



About NARO

Centers · Institutes

Research Programs

Global Initiatives

Outreach



New Glowing Silk



New soft-sticky rice cultivar "Fuwarimochi"



Road to Recovery



Recent Events

What is NARO?

NARO is the core institute in Japan for conducting research and development on agriculture and food. Our overall mission is to contribute to the development of society through innovations in agriculture and food, by promoting pioneering and fundamental R&D.

More

- Publications
- Workshops · Seminars
- Career · Opportunities
- Visitor Info

食と農の科学館
Training Agriculture Research Hall

YouTube
NARO Channel

農研機構 農業技術情報センター

researchmap

Institute of Radiation Breeding

Genebank



Insect Symposium

Topics

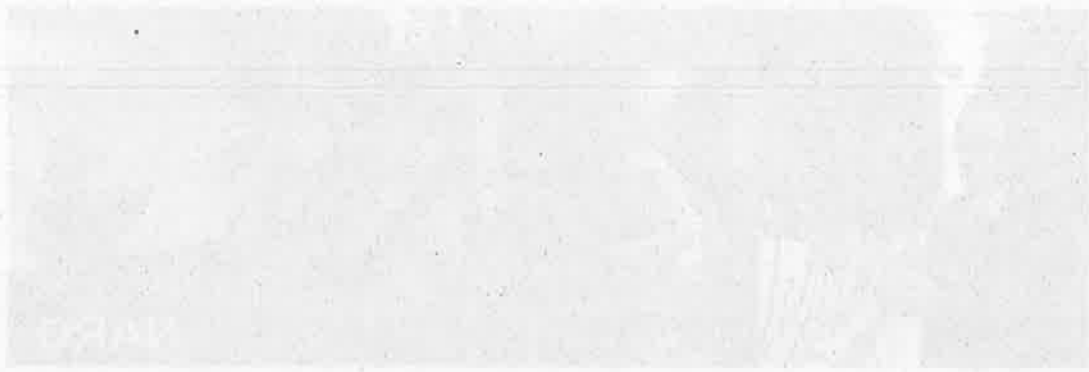
Events

Information

- October 7, 2016
Recruitment of fixed-term research scientists
- September 30, 2016
MOU signed between INRA and NARO
- September 20, 2016
Food web model that predicts a stable green world in the terrestrial ecosystem
- September 20, 2016
Efficient modification of flower shape and color patterns
- September 16, 2016
FAO/IAEA-NARO Technical Workshop on Remediation of Radioactive Contamination in Agriculture
- September 8, 2016
NARO signed a MOU with All-Russia Research Institute of Plant Protection
- September 2, 2016
High duty cycle pulses suppress orientation flights of crambid moths
- August 30, 2016
New soft-sticky rice cultivar "Fuwarimochi"
- August 23, 2016
NARO Symposium: "Avian influenza and wild animals", on Sep 29, 2016 at JA Kyosai Conference Hall, Tokyo
- August 23, 2016
HARC/NARO annual training on rice cultivation for 5th grade students of

Topics

RESEARCH PAPER



Abstract | Introduction | Literature Review | Methodology | Results | Discussion | Conclusion



Author Name

Author Name

Author Name

Author Name

Abstract
This study aims to investigate the impact of digital marketing on consumer behavior. The research is based on a survey of 500 respondents. The results show that digital marketing has a significant positive effect on consumer behavior. The study also identifies several factors that influence consumer behavior, such as social media, mobile devices, and online reviews. The findings suggest that businesses should focus on digital marketing strategies to improve their performance and reach a wider audience.

Introduction
The purpose of this study is to explore the relationship between digital marketing and consumer behavior. The research is based on a survey of 500 respondents. The results show that digital marketing has a significant positive effect on consumer behavior. The study also identifies several factors that influence consumer behavior, such as social media, mobile devices, and online reviews. The findings suggest that businesses should focus on digital marketing strategies to improve their performance and reach a wider audience.

Methodology
The research is based on a survey of 500 respondents. The data was collected through an online questionnaire. The results were analyzed using statistical software. The study also includes a literature review to provide context for the research. The findings suggest that digital marketing has a significant positive effect on consumer behavior.

Results
The results of the study show that digital marketing has a significant positive effect on consumer behavior. The study also identifies several factors that influence consumer behavior, such as social media, mobile devices, and online reviews. The findings suggest that businesses should focus on digital marketing strategies to improve their performance and reach a wider audience.

Conclusion
The study concludes that digital marketing has a significant positive effect on consumer behavior. The findings suggest that businesses should focus on digital marketing strategies to improve their performance and reach a wider audience.

References
1. Smith, J. (2020). Digital marketing and consumer behavior. *Journal of Marketing Research*, 57(3), 315-330.



Keywords: Digital marketing, Consumer behavior, Social media, Mobile devices, Online reviews.

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NARO: An Overview

The National Agriculture and Food Research Organization or NARO is the core institute in Japan for conducting research and development on agriculture and food. Our overall mission is to contribute to the development of society through innovations in agriculture and food, by promoting pioneering and fundamental R&D. We conduct technological development to make agriculture a competitive and attractive industry, and contribute to increasing the nation's food self-sufficiency rate. To this end, we conduct R&D to increase the productivity and safety of agriculture, and lessen production costs; and to promote new markets and future industries by developing value-added agricultural products, through incorporating market needs into respective products. In addition, we conduct R&D regarding global issues such as climate change, and the utilization of local agricultural resources to maximize the multi-functionality of agriculture. We regard the contribution to recovery from the Great East Japan Earthquake, and especially R&D in relation to the aftermath of the nuclear power station accident, as an important NARO mission. Achievements and intellectual properties become meaningful only when they are promulgated throughout society. NARO aims at the speedy implementation of our achievements by promoting public relations and promulgation efforts through industry-academia-government cooperation. Our missions are summarized as follows:

Establishment of Regional Farming Models

First, we set a goal to establish a regional farming model for each region, to contribute to the enhancement of production sites. Based on the research achievements of NARO, we will collaborate with national research institutes, universities and public corporations, to establish farming models adapted to each region. NARO and its regional research centers will play a major role in research on farm management, cultivation and cropping systems, ICT (Information and Communication Technology) and agricultural mechanization, livestock, horticulture, breeding, fertilizer and pest control.

Advancement in crop breeding using genomic selection

Breeding new cultivars and developing new technologies are essential to vigorous agricultural production. In particular, we regard advancement in crop breeding, which exploits research achievements in genome selection, as vital. The NARO Institute of Crop Science facilitates the speedy development of novel crops with highly desirable agronomic traits. For the time being, the research focus is rice, wheat and soybeans but in future this will be expanded to a wide range of crops, to advance breeding using genomic selection.

Incorporating market needs into research

The Agriculture and Food Business Research Center has been established to incorporate market needs into research, and thereby contribute to the health and quality of life. This research center will aim at enhancing research methods for industry-academia-government collaboration in developing functional products, as well as enhancing NARO's capacity to conduct consistent R&D from the production site to consumer's table.

Global issues and the utilization of local agricultural resources

The plans above involve future initiatives, but we consider it necessary to immediately emphasize and pursue cooperation regarding R&D projects relating to global issues and the utilization of local agricultural resources.

These tasks are fundamental to agriculture and farming communities, and a critical cornerstone of NARO's R&D. We must strengthen our R&D efforts regarding climate change, increasing the multi-functionality of agriculture and farming communities, development of biomass and reusable energy, utilization of abandoned fields and paddies, wildlife management, etc. The term 'environment', which is common to all these issues, is an important keyword for agricultural research. With the integration of the National Institute for Agro-Environmental Sciences (NIAES) into NARO, we will explore how R&D regarding the environment should incorporate environmental conservation-type agricultural R&D in the context of global issues.

Recovery from the Great East Japan Earthquake

R&D for recovery from the Great East Japan Earthquake is an important cornerstone of NARO's R&D mission. In 2012, we established the Agricultural Radiation Research Center in the Fukushima Prefecture, to respond to the nuclear power station accident. Based primarily in this center, we have been contributing to the development of decontamination technologies for farmland soil, and radioactive material transfer-control technologies for agricultural products; and will continue our efforts to restore productivity to all farms which are effected by the incident.

Creative research organization

Given the mission described above, NARO will aim to become a highly creative research organization, promoting gender equality and an open and comfortable working environment for our staff. At the same time, we will ensure rigorous operation, with full compliance and thorough risk management. In sum, NARO will seek to translate its goals into relevant terms for each member of its staff, while at the same time promoting a strong sense of unity and contribution to society.

National Institute of Animal Health, NARO

Livestocks play an important role in our lives. Animal products such as milk, meat, and eggs supply the proteins we need to stay healthy and build strong bodies. Safe, high quality animal products are produced from healthy livestock. Animals also contribute to the advancement of biotechnology and life sciences. The preservation of animal health through the implementation of preventive measures to contain various diseases is an important goal. The National Institute of Animal Health (NIAH) covers basic research to diagnosis and contributes to support animal health.

NIAH News**Technical support in the fight against FMD and TADs for Mongolia through the OIE**

Updated on Jan 6, 2016



The National Institute of Animal Health (NIAH) provides technical support in the fight against foot-and-mouth disease (FMD) and other transboundary animal diseases (TADs) for Mongolia through the World Organization for Animal Health (OIE). FMD is one of the most feared livestock diseases: it is highly infectious and a serious threat to the economic value of livestock. The NIAH, which is the only institution providing definite diagnosis of FMD in Japan, has been designated as a collaborating center of the OIE. The NIAH decided to provide technical support to the State Central Veterinary Laboratory (SCVL) in Mongolia to improve the diagnostic techniques for FMD and other TADs through the twinning project, which has been approved by the OIE.

Mathematics

Lesson 10: Area of a Trapezoid

Area of a Trapezoid



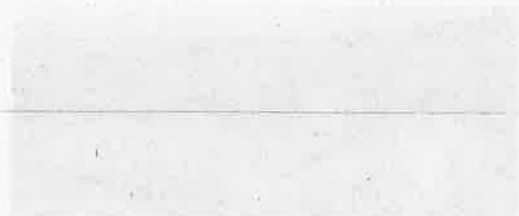
The area of a trapezoid is the amount of space inside the trapezoid. To find the area of a trapezoid, we can use the formula $A = \frac{1}{2}(a + b)h$, where a and b are the lengths of the parallel bases and h is the height. This formula can be derived by doubling the trapezoid to form a parallelogram with base $a + b$ and height h . The area of the parallelogram is $(a + b)h$, so the area of the original trapezoid is half of that, $\frac{1}{2}(a + b)h$.

Area of a Trapezoid

Find the area of the trapezoid with a top base of 4 units, a bottom base of 6 units, and a height of 3 units.

Area of a Trapezoid

The area of a trapezoid is the amount of space inside the trapezoid. To find the area of a trapezoid, we can use the formula $A = \frac{1}{2}(a + b)h$, where a and b are the lengths of the parallel bases and h is the height. This formula can be derived by doubling the trapezoid to form a parallelogram with base $a + b$ and height h . The area of the parallelogram is $(a + b)h$, so the area of the original trapezoid is half of that, $\frac{1}{2}(a + b)h$.



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Centers · Institutes

Research Programs

Global Initiatives

Outreach

English HOME > NIAH > About

National Institute of Animal Health, NARO

About

For Animal Health, For Human Health

Livestocks play an important role in our lives. Animal products such as milk, meat, and eggs supply the proteins we need to stay healthy and build strong bodies. Safe, high quality animal products are produced from healthy livestock. Animals also contribute to the advancement of biotechnology and life sciences. The preservation of animal health through the implementation of preventive practices to contain various diseases is an important goal. The National Institute of Animal Health (NIAH) covers basic research to diagnosis and contributes to support animal health.

Research Areas

Viral diseases

We have been conducting basic and applied researches on viral diseases of cattle, swine, poultry and others. We are focusing on the viral gene functions and host-pathogen interactions, and are developing diagnostic and preventive tools for them.

Bacterial and parasitic diseases

We focus on a wide range of bacterial and parasitic diseases of domestic animals including zoonosis. First of all, we elucidate molecular mechanisms of bacterial and parasitic diseases. Using the obtained results, we are going to develop new methods of diagnosis, effective treatment, and prevention for these diseases.

Transboundary diseases

Our research activities cover avian and swine influenza, arbovirus-associated diseases and exotic infectious diseases, such as Foot-and-Mouth disease. We scrutinize characteristics of those pathogens and develop technologies required for accurate diagnosis and for prevention of the diseases.

Pathology and pathophysiology

We conduct pathophysiological investigations for preventing production diseases, opportunistic diseases, mastitis and reproductive disorders. Mucosal vaccines for mastitis are attempted. Various diseases are diagnosed by pathological, biochemical and toxicological methods and the improvement of the methods are also attempted. For checking the individual animal health status, biosensor technologies are challenged.

Animal disease epidemiology

Using epidemiological methods, we analyze the diseases situations, their spread patterns and economic damages. Our researches aim at clarifying risk factors of the disease outbreaks, and establishing effective control and preventive measures.

Technology for feed safety

We conduct research on the safety of feed, livestock and animal products by developing detection methods and pathogenicity and toxicity evaluation for risk factors to humans and livestock such as food poisoning bacteria, mycotoxins, environmental pollutants and prions.

Services

Production of veterinary biologicals

We manufacture diagnostic agents, vaccines, and other medicines which are indispensable to the protection of farm stock against infectious diseases in Japan. We supply these biologicals primarily to institutions responsible for disease prevention and control, and animal quarantine in Japan.

Diagnostic services

In order to improve animal health in Japan, we provide diagnostic services using advanced technologies to diagnose novel diseases including exotic diseases in response to requests from central and local governments of Japan.

Technical cooperation and training programs

We conduct several types of training courses for animal health in response to the requests from governments and international organizations. We actively cooperate in the international development of technology.

History of NIAH

1891	Founded as the Epizootics Laboratory, annexed to the Bureau of Agricultural Affairs, the Ministry of Agriculture and Commerce, in Nishigahara, Tokyo.
1921	Established as an independent organization, the Institute for Infectious Diseases of Animals.
1937	Started to relocate to Kodaira, Tokyo (Finished in 1952).
1947	Renamed to the National Institute of Animal Health.
1979	Relocated to Tsukuba Science City.
2001	Reorganized as the National Institute of Animal Health, within the National Agricultural Research Organization (NARO).
2003	NARO reorganized as the National Agriculture and Bio-oriented Research Organization (NARO).
2008	NARO reorganized as the National Agriculture and Food Research Organization (NARO).
2016	NARO reorganized with integration of 3 national research institutes.

National Institute of Animal Health, NARO

Message

National Institute of Animal Health (NIAH) is the leading institute on animal health in Asia



I have been the Director General of the National Institute of Animal Health (NIAH) since this April. I do really feel heavy responsibility on this position. However I trust that I could overcome this situation with the support from my friends and NIAH staff.

The NIAH is the only research organization on the field of animal health in Japan. Although our organization, National Agriculture and Food Research Organization (NARO), was reorganized with the integration of 3 national research institutes, the name in English as well as the system of NIAH was not changed.

The NIAH has been designated as a national reference laboratory to diagnose and to prevent the outbreak or spread of domestic animal infectious diseases based on the Act of Domestic Animal Infectious Diseases Control. In 2010, NIAH together with the National Veterinary Assay Laboratory (NVAL) of the Ministry of Agriculture, Forestry and Fisheries (MAFF) has also been designated as collaborating center of the World Organization for Animal Health (OIE) on "Diagnosis and Control of Animal Diseases and Veterinary Product Assessment in Asia". Then in May 2015, NIAH has been chosen by OIE and the United Nations Food and Agriculture Organization (FAO) as a holding facility of rinderpest virus containing material, in recognition of its advanced quarantine management system and achievements in vaccine development against rinderpest, cattle plague, making Japan as one of the 4 countries in the world and the only Asian country with approved holding facilities. From January 2016, NIAH has been designated by OIE to provide technical support to the Mongolia Central Veterinary Institute in the fight against foot-and-mouth disease (FMD) and other transboundary animal diseases (TADs) for Mongolia, once again showing the growing recognition of NIAH in the international community. In addition, NIAH has also been designated as reference laboratory of 5 important animal diseases to make significant contributions in maintenance and safety of animal health. Furthermore, NIAH as the national reference laboratory, will cooperate with the Animal Health Division of the MAFF Food Safety Consumer Affairs Bureau in the OIE evaluation of the Performance of Veterinary Service (PVS), a global program for sustainable improvement of a country's compliance with OIE standards.

We will continue to contribute in preventing animal diseases not only in Japan but throughout the world to provide mankind with a safe and healthy livestock resources.

Kenichi SAKAMOTO
Director-General
National Institute of Animal Health, NARO

MEMORANDUM

TO : [Name] FROM : [Name] DATE: [Date]

REF ID: A66000

Subject: [Topic]

[Text]

[Text]

[Text]



[Text]

[Text]

[Text]

[Text]

National Institute of Animal Health (NIAH)



Topics in Animal Health Research 2014

01. Development of a genotyping method for predicting the serotypes of *Streptococcus suis*
02. Characteristics of *Salmonella* 4,[5],12:i:- as a monophasic variant of *S. Typhimurium*
03. Development of a portable suction trap equipped with ultraviolet light emitting diodes for efficient collection of haematophagous *Culicoides* biting midges
04. Development of a reverse-transcription polymerase chain reaction assay to detect bovine ephemeral fever virus gene
05. Development of rapid detection and differentiation method of typical and atypical *Melissococcus plutonius* strains
06. Application of a SYBR® Green One-Step Real-time Reverse Transcription-PCR Assay to Detect Type 1 Porcine Reproductive and Respiratory Syndrome Virus
07. The first isolation of genotype C bovine parainfluenza virus type 3 in Japan
08. Surveillance of gastro-intestinal diseases in cows in the Yamagata Prefecture from 2002 to 2011
09. First isolation of border disease virus in Japan is from a pig farm with no ruminants
10. Relationship between *Melissococcus plutonius* isolates from different countries
11. Isolation and characterization of a new serovar K12:O3 of *Actinobacillus pleuropneumoniae*
12. Isolation and characterization of new genetically atypical strains of *Actinobacillus pleuropneumoniae* serovar 6
13. Mutagenesis in the major outer membrane protein gene of *Histophilus somni* by an allelic exchange method
14. Experimental infection of cattle and goats with a foot-and-mouth disease virus isolated from the 2010 epidemic in Japan
15. Dose-dependent responses of pigs infected with the foot-and-mouth disease virus O/JPN/2010 by intranasal and intraoral routes
16. Evaluation of monoclonal antibody-based sandwich direct ELISA (MSD-ELISA) for antigen detection of foot-and-mouth disease virus using clinical samples
17. Amino acid substitutions that affect the pathogenicity of highly pathogenic avian influenza virus
18. Development of a vaccine against highly pathogenic avian influenza virus by attenuation using reverse genetics
19. Reassortant swine influenza viruses isolated in Japan contain genes from pandemic A(H1N1)2009
20. GT1-7 cells show susceptibility to specific mouse-passaged field scrapie isolates with a long incubation period

21. Ultrasensitive detection of PrP^{Sc} in the cerebrospinal fluid and blood of macaques infected with bovine spongiform encephalopathy prions
22. Development of a new bolus-type rumen sensor and continuous monitoring of rumen motility in cattle
23. Knockout serum replacement improves the development of porcine blastocysts produced *in vitro*
24. Monoclonal antibody-based competitive enzyme-linked immunosorbent assay for detection of antibodies against O:4 *Salmonella* in the sera of livestock and poultry
25. Lineage-specific distribution of IS-excision enhancer in enterotoxigenic *Escherichia coli* isolated from swine
26. Localization of fumonisin, a fungal mycotoxin, and determination of its concentration in different areas of corn ear
27. Injuries among the staff engaged in foot-and-mouth disease eradication, 2010 epidemic in Japan.
28. Evaluation of the transmission risk of foot-and-mouth disease in Japan
29. Parameters contributing to improved reproductive performance on farrow-to-finish swine farms in Japan
30. Effects of porcine reproductive and respiratory syndrome on the productivity of swine farms in Japan
31. Complete genome sequencing of two *Mycoplasma* species causing bovine mastitis
32. Development of molecular epidemiological analysis methods for *Mycoplasma californicum* involved in bovine mastitis
33. Evidence of clonal dissemination and replacement by molecular typing of *Salmonella enterica* serovar Enteritidis isolates from food-producing animals in Japan by multilocus variable-number tandem repeat analysis

English HOME > NIAH > Organization

National Institute of Animal Health, NARO

Organization

Director- General

- **Department of Planning and General Administration**

- **Deputy Director**

- **Planning and Cooperation Section**

- Coordinator for Animal Health Government Affairs
 - Coordinator for Communications
 - Planning Team
 - Fund Management Team
 - Cooperation Team

- **General Administration Section**

- General Affairs Team
 - Accounting Team
 - Kodaira Administration Team
 - Kagoshima Administration Team
 - Sapporo Administration Team

- **Risk Management Section**

- Coordinator for Risk Management
 - Coordinator for Safety Management

- **Biosafety Officer**

- **Biorisk Manager for Exotic Diseases**

- **Department of Animal Disease Control and Prevention**

- **Biologicals Production Group**

- Safety Management Section
 - Quality Assurance Section
 - Biologicals Production Section
 - Technical Services for Quality Control
 - Technical Services for Biologicals Production

- **Diagnosis Supporting Group**

- Quality Control Officer
 - Technical Service Team for Laboratory Diagnosis
 - Biological Resource Officer
 - Animal Health Information Officer

- **Technical Support Center**

- Sapporo Technical Support Team
 - Kodaira Technical Support Team

Kagoshima Technical Support Team

- **Director of Exotic Disease Research Station**
- **Senior Coordinator of Hokkaido Research Station**
- **Senior Coordinator of Kyushu Research Station**

◦ **Division of Viral Disease and Epidemiology**

- Bovine Viral Disease Unit
- Swine Viral Disease Unit
- Molecular Virology Unit
- Viral infection and Immunity Unit
- Epidemiology Unit

◦ **Division of Transboundary Animal Disease**

- Animal Influenza Unit
- Prion Disease Unit
- Exotic Disease Research Unit
- Subtropical Disease Control Unit

◦ **Division of Bacterial and Parasitic Disease**

- Intracellular Pathogen Unit
- Bacterial Pathogenesis Research Unit
- Mycobacterial Disease Unit
- Enteric Pathogen Unit
- Parasitic Disease Unit

◦ **Division of Pathology and Pathophysiology**

- Clinical Biochemistry Unit
- Theriogenology Unit
- Toxicology Unit
- Pathology Unit
- Dairy Hygiene Unit

English HOME > NIAH > Contact

National Institute of Animal Health, NARO

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FAX: +81-42-325-5122

Hokkaido Research Station

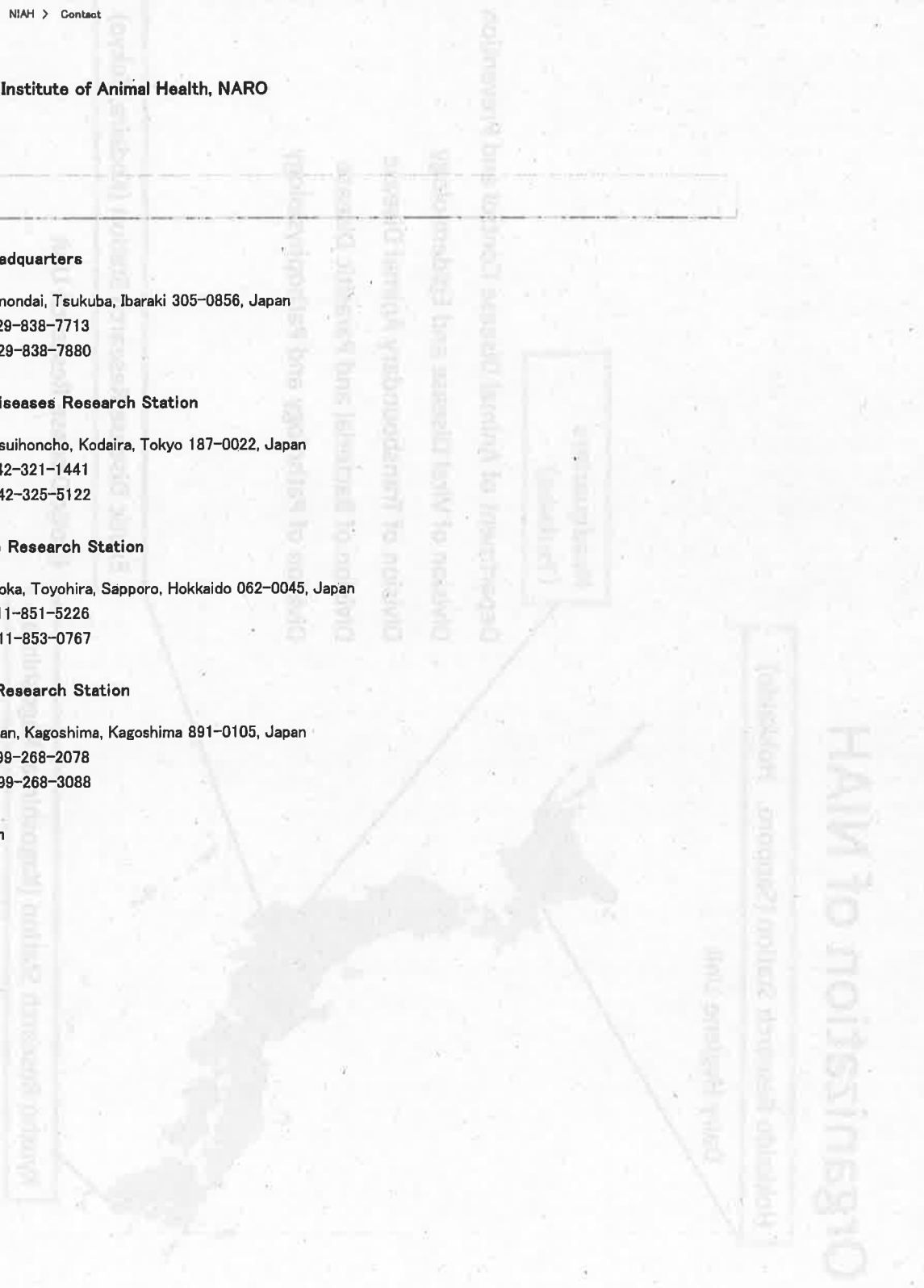
4 Hitsujigaoka, Toyohira, Sapporo, Hokkaido 062-0045, Japan
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Kyushu Research Station

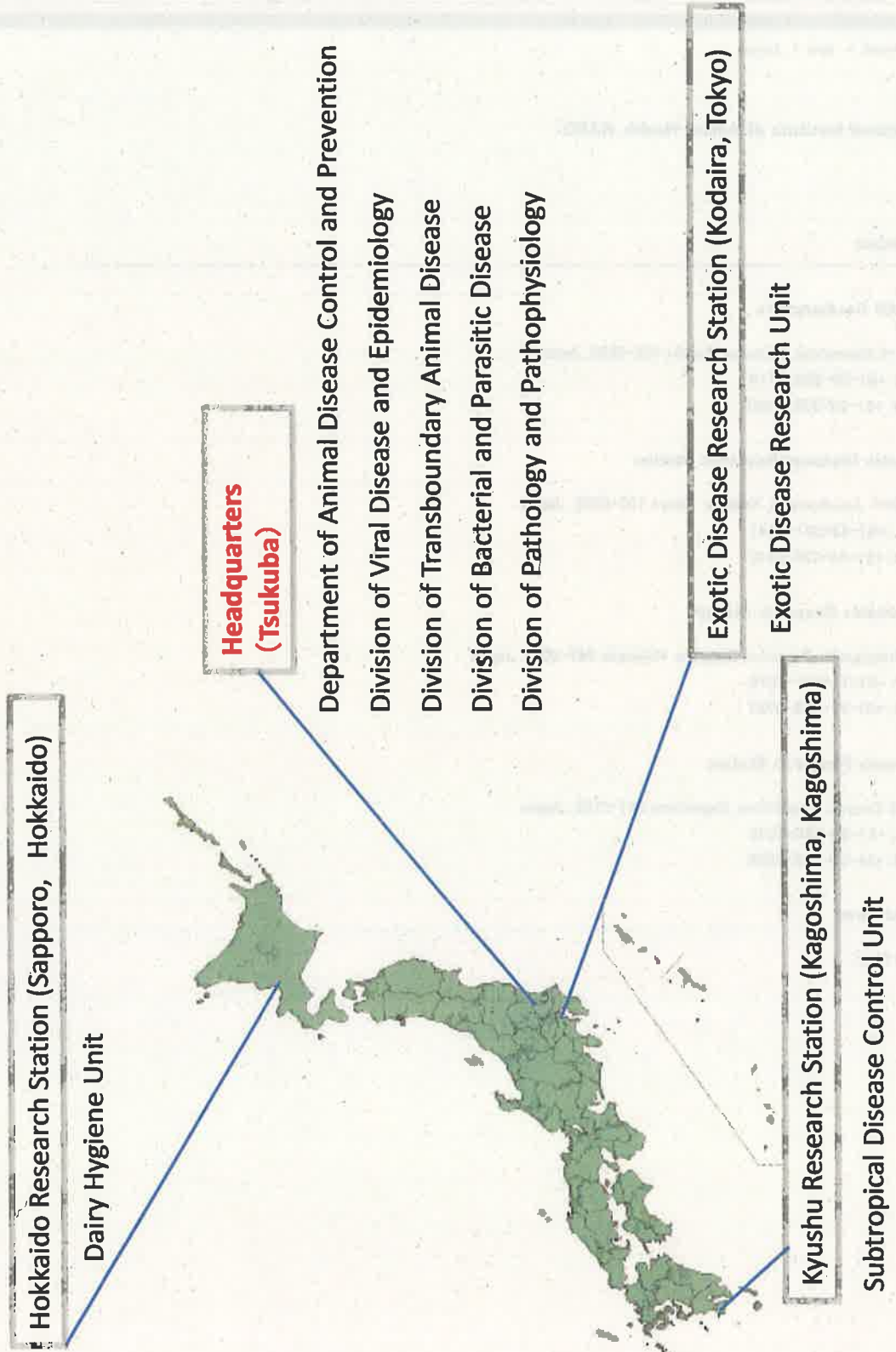
2702 Chuzan, Kagoshima, Kagoshima 891-0105, Japan
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FAX: +81-99-268-3088

Mail form

Mail form



Organization of NIAH



Numbers of employees (2010~2014)

Year	Permanent employees			Temporary employee	Total
	Researchers	Clerical employees	Supporting researchers		
2010	129	43	70	113	355
2011	129	40	68	105	342
2012	122	40	66	107	335
2013	117	35	64	88	304
2014	113	36	61	93	303

Budget (2010~2014)

(million JPY)

Year	Bonus				Research budget				Total	
	employee nt cost	operating cost	general administrative cost	income	subtotal	MAFF	MEXT	others		subtotal
2011	2,059	944	80	20	3,103	730	111	74	915	4,019
2012	1,841	935	88	26	2,891	697	139	73	909	3,800
2013	1,777	919	80	29	2,805	604	253	83	940	3,745
2014	1,903	972	63	30	2,967	552	122	116	790	3,757

Date	Saves				Spends				Balance
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
2017	1000	1000	1000	1000	1000	1000	1000	1000	1000
2018	1000	1000	1000	1000	1000	1000	1000	1000	1000
2019	1000	1000	1000	1000	1000	1000	1000	1000	1000
2020	1000	1000	1000	1000	1000	1000	1000	1000	1000
2021	1000	1000	1000	1000	1000	1000	1000	1000	1000

Account No: 123456789

Date	Saves				Spends				Balance
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
2022	1000	1000	1000	1000	1000	1000	1000	1000	1000
2023	1000	1000	1000	1000	1000	1000	1000	1000	1000
2024	1000	1000	1000	1000	1000	1000	1000	1000	1000
2025	1000	1000	1000	1000	1000	1000	1000	1000	1000

Account No: 987654321

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OIE Collaborating Centre

Diagnosis and Control of Prioritised Animal Diseases and Related Veterinary Products Assessment in Asia

- National Institute of Animal Health (NIAH), National Agriculture and Food
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- National Veterinary Assay Laboratory (NVAL), Ministry of Agriculture,
Forestry and Fisheries (MAFF)

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Organisation
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de la Santé
Animale

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for Animal
Health

Organización
Mundial
de Sanidad
Animal

Director General

Our Ref.: KH/SB 30.193

Paris, 4 June 2015

Dr Toshiro Kawashima
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Dear Dr Toshiro Kawashima,

It is my pleasure to inform you that at the 83rd OIE General Session (May 2015), the **High Containment Facilities of Exotic Diseases Research Station, National Institute of Animal Health (category A)** and the **Building for Safety Evaluation Research, Production Center for Biologicals, Building for Biologics Research and Development (storage), National Institute of Animal (category B)** were designated as approved for holding rinderpest virus containing material following the adoption of OIE Resolution No. 25 (appendix 1) by the OIE World Assembly of Delegates.

I would like to remind you of the process for designation and the Mandate for Rinderpest Holding Facilities which are described in Resolution No. 23 adopted in 2014 (appendix 2). To ensure that the **High Containment Facilities of Exotic Diseases Research Station, National Institute of Animal Health** and the **Building for Safety Evaluation Research, Production Center for Biologicals, Building for Biologics Research and Development (storage), National Institute of Animal** retain their designation it is most important that they continue to fully comply with the mandate. Any significant changes in management, infrastructure or the ability of the High Containment Facilities of Exotic Diseases Research Station, National Institute of Animal Health and the Building for Safety Evaluation Research, Production Center for Biologicals; Building for Biologics Research and Development (storage), National Institute of Animal to comply with this mandate must be immediately notified to the OIE.

I would thank you for your on-going efforts and for your contribution to ensuring continued global freedom from rinderpest.

Yours sincerely,

Dr Bernard Vallat

Encl.: Resolution No. 23 and Resolution No. 25

Cc: B. Evans, M. Eloit, D. Visser, K. Hamilton, K. Matsuo, S. Linnane, H. Kugita, B. Tekola

Oil

Oil is a fossil fuel that is formed from the remains of ancient plants and animals that lived millions of years ago. It is a non-renewable resource and is used to produce energy for electricity, heat, and transportation.

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Diagnostic Services (2015)

1. MORBIDITY OF OFFICIAL DISEASES

Foot and Mouth Disease	Numbers	Heads	Result	
			Positive	Negative
2011	6	17	0	17
2012	1	4	0	4
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0

High Pathogenic Avian Influenza	Numbers	Heads	Result	
			HPAI	LPAI
2011	24	27	27	0
2012	0	0	0	0
2013	0	0	0	0
2014	6	26	25	1
2015	5	37	37	0

Transmissible Spongiform Encephalopathy Surveillance	Numbers	Heads	Result	
			Positive	Negative
2011	311	406	1	405
2012	298	376	0	376
2013	341	419	0	419
2014	319	424	0	424
2015	299	415	0	415

(4) Avian Influenza Surveillance

Avian Influenza Surveillance (Feces of wild bird)	Numbers	Heads	Result	
			Positive	Negative
2011		8	0	8
2012	4	11	11*	0
2013	6	15	15*	0
2014	2	10	10*	0
2015	4	8	8*	0

* All LPAI

2. Other Diseases

Animal	2011	2012	2013	2014	2015
Cattle	386 (95)	660 (77)	730 (84)	511 (75)	983 (159)
Pig/Wild Boar	538 (50)	699 (86)	786 (105)	1,002 (115)	690 (80)
Horse	14 (3)	6 (3)	2 (2)	26 (3)	2 (2)
Sheep/Goat	221 (15)	162 (16)	158 (9)	64 (13)	274 (12)
Deer	33 (2)	74 (1)	73 (3)	55 (2)	0 (0)
Poultry	42 (6)	129 (8)	66 (12)	55 (5)	216 (22)
Others	19 (13)	86 (31)	90 (12)	37 (11)	103 (30)
Total	1,253 (184)	1,816 (222)	1,905 (227)	1,750 (224)	2,268 (305)

Training programmes(2015)

(1) Training courses on animal health

Category	Venue	Number of trainees	Period (Days)	Program	
Basic	Headquarters	48	2015.5.18~5.29 (12)	Trend of husbandry Animal health situation Basic theory	
Advanced	Headquarters	39	2015.9.15~9.17 (3)	Trend of husbandry Animal health situation State-of-the-art theory	
Special	Diagnosis	Headquarters Exotic Diseases Research Station Hokkaido Research Station Kyushu Research Station	35*	2015.5.13~12.4 (206)	Theory and practical training in viral, bacteriological, pathological and biochemical diagnosis
	Bovine diseases	Headquarters	45	2015.6.17~6.26 (10)	Theory and practical training in bovine health
	Swine diseases	Headquarters	39	2015.7.1~7.10 (10)	Theory and practical training in swine health
	Poultry diseases	Headquarters	44	2015.6.4~6.12 (9)	Theory and practical training in poultry health
	Foreign animal diseases	Headquarters	48	2015.9.1~9.4 (4)	Theory and practical training in foreign animal diseases
	Veterinary epidemiology	Headquarters	28	2015.9.28~10.9 (12)	Theory and practical training in veterinary epidemiology

※ : Special Diagnosis training course (Breakdown list)

	Virology	Bacteriology	Pathology	Biochemistry	Total
Headquarters	6	5	8	4	23
Exotic Diseases Research Station	3				3
Hokkaido Research Station	1	1	1		3
Kyushu Resear ch Station	2	2	2		6
Total	12	8	11	4	35

(2) Workshop on animal health

Category	Venue	Number of trainees	Period (Days)
Virology	Headquarters	49	2015.10.13~10.16 (4)
Bacteriology	Headquarters	41	2015.10.20~10.23 (4)
Pathology	Headquarters	45	2015.10.27~10.30 (4)
Biochemistry	Headquarters	47	2015.11.10~11.13 (4)

Training programme (2018)

(1) Training course on child health

Duration	Topic	Number of persons	Period (Date)	Region
1 day	Introduction	10	2018.01.15-16	Part of training course on child health
1 day	Introduction	10	2018.02.15-16	Part of training course on child health
2 days	Introduction, Family Health, Child Health, Adolescent Health	10	2018.03.15-16	Part of training course on child health
1 day	Introduction	10	2018.04.15-16	Part of training course on child health
1 day	Introduction	10	2018.05.15-16	Part of training course on child health
1 day	Introduction	10	2018.06.15-16	Part of training course on child health
1 day	Introduction	10	2018.07.15-16	Part of training course on child health
1 day	Introduction	10	2018.08.15-16	Part of training course on child health

(2) Special training course on child health

Year	Number of persons	Period (Date)	Region	Topic
2018	10	2018.01.15-16	Part of training course on child health	Introduction
2018	10	2018.02.15-16	Part of training course on child health	Introduction
2018	10	2018.03.15-16	Part of training course on child health	Introduction, Family Health, Child Health, Adolescent Health
2018	10	2018.04.15-16	Part of training course on child health	Introduction
2018	10	2018.05.15-16	Part of training course on child health	Introduction
2018	10	2018.06.15-16	Part of training course on child health	Introduction
2018	10	2018.07.15-16	Part of training course on child health	Introduction
2018	10	2018.08.15-16	Part of training course on child health	Introduction

(3) Training on child health

Course	Topic	Number of persons	Period (Date)
Introduction	Introduction	10	2018.01.15-16
Introduction	Introduction	10	2018.02.15-16
Introduction	Introduction	10	2018.03.15-16
Introduction	Introduction	10	2018.04.15-16

International Cooperation (2011~2015)

1 Technical Cooperation Project

	Period	Project site	Program
Project on capacity Development of Animal Health Laboratory	2011.7.17 ~ 2015.7.16 (2011 : 3 experts) (2012 : 3 experts) (2013 : 4 experts) (2014 : 1 expert) (2015 : 1 expert)	Indonesia	Improved the capacity of veterinary diagnosis techniques
The Project for Establishment of Cryo-bank System for Vietnamese Native Pig Resources and Sustainable Production System to Conserve Bio-diversity	2015.5.5 ~ 2020.5.4 (2015 : 2 experts)	Vietnam	Protecting Rare Breeds of Pig with a Gene Bank System

2 JICA

- (1) For the Group Training Course on Research on Veterinary Technology
- | | |
|-------------------|---|
| 2011.3.27 ~ 10.29 | 4 trainees (Indonesia (2), Mongolia, Zambia) |
| 2012.3.29 ~ 10.26 | 7 trainees (Cambodia, Indonesia (2), Mongolian (2), Myanmar, Zambia) |
| 2013.3.26 ~ 10.30 | 8 trainees (Afghanistan, Indonesia, Malaysia (2), Mongolian (3), Uganda) |
| 2014.3.27 ~ 10.30 | 7 trainees (Afghanistan, Cambodia, Ghana, Indonesia, Mongolian (2), Uganda) |
| 2015.3.29 ~ 10.30 | 8 trainees (Afghanistan, Ghana, Indonesia (2), Mongolian (3), Uganda) |
- (2) Veterinary Diagnosis for Paramedics (Indonesia)
- | | |
|------------------|------------|
| 2014.2.3 ~ 4.25 | 2 trainees |
| 2015.1.19 ~ 4.10 | 2 trainees |
- (3) Polymerase Chain Reaction Technique Training (Pakistan)
- | | |
|----------------|-----------|
| 2015.7.6 ~ 8.8 | 1 trainee |
|----------------|-----------|

List of NIAH produced Biological Products for Animal Use

Product	Unit
Live attenuated rinderpest virus vaccine (prepared for the outbreak)	50mL (50 Heads)
FITC - conjugated antibody against Campylobacter fetus	1mL (33 Samples)
Campylobacter fetus antigen for vaginal mucus agglutination test	50mL (25 Samples)
Bacillus anthracis antiserum for Ascoli test	2mL (0.4 × 5A) (4 Samples/A)
Brucella abortus antigen for serum agglutination test	20mL (80 Samples)
Brucella abortus antigen for complement fixation test	5mL (500 Samples)
Johnin (PPD of Mycobacterium paratuberculosis) for skin test	5mL (50 Heads)
Mycobacterium paratuberculosis antigen for complement fixation test	1mL (100 Samples)
Avian tuberculin (PPD of Mycobacterium avium) for skin test	5mL (50 Heads)
Salmonella Pullorum antigen for rapid whole blood plate agglutination test	20mL (666 Samples)
Mycoplasma mycoides antigen for complement fixation test	10mL (20 Samples)
Salmonella Abortusequi antigen for rapid plate agglutination test	5mL (25 Samples)

List of Main product Biological Products for Animal Use

Year	Product
2011	Use of animal products in the production of animal products
2012	Use of animal products in the production of animal products
2013	Use of animal products in the production of animal products
2014	Use of animal products in the production of animal products
2015	Use of animal products in the production of animal products
2016	Use of animal products in the production of animal products
2017	Use of animal products in the production of animal products
2018	Use of animal products in the production of animal products
2019	Use of animal products in the production of animal products
2020	Use of animal products in the production of animal products
2021	Use of animal products in the production of animal products
2022	Use of animal products in the production of animal products
2023	Use of animal products in the production of animal products
2024	Use of animal products in the production of animal products
2025	Use of animal products in the production of animal products
2026	Use of animal products in the production of animal products
2027	Use of animal products in the production of animal products
2028	Use of animal products in the production of animal products
2029	Use of animal products in the production of animal products
2030	Use of animal products in the production of animal products



JAB



Testing Laboratory
Accreditation
Certificate

Accreditation No. RTL04210

***Influenza and Prion Disease Research Center,
National Institute of Animal Health, NARO***

3-1-5 Kannondai, Tsukuba, Ibaraki, 305-0856 Japan

meets the following criteria. On the basis of this, Japan Accreditation Board (JAB) grants accreditation to the said testing laboratory.

Applicable accreditation criteria	: JIS Q 17025:2005 (ISO/IEC 17025:2005)
Scope of accreditation	: Biological sciences testing (As described in the appendix)
Premises covered by accreditation	: As described in the appendix.
Expiry date of accreditation	: January 31, 2020

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system.

The management system requirements in ISO/IEC 17025:2005 meet the principles of ISO 9001:2008 and are aligned with its pertinent requirements.

Initial accreditation

January 19, 2016

T. Oda, Chairman
Laboratory Accreditation Committee

H. Kume, President
Japan Accreditation Board

Accreditation No.

RTL04210



JAB



Accreditation Certificate

Appendix

(Page 1/1)

Type of Laboratory	Testing Laboratory
Name of Laboratory	Influenza and Prion Disease Research Center, National Institute of Animal Health, NARO
Address	3-1-5 Kannondai, Tsukuba, Ibaraki, 305-0856 Japan

1) Premises on which testing activities are performed

Name of Premise	Influenza and Prion Disease Research Center, National Institute of Animal Health, NARO	
Address of Premise	Postal Code	305-0856
	Address	3-1-5 Kannondai, Tsukuba, Ibaraki, Japan
Testing service at permanent facilities or on site testing service	<input checked="" type="checkbox"/> Testing service at permanent facilities <input type="checkbox"/> On site testing service	

Scope of Accreditation

CODE OF CLASSIFICATION, MATERIALS OR PRODUCTS TESTED / TECHNIQUE USED	PROPERTIES MEASURED	TEST METHOD STANDARD / STANDARD OPERATING PROCEDURE
M32.A2.8/B1.3 allantoic fluid, Culture supernatant	Subtyping of haemagglutinin protein (influenza virus)	WHO manual on animal influenza diagnosis and surveillance Ch.E.(May 2002)/ HA subtyping of influenza A virus by hemagglutination inhibition assay (SOP)
(Note)		

Japan Accreditation Board