



**Nissan Chemical**  
CORPORATION  
日産化学株式会社

# **ROUNDUP Business Briefing**

**Finance & Accounting Department  
Agricultural Chemicals Division**

Translation of presentation materials for the ROUNDUP Business Briefing held in Tokyo on January 22, 2020

# Today's Contents

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- 1. YoY Sales Growth Rate of ROUNDUP**
- 2. History of ROUNDUP in Japan**
- 3. Evaluation by IARC (International Agency for Research on Cancer) and Judgments by Regulatory Authorities of Certain Countries**
- 4. Effect on Sales in Japan after the Verdict by the Jury in the United States**
- 5. Pesticide Registration of Glyphosate , an Active Ingredient of ROUNDUP**
- 6. Regulations and Consumption Volume of Glyphosate in Overseas Countries**
- 7. Our Actions and Crisis Management System**

# 1. YoY Sales Growth Rate of ROUNDUP

	FY2018 Actual			FY2019 Outlook (as of May 2019)			FY2019 Outlook (as of November 2019)		
	1H	2H	Total	1H	2H	Total	1H Actual	2H	Total
ROUNDUP ML	-19%	+0%	-8%	+7%	+3%	+4%	+8%	+4%	+5%
ROUNDUP AL	+2%	+11%	+5%	+31%	+11%	+25%	+7%	+0%	+5%
Total ROUNDUP	-14%	+1%	-6%	+14%	+3%	+8%	+7%	+3%	+5%

(FY2018 = April 1, 2018 - March 31, 2019)

- ◆ 1H FY2018 sales fell vs. 1H FY2017 due to irregular weather conditions (extreme heat and natural disasters).
- ◆ For FY2019 Outlook (as of November 2019), ROUNDUP AL sales were revised downward because of the sales strategy (an increase in sales composition of low-priced products aiming at increasing users).

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## 2. History of ROUNDUP in Japan

# What is ROUNDUP?

Most-used herbicide in the world

Its active ingredient is **glyphosate**

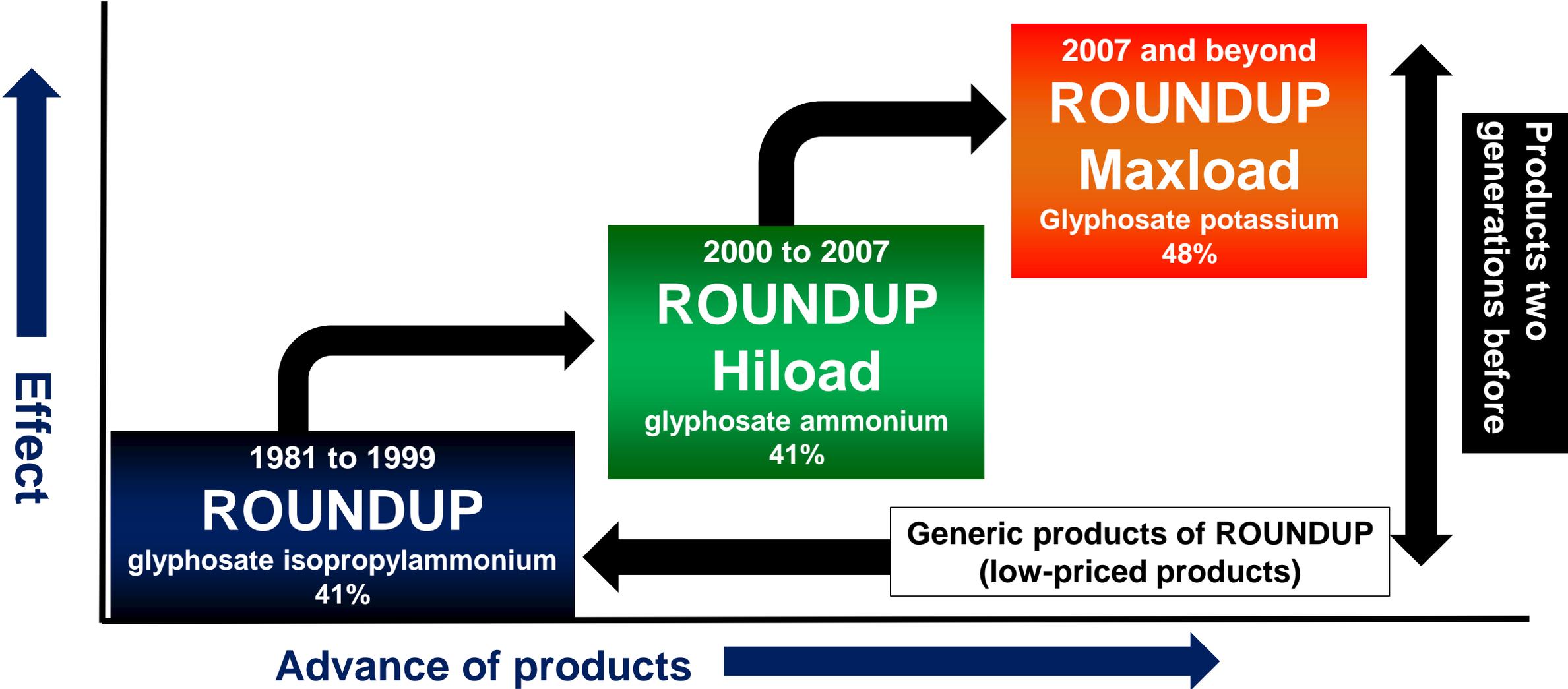
## In Japan

- 1980: ROUNDUP obtained the registration.
- 1981: ROUNDUP was launched in Japan.
- 1991: The patent of ROUNDUP expired.
- 1994: Generics of ROUNDUP were launched.
- 2000: **ROUNDUP Hiload was launched.**
- 2002: Nissan Chemical acquired exclusive marketing rights in Japan from Monsanto Japan.
- 2007: **ROUNDUP Maxload was launched.**
- 2011: **ROUNDUP Maxload AL was launched.**
- 2017: **ROUNDUP Maxload AL II was launched.**
- 2018: **ROUNDUP Maxload AL III was launched.**

It marks its 40th anniversary of launching this year in Japan.

(e.g. Japanese Agrochemical Year 2018 : October 2017 - September 2018)

# ROUNDUP Maxload and Generic Products



(e.g. Japanese Agrochemical Year 2007 : October 2006 - September 2007)

# Where is ROUNDUP used?

## Agriculture Market

### ROUNDUP Maxload



Weeds growing before planting rice, wheat, soybeans, vegetables, etc.



Weeds on rice paddies roads



Weeds on orchard



# Where is ROUNDUP used?

## General Household Market

Mainly ROUNDUP Maxload AL products



Around the entrance



Care of the garden



Around the house



Parking area



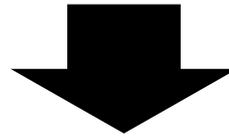
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### **3. Evaluation by IARC (International Agency for Research on Cancer) and Judgments by the Regulatory Authorities of Certain Countries**

# Evaluation of Glyphosate by IARC

In March 2015, IARC (International Agency for Research on Cancer) **classified glyphosate as Group 2A (probably carcinogenic to humans).**

※See our news release announced on March 31, 2015



- IN JULY 2017, GLYPHOSATE WAS ADDED TO CALIFORNIA'S PROPOSITION 65 LIST, WHICH REQUIRES BUSINESSES TO WARN CUSTOMERS ABOUT CHEMICALS KNOWN TO CAUSE CANCER.
- IN AUGUST 2018, THE COMPENSATION DECISION WAS GIVEN TO MONSANTO COMPANY IN CALIFORNIA STATE FOR THE REASON THAT THE COMPANY FAILED TO PERFORM ITS DUTY OF CARE (WARNING) ON THE CARCINOGENICITY OF GLYPHOSATE.

## What is IARC ?

# What is IARC (International Agency for Research on Cancer)?

➤ **SUBSIDIARY ORGANIZATION OF WORLD HEALTH ORGANIZATION (WHO)**

➤ **EVALUATION OF CARCINOGENICITY BY IARC**

BASED ON THE LIMITED NUMBER OF LITERATURES PUBLISHED, THE EVALUATION **INDICATES NOT THE SCALE OF RISK BUT THE STRENGTH OF THE BASIS** OF CARCINOGENICITY OF FACTORS, SUCH AS SUBSTANCES AND ENVIRONMENT.

➤ **IARC'S REGULATORY AUTHORITY**

**IARC HAS NO REGULATORY AUTHORITY**, AND JUDGMENT ON THE SAFETY AND APPROVAL OF PESTICIDES IS UNDER THE CONTROL OF THE REGULATORY AUTHORITIES OF EACH COUNTRY.

Examples of evaluation of carcinogenicity by IARC

[Classification of glyphosate by IARC] = 2A(probably carcinogenic to humans)

Classification of carcinogenicity	Substances
Group 1 (carcinogenic to humans)	Processed meats (including hams, sausages, and bacon), tobacco, alcoholic beverages, ultraviolet radiation, solar radiation, and others
Group 2 A (probably carcinogenic to humans)	<b>Glyphosate</b> , red meat, acrylamide, hot drinks, and others
Group 2 B (possibly carcinogenic to humans)	Traditional Asian pickled vegetables, aloe vera(whole leaf extract), and others

# Judgments by Regulatory Authorities in Japan and Other Countries

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**Food Safety Commission of the Cabinet Office of Japan (July 2016)**

**GLYPHOSATE HAD NO NEUROTOXICITY, CARCINOGENICITY, REPRODUCTIVE TOXICITY, TERATOGENICITY, AND GENOTOXICITY.**

Therefore, it is confirmed that glyphosate, an active ingredient in ROUNDUP Maxload, has no carcinogenicity as determined by the government.

**Views by Joint FAO/WHO Meeting on Pesticide Residues (JMPR)  
that belongs to United Nations organization same as IARC**

**JMPR ANNOUNCED THAT GLYPHOSATE WAS UNLIKELY TO POSE A  
CARCINOGENIC RISK TO HUMANS FROM EXPOSURE THROUGH THE DIET.**

**(MAY 2016)**

# Judgments by regulatory authorities in other countries of the world

## **November 2015: European Food Safety Authority (EFSA)**

**FSA CONCLUDED THAT GLYPHOSATE IS UNLIKELY TO POSE A CARCINOGENIC HAZARD TO HUMANS AND THE EVIDENCE DOES NOT SUPPORT CLASSIFICATION WITH REGARD TO ITS CARCINOGENIC POTENTIAL ACCORDING TO REGULATION (EC) No 1272/2008.**

## **March 2017: European Chemicals Agency (ECHA)**

**THE COMMITTEE FOR RISK ASSESSMENT'S OPINION REGARDING THE HARMONISED CLASSIFICATION OF GLYPHOSATE HAS NOW BEEN SENT TO THE EUROPEAN COMMISSION.**

## **February 2017: Environmental Protection Agency (EPA) of United States**

**GLYPHOSATE IS UNLIKELY TO BE CARCINOGENIC TO HUMANS.**

## **April 2019: Environmental Protection Agency (EPA) of United States**

**EPA CONTINUES TO FIND THAT THERE ARE NO RISKS TO PUBLIC HEALTH WHEN GLYPHOSATE IS USED IN ACCORDANCE WITH ITS CURRENT LABEL AND THAT GLYPHOSATE IS NOT A CARCINOGEN.**

**The same views were also given by Pest Management Regulatory Agency (PMRA) of Canada, Environmental Protection Authority (EPA) of New Zealand, and Australian Pesticides and Veterinary Medicines Authority (APVMA).**

# New Views of United States Environmental Protection Agency (EPA)

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August 2019

**EPA will no longer approve product labels claiming glyphosate is known to cause cancer** – a false claim that does not meet the labeling requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The State of California's much criticized Proposition 65 has led to misleading labeling requirements for products, like glyphosate, because it misinforms the public about the risks they are facing. This action will ensure consumers have correct information, and is based on EPA's comprehensive evaluation of glyphosate.

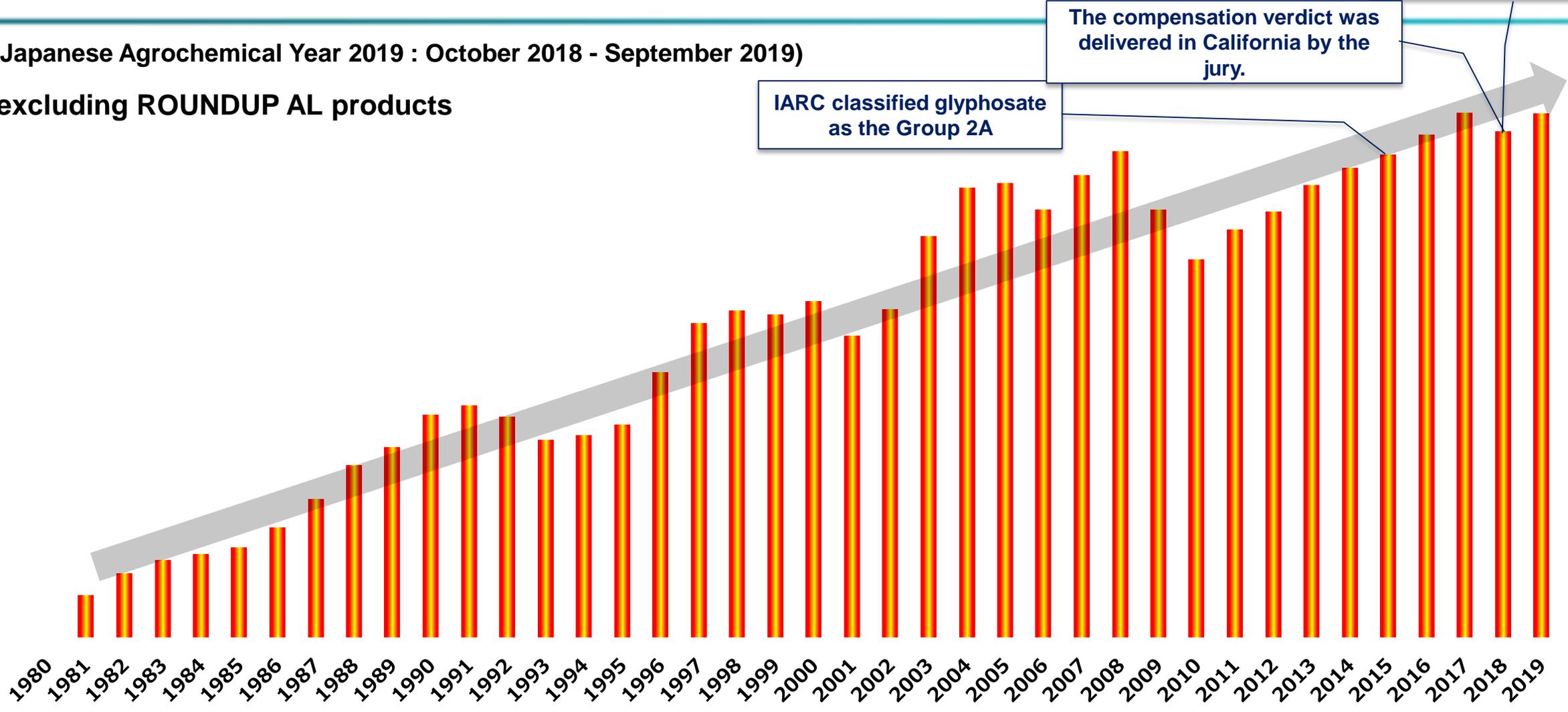
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## **4. Effect on Sales in Japan after the Verdict by the Jury in the United States**

# Sales Volume\* Trend of ROUNDUP

(Japanese Agrochemical Year 2019 : October 2018 - September 2019)

\*excluding ROUNDUP AL products

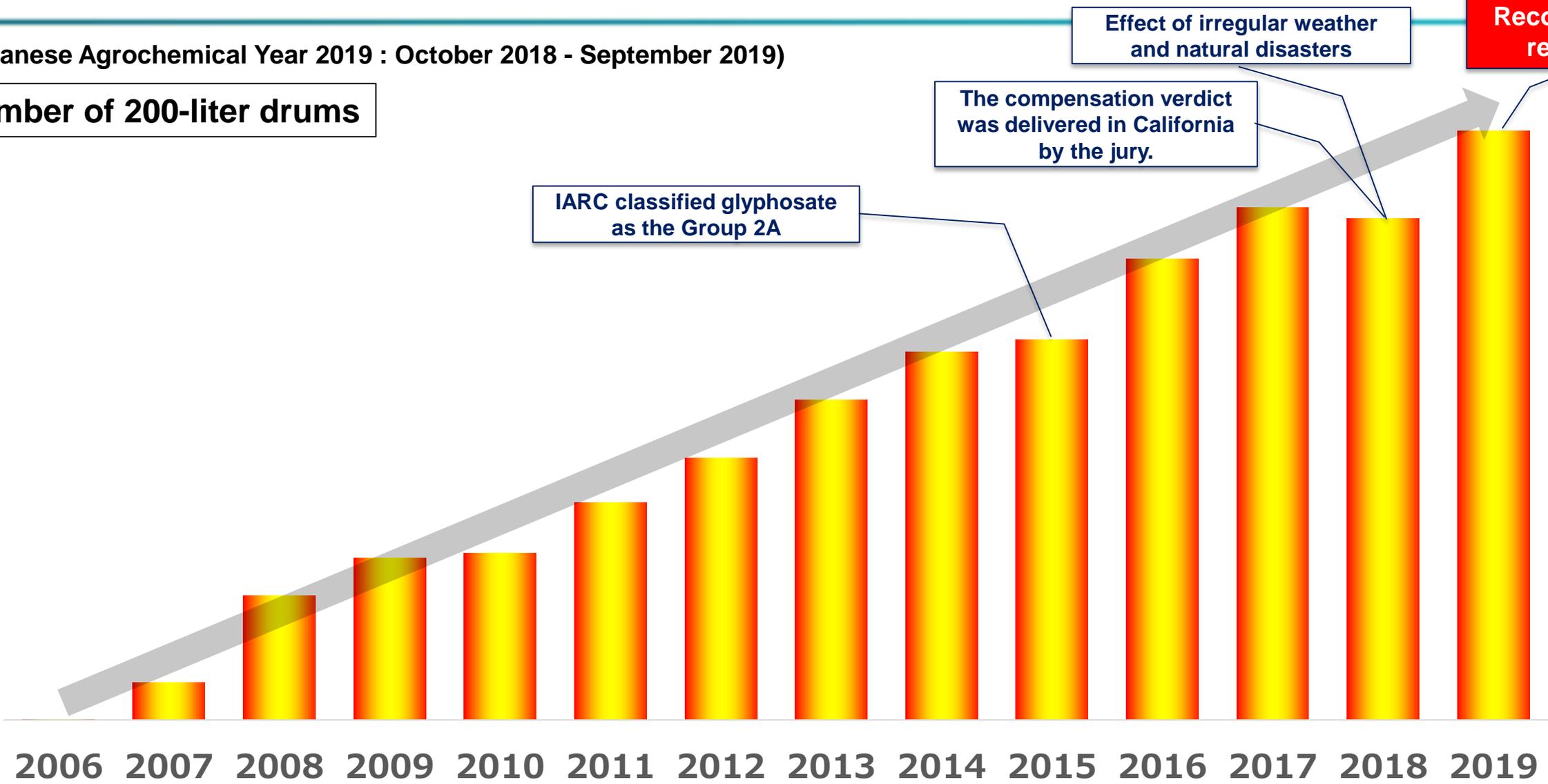


**ROUNDUP still increases sale volume even 40 years after its launching.**

# Sales Trend of 200L Drums, a Large Standard in the Agriculture Market

(Japanese Agrochemical Year 2019 : October 2018 - September 2019)

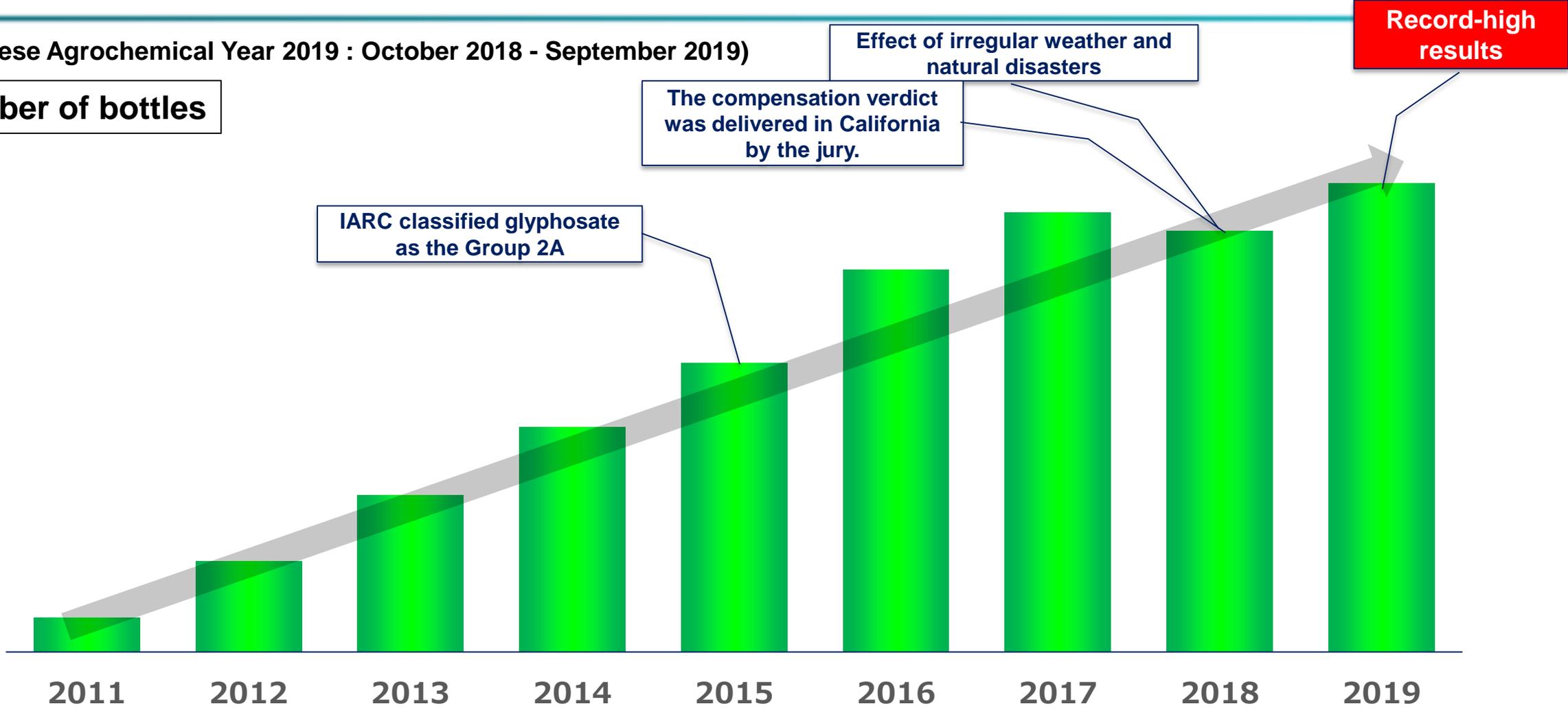
Number of 200-liter drums



# Sales Trend of AL Products in the General Household Market

(Japanese Agrochemical Year 2019 : October 2018 - September 2019)

Number of bottles



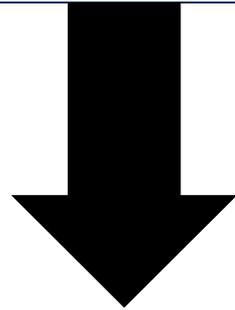
There is limited effect of this issue on both the agriculture and home consumer markets

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# 5. Pesticide Registration of Glyphosate, an Active Ingredient of ROUNDUP

# Pesticide Registration of Glyphosate

**All glyphosate products are not subjected to the same treatment in pesticide registration.**



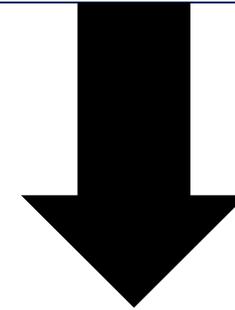
**MAFF\*-registered products**

Those registered  
as farm product  
for food or animal feed use

**ROUNDUP Maxload**

Those not registered  
as farm product  
for food or animal feed use

**ROUNDUP Maxload AL products**



**Non-registered products**  
(Products not obtaining MAFF registration)

**It needs to consider glyphosate products not as a unit but separately.**

MAFF\*: Ministry of Agriculture, Forestry and Fisheries

# Tests of Active Ingredients Required for Obtaining the Registration (Abstract)

(Tests for acute, short-term and long-term toxicity, genetic toxicity, carcinogenicity, reproductive toxicity, and other toxicity )

Tests	Registered products	Registered products (used for farm products not for food or animal feed use)	Non-registered products
Acute Oral toxicity	○	○	Not confirmed
Acute Dermal toxicity	○	○	
Acute Inhalation	○	○	
Skin Sensitization	○	○	
Repeated Dose 90-day Oral toxicity	○	○	
Genetic toxicity	○	○	
Chronic toxicity	○	×	
Carcinogenicity	○	×	
Reproductive toxicity	○	×	
Developmental toxicity	○	○	

The government confirmed that glyphosate, an active ingredient of ROUNDUP Maxload, has no carcinogenicity.

# Sales of Herbicides Not Allowed to Be Used as a Pesticide

(Joint notification by MHLW\*, MAFF\*, METI\*, and MOE\* of Japan)

\*Herbicides not allowed to be used as a pesticide = Non-registered herbicides

**The notification was dated on March 28, 2019.**

➤ EACH OF SALES STORES SHALL PUT UP THE NOTICE OF NOT ALLOWED TO USE AS A PESTICIDE IN A PLACE EASY FOR THE PUBLIC TO SEE

[EXAMPLE OF UNDERSTANDABLE PRESENTATION]

THIS HERBICIDE IS NOT ALLOWED TO BE USED AS A PESTICIDE. THEREFORE, IT IS NOT ALLOWED TO BE USED FOR CULTIVATION AND MANAGEMENT OF FARM PRODUCTS AND PLANTS SUCH AS TREES, LAWN GRASS, AND FLOWERS.

[EXAMPLE OF THE PRESENTATION LIKELY TO CAUSE MISUNDERSTANDING]

THESE PRODUCTS ARE HERBICIDES SPECIFICALLY FOR NON-CULTIVATED LAND. AND SO IT IS NOT ALLOWED TO BE USED FOR CULTIVATED LAND.

➤ SALES STORES SHALL CLEARLY SEPARATE HERBICIDES NOT APPLICABLE TO PESTICIDES FROM THOSE REGISTERED AS PESTICIDES BEFORE DISPLAY.

➤ SALES STORES SHALL GIVE THE EXPLANATION AT CASH REGISTERS AND SELLING SPACES THAT HERBICIDES NOT APPLICABLE TO PESTICIDES SHALL NOT BE USED FOR CULTIVATION AND MANAGEMENT OF FARM PRODUCTS AND PLANTS SUCH AS TREES, LAWN GRASS, AND FLOWERS.

**As a result of tighter rules on sales methods in stores,  
retailers face a higher risk of sales of non-registered herbicides than before.**

MHLW\*: Ministry of Health, Labour and Welfare  
METI\*: Ministry of Economy, Trade and Industry

MAFF\*: Ministry of Agriculture, Forestry and Fisheries  
MOE\*: Ministry of the Environment

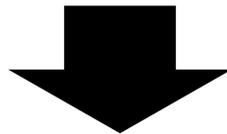
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## **6. Regulations and Consumption Volume of Glyphosate in Overseas Countries**

# Typical Comments Seen on Social Media

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- ✓ **There is a trend to prohibit sales of glyphosate in the world for the reason of carcinogenicity and the effect on genes.**
- ✓ **There is a stronger potential for being a carcinogen of glyphosate, and the action is widely taken to prohibit the use of and impose tighter regulations on glyphosate in Europe and the United States and Asia.**
- ✓ **Few people are aware of the strong toxicity of ROUNDUP and countries' action toward prohibition of the use of ROUNDUP.**



**How are regulations actually imposed?**

# Regulations on Glyphosate in Overseas Countries

	Measures for <b>Glyphosate</b>		Measures for <b>non-agricultural pesticides in general</b>	
	Prohibition of import or use	Partial prohibition	Prohibition of use of chemical pesticides excluding those for agriculture	Prohibition of use of herbicides excluding those for agriculture
<b>Saudi Arabia</b>	<b>Prohibition cancelled early 2019</b>			
<b>Kuwait</b>				
<b>UAE</b>				
<b>Bahrain</b>				
<b>Oman</b>				
<b>Vietnam</b>	×			
<b>Malawi</b>	<b>Suspension of import was cancelled May 2019</b>			
<b>France</b>		Only ROUNDUP Pro 360 is prohibited.	×	
<b>Sri Lanka</b>		It is prohibited to use them for those excluding teas and rubber		
<b>Belgium</b>				×
<b>Slovenia</b>				×
<b>Bermuda islands</b>			Those diluted for use are prohibited	
<b>Canada (Vancouver)</b>			It is prohibited to use them in public places and for home gardening	
<b>Netherlands</b>			It is prohibited to use them on paved surfaces and non-cultivated land	

# Glyphosate Consumption Volume Distribution by Region (2017)

Source: imap-3

## World

	Share(%)
Africa	2%
Asia (Japan 0.9%)	15%
<b>Europe</b>	<b>5%</b>
Latin America / Caribbean	46%
North America	25%
Oceania	7%
<b>TOTAL</b>	<b>100%</b>

## EU

	Share(%)
Spain	0.8%
Italy	0.7%
<b>France</b>	<b>0.5%</b>
UK	0.3%
Greece	0.2%
Poland	0.1%
<b>Germany</b>	<b>0.1%</b>
<b>Austria</b>	<b>0.0%</b>

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# 7. Our Actions and Crisis Management System

# Our Actions and Crisis Management System

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- We receive inquiries from consumers received by companies in each case and give our view to the companies individually.
- We have been taking actions against false reports in the newspapers, magazines, and TV programs, if any, by sending a letter of protest.
- We do not individually argue against those excluding media, but we collect information by tracking social media around the clock every day.
- We continue to share the relevant information with retail companies and act immediately.
- **As of today, there are no lawsuits against us in this matter.**

# Reponses of Retail Companies

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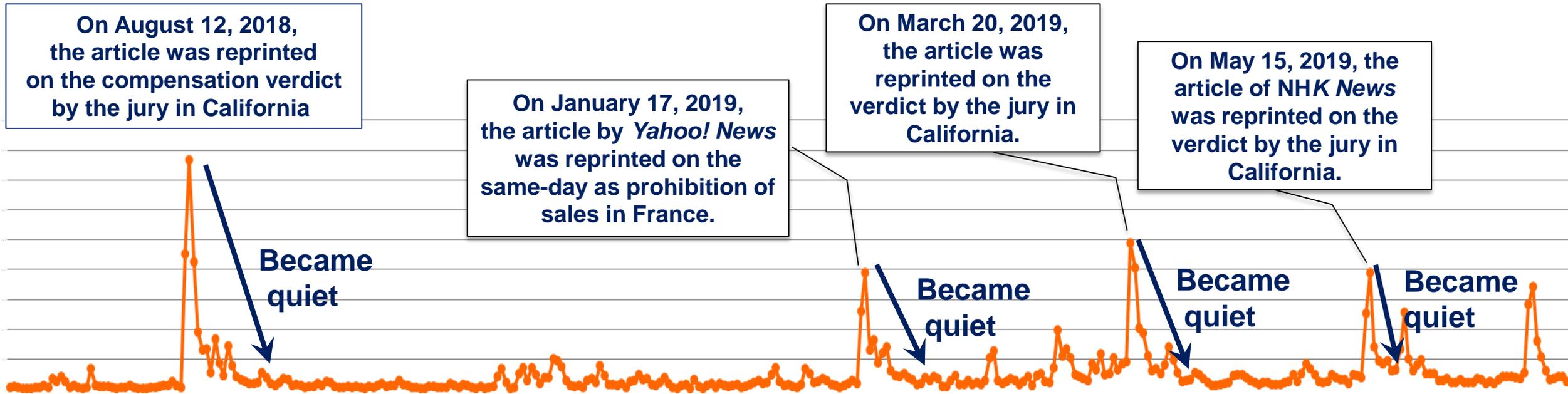
- **Coop Sapporo now temporarily suspended sales due to opinions from its members. Except for Coop Sapporo, there is no retailer responding with the suspension of sales.**
- **Our nationwide sales network has been maintained as before.**
- **Products obtaining the MAFF\* registration are continuously sold.**
- **Companies offering non-registered glyphosate products are forced to reaffirm sales space and pop displays according to the regulations outlined in p22.**

# Protests against Media on False Articles

<i>Date of posting on HP</i>	<i>Media which we protested to</i>	<i>Response from the media</i>
<i>November 19, 2013</i>	<i>Television Osaka about the contents of the program broadcast on October 5</i>	<i>Issuance of written apology and broadcast of corrected news</i>
<i>December 4, 2013</i>	<i>Mainichi Newspapers for the article dated on October 22</i>	<i>Apology and posting of apology article</i>
<i>June 2, 2014</i>	<i>Ryukyu Shimpo about the article dated on April 30</i>	<i>Posting of written apology and corrected article</i>
<i>July 11, 2014</i>	<i>Shukan Bunshun about the article dated on April 17</i>	<i>Receipt of written apology</i>
<i>December 24, 2014</i>	<i>Shukan Playboy about the article dated on November 24</i>	<i>Posting of written apology and corrected article</i>
<i>April 27, 2016</i>	<i>Japan Broadcasting Corporation about the BS program broadcasted on November 25</i>	<i>Receipt of written excuse</i>
<i>January 30, 2019</i>	<i>Joseijishin about the issue dated on January 29</i>	<i>Receipt of written apology</i>

<i>Date of sending written protest</i>	<i>Protested company</i>	<i>Response from the company</i>
<i>July 19, 2019</i>	<i>Mail-order company</i>	<i>Written apology and delivery of corrected paper to the members</i>

# Overview of Monitoring of Social Media



Results of our web/SNS monitoring on ROUNDUP/glyphosate for 12 months from July 2018 to June 2019

**They temporarily spread and immediately became quiet.**

# The Site Transmitting Information on Safety by Experts

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## AGRI FACT

Operated by Agricultural Technology Communications Co., Ltd.

<https://agrifact.dga.jp/>

(only in Japanese)

The site verifies whether rumors, news, and reputation on agriculture and foods are true or not.

# Future Sales of ROUNDUP

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**We will continue to proudly sell ROUNDUP  
Maxload products  
and make efforts toward sales growth.  
Therefore, please rest assured.**

# Forward Looking Statements

The forward looking statements in this material are based on information available at the time of preparation of the material. Although they reflect our current expectations, these statements are not guarantees of future performance, but include a number of risks and uncertainties. Actual results may largely differ from these statements due to various factors which may be beyond company control.

No information in this material is provided as an offer to buy or sell the shares of the company. We urge users of the material to make investment decision based upon own judgment.