and energy conservation as part of environmental protection efforts with an eye on not only the areas surrounding the plant, but also the global environment.
4. Add risk assessment items every month in conjunction with near-miss incidents. In conjunction with these additions, revise procedure manuals, and enhance education and KY activities, to prevent various types of accidents including fires, explosions, and chemical substance leaks. Operate the employee safety confirmation system in case of emergency such as large-scale disasters, and carry out disaster prevention trainings regularly.
5. Applying the OHSAS18001 system, we prevent work-related injuries. Provide mental care for employees, protect their safety and health and work to create a pleasant, comfortable work environment.
6. To prevent logistics-related accidents, we conduct appropriate labeling of product containers, and use Yellow Cards, White Cards, etc., to provide product safety information to all shipping and warehouse operators. Share information with shipping operators to eliminate incorrect shipments, delayed delivery and other transport problems.
7. 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.
Work to maintain and improve safety, health and environmental aspects by sharing up-to-date risk and hazard information concerning chemical substances and products handled at the plant.
Be sure to implement risk assessment at the time of the introduction of new products and chemical substances.

8. Proactively disclose the results of our CSR activities and major indicators through site reports and the website. Encourage communication with the community and further mutual understanding through participation in community activities and social contribution activities.



Environmental beautification around the plant (June 19, 2018)



Firefighting (rescue) training (July 26, 2018)

CSR Activity Topics

1. Prepared for emergency situations through education on past incidents, firefighting drills, drills for responding to agrochemical substance leaks, and drills for the safety confirmation system.
2. Conducted risk prediction training (KYT) and discussed measures to prevent past problems from being forgotten on the “Safety Day” implemented every year. Newly instituted a Month of Strengthening Detection of Potential Near Misses to nip risks in the bud by allowing departments to provide advice to each other (number of cases submitted: 224).
3. Distributed our CSR Report to widely communicate the activities of the plant and the Nichino Group to employees and visitors from outside. Our corporate activities were also featured in a *Nihonmatsu City Public Relations Report* issued by Nihonmatsu City. Allowed youth baseball teams and registered groups to use our grounds (32 times) and regularly conducted neighborhood cleaning (four times a year). Welcomed 24 groups totaling 271 visitors, including agrochemical consumers, to promote an understanding of agrochemical safety.
4. Continued to achieve zero environmental accidents and zero environmental law violations.



Nihonmatsu City Public Relations Report (June 2018 Issue)

Nichino Service Fukushima Plant environmental data

Items	Content (unit)	FY2014	FY2015	FY2016	FY2017	FY2018
Products	Agrochemicals (t)	4,323	4,155	3,914	5,138	5,232
	Crude oil equivalent(kl)	514	456	449	534	534
Energy	Water (1,000 m ³)	8	9	7	8	8
	SOx (t)	0.2	0.2	0.0	0.9	0.2
	NOx (t)	0.2	0.2	0.0	0.3	0.2
Atmospheric emissions	Dust (t)	0.0	0.0	0.0	0.0	0.0
	CO ₂ (t)	1,209	1,083	1,043	1,214	1,201
	Amount (t)	469	363	380	429	414
Waste	Final landfill (t)	2	1	2	1	2
	Volume (1,000 m ³)	7	6	5	7	7
Waste water	COD (t)	0.0	0.0	0.0	0.0	0.0

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 m²

Plant Policy

1. Work to reduce CO₂ 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 safe and steady food supply and improve the quality of life.

CSR Activity Topics

1. Promoted energy conservation by replacing outdoor lighting on the premises with LED.
2. Continued with successful achievement of zero environmental accidents and zero environmental law violations.
3. Monitored industrial waste processing contractors to confirm proper treatment was being conducted.
4. Conducted trainings (such as firefighting and evacuation trainings, agrochemical technical grade/product leak response trainings, tank leak response trainings, and waste water treatment facility problem response trainings) to prepare for emergency situations.
5. As part of our communication with the society to promote understanding regarding agrochemical safety and usage methods, we welcomed 53 groups totaling 760 visitors including from universities, agricultural colleges and agriculture officials. We also accepted interns from neighboring schools, providing opportunities to learn about agrochemical production, inspection to shipping etc.

Firefighting training
(September 25, 2018)

Nichino Service Saga Plant environmental data

Items	Content (unit)	FY2014	FY2015	FY2016	FY2017	FY2018
Product	Agrochemicals (t)	6,438	5,466	4,891	5,288	7,706
	Crude oil equivalent(kℓ)	960	950	835	1,045	998
	Water (1,000 m ³)	13	14	13	14	13
Atmospheric emissions	SOx (t)	0.2	0.1	0.1	0.3	0.3
	NOx (t)	0.5	0.3	0.4	0.8	0.8
	Dust (t)	0.0	0.0	0.0	0.0	0.0
	CO ₂ (t)	2,213	2,204	1,840	2,099	1,933
Waste	Amount (t)	649	399	375	312	421
	Final landfill (t)	0	0	0	0	0
Waste water	Volume (1,000 m ³)	6	7	7	6	6
	COD (t)	0.0	0.0	0.0	0.0	0.0

Osaka Office

General Manager: Yoshiaki Higashino

(assumed the position on December 21, 2018)

Address: 2-30, Tsukuda 5-Chome, Nishiyodogawa-ku, Osaka
Number of employees: 24 (including Formulation Research Group of the Manufacturing Technology Research Center, Osaka Storage / Delivery Group of Nichino Service Saga Plant, Nihon Ecotech members)**Land area:** approx. 30,000 m²**Floor surface area:** approx. 15,000 m²

Office Policy

The premise of the Nihon Nohyaku Osaka Office houses the Administration Group, the Formulation Research Group of the Manufacturing Technology Research Center, the Osaka Storage & Delivery Group of Nichino Service Saga Plant and Nihon Ecotech Co., Ltd.

Although the Osaka Office only has a small number of staff, amid development construction, the entire Nichino Group is committed to contributing to society through CSR activities.

CSR Activity Topics

1. Reported removal of overage buildings and soil improvement work of the project of the Tsukuda district redevelopment to the Environment Bureau of the City of Osaka and other authorities to carry out the construction work. Provided an explanatory meeting for residents in the neighborhood prior to the construction. Continuing environmental measurements (noise, vibration and dust) during the construction.
2. 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, conducted (1) fire extinguisher training, (2) disaster prevention training (shutdown, evacuation), (3) leak response and other emergency training, and (4) training on the use of mobile powered pumps. Because the plant has a relatively small number of staff for its large area, the staff members confirmed the locations of equipment so that any of them can conduct shut-down operations in case of emergency.
4. As part of our communication with society, cleaned the area surrounding the plant, participated in community activities in the Nishiyodogawa area (first-aid training and group activities to watch over children for traffic safety and crime prevention) and participated in and supported community activities in the Tsukuda district (provision of a space for rest for children's Taiko drum events and year-end fire prevention activities).

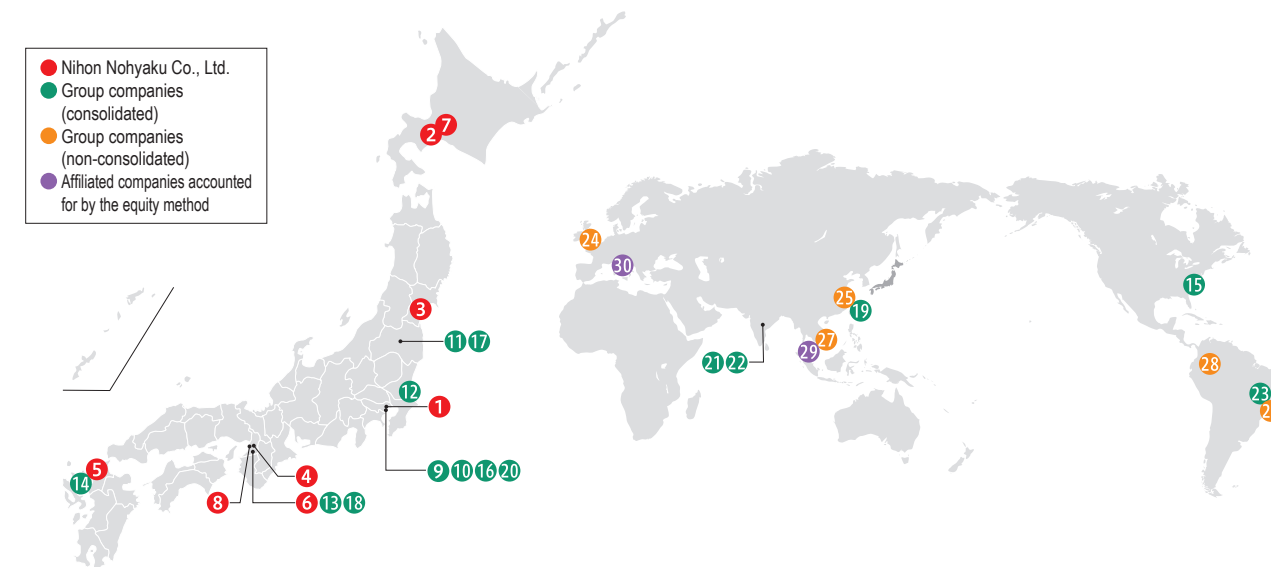
Neighborhood cleaning
(August 7, 2018)

Osaka Office environmental data

Items	Content (unit)	FY2014	FY2015	FY2016	FY2017	FY2018
Energy	Crude oil equivalent(kℓ)	203	164	106	68	49
	Water (1,000 m ³)	1	2	1	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 ₂ (t)	370	334	213	132	88
Waste	Amount (t)	89	109	81	88	113
	Final landfill (t)	6	4	1	5	15
Waste water	Volume* (1,000 m ³)	0	0	0	0	0
	COD (t)	0.0	0.0	0.0	0.0	0.0

* All treated as industrial waste

Company Overview and List of Nichino Group Companies



Nihon Nohyaku Co., Ltd.

Head Office address	19-8 Kyobashi 1-Chome, Chuo-ku, Tokyo 104-8386
Founded	November 17, 1928
Capital	14,939 million yen
Number of employees (consolidated)	1,443
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

- 1 Head office, Tokyo Branch (Chuo-ku, Tokyo)
- 2 Sapporo Branch (Sapporo-shi, Hokkaido)
- 3 Sendai Branch (Sendai-shi, Miyagi)
- 4 Osaka Branch, Tokai-Hokuriku Sales Office (Osaka-shi, Osaka)
- 5 Fukuoka Branch (Fukuoka-shi, Fukuoka)
- 8 Osaka Office (Osaka-shi, Osaka)

Research Facilities

- 6 Research Center (Kawachinagano-shi, Osaka)
- 7 Naganuma Nursery (Yubari-gun, Hokkaido)

Manufacturing plant (contracted)

- 10 Nichino Service Co., Ltd.
- 11 Fukushima Plant / 12 Kashima Plant / 14 Saga Plant

Consolidated Group Companies

9 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	Chuo-ku, Tokyo
10 Nichino Service Co., Ltd.	Manufacturing and sales of agrochemicals, contracted manufacturing, storage, and transport of agrochemicals, cultivation and management of fields, real estate management	Chuo-ku, Tokyo
11 Fukushima Plant		Nihonmatsu-shi, Fukushima
12 Kashima Plant		Kamisui-shi, Ibaraki
13 Kawachinagano Center		Kawachinagano-shi, Osaka
14 Saga Plant		Miyaki-gun, Saga
15 Nichino America, Inc.	Agrochemical sales, promotion, development, and registration in the USA	U.S.A. / Wilmington
16 Nihon Ecotech Co., Ltd.	Agrochemical residue analysis, chemical substance safety testing, and related activities	Chuo-ku, Tokyo
17 Fukushima Analysis Center		Nihonmatsu-shi, Fukushima
18 Osaka Analysis Center		Kawachinagano-shi, Osaka
19 Taiwan Nihon Nohyaku Co., Ltd.	Agrochemical sales and promotion in Taiwan	Taiwan/Taipei
20 AgriMart Corporation	Sales of termite control agents/devices, pest control agents/devices	Chuo-ku, Tokyo
21 Nichino India Pvt. Ltd.	Agrochemical sales, manufacturing, development, promotion, import and export in India	India / Hyderabad
22 Nichino Chemical India Pvt. Ltd.	Agrochemical sales and manufacturing in India	India / Hyderabad
23 Sipcam Nichino Brasil S.A.	Agrochemical sales and manufacturing in Brazil	Brazil / Uberaba

Non-consolidated Companies

24 Nichino Europe Co., Ltd.	Agrochemical sales, promotion, development, and registration in Europe	UK / Cambridge
25 Nichino Shanghai Co., Ltd.	Agrochemical sales and promotion in China	China/ Shanghai
26 Nichino do Brasil Agroquímicos Ltda.	Agrochemical development and registration in Brazil	Brazil / Sao Paulo
27 Nichino Vietnam Co., Ltd.	Agrochemical sales, development, promotion, import and export in Vietnam	Vietnam / Ho Chi Minh
28 Nihon Nohyaku Andica S.A.S.	Agrochemical sales, development, promotion, import and export in the Andes and Central America	Colombia / Bogota

Affiliated Companies Accounted for by the Equity Method

29 Agricultural Chemicals (Malaysia) Sdn. Bhd.	Agrochemical sales and manufacturing in Malaysia	Malaysia / Penang
30 Sipcam Europe S.p.A.	Agrochemical sales and manufacturing in Europe	Italy / Milan



Head Office

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Website

<https://www.nichino.co.jp/en/>



We practice Green Purchasing.



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