

# OIE Collaborating Centres Reports Activities

## *Activities in 2021*

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<b>Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):</b>	Professor Kohei Makita
<b>Name of writer:</b>	Professor Kohei Makita

**ToR: To provide services to the OIE, in particular within the region, in the designated specialty, in support of the implementation of OIE policies and, where required, seek for collaboration with OIE Reference Laboratories**

**ToR: To identify and maintain existing expertise, in particular within its region**

**1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by the OIE**

Food safety	
Title of activity	Scope
Extension of herd health management	RGU assists dairy farmers in Japan and Asia and Pacific region for herd health management.
Antimicrobial drug resistance risk assessments	RGU develops the methods of rapid diagnoses of AMR and assessing the risks of AMR in animal source foods and vegetables collaborating with NVAL, Japan, and other partners.
Researches on brucellosis in animals and humans	RGU conducts epidemiological and socio-economic studies of brucellosis in Sri Lanka, Myanmar and Tanzania.
Organizing Food Toxicology Conference	NCFS organised the Food Toxicology Conference focusing on the opportunities and challenges for the safe use of nanomaterials in food was organised from 26-29 Jan 2021, Singapore.
Teaching laboratory development competence development to postgraduate students	NCFS gave a presentation titled, "Enhancing Laboratory Competence Development in ASEAN" to Rakuno Gakuen University on 19 Jan 2021.
ASEAN Training Workshop	NCFS organised the ASEAN Training Workshop on Risk Analysis for AMR Arising from Use of Antimicrobial Agents in Aquaculture was organised from 1-3 Feb 2021, Singapore.
ASEAN Consultative Meeting	NCFS participated in the ASEAN Consultative Meeting to develop 5-year Regional Plan of Action on AMR in Aquaculture was organised from 4-5 Feb 2021, Singapore.
Food Safety Risk Analysis training for postgraduate students	RGU provided 2-weeks Risk Analysis training for PhD students from Swedish Agriculture University (March) and Addis Ababa University (June).
WHO Virtual Roundtables	NCFS participated in the WHO Virtual Roundtables: Advancing the Implementation of the Regional Framework for Action on Food Safety in the Western Pacific on 16 March 2021.
Food Safety Risk Analysis training for OIE Members	RGU/RCFS/NCFS together with IZSAM organised Food Safety Risk Analysis training course for OIE Members in Asia and Pacific between May 31 to June 9.
JICA online training on herd health and epidemiology in Mongolia	RGU provided JICA online training in Mongolia for public officers, university researchers and private sector veterinarians.

Bovine mastitis control research and education	RGU conducts education and research on bovine mastitis control.
Food safety risk assessment and mathematical modelling	RGU conducts mathematical modelling for disease control, carcass cooling, and food safety for research, extension and education.
Streptococcus suis disease control	Monitoring of Streptococcus suis in pig farms to prevent outbreak of the disease at University of Tokyo.
Researches on prudent use of AMR in food animals	University of Tokyo researches on prudent use of AMR in food animals under collaboration with National Veterinary Assay Laboratory, Japan.
Control of zoonotic bacterial and viral pathogens in humans and animals	University of Tokyo researches on control of zoonotic bacterial and viral pathogens in humans and animals.
Food testing technical expertise, inter-laboratory comparison, training commercial laboratories	<p>NCFS provides technical expertise, inter-laboratory comparison studies and has trained commercial food testing laboratories under the Singapore Food Agency (SFA) Laboratory Recognition Programme (LRP) in the following domain areas:</p> <ul style="list-style-type: none"> <li>a) Drug Residues</li> <li>b) Food Radioactivity</li> <li>c) Food Microbiology</li> </ul>
Provision of scientific data to enhance public awareness	<p>NCFS provides scientific data to enhance public awareness through:</p> <ul style="list-style-type: none"> <li>a) Monitoring and research studies on food safety risks</li> <li>b) Data analytics and statistical modelling</li> <li>c) Evaluation of food safety risks</li> </ul>
Supporting ASEAN Food Reference Laboratories (AFRLs)	<p>NCFS contributes our domain expertise as the ASEAN Food Reference Laboratories (AFRLs) in the following areas:</p> <ul style="list-style-type: none"> <li>a) Pesticide Residue</li> <li>b) Environmental Contaminants</li> <li>c) Mycotoxins</li> <li>d) Marine Biotoxins and Scombrototoxin</li> </ul>
Research on diseases of small and large animals	University of Tokyo conducts diagnostic, pathological, epidemiological and therapeutic studies on diseases of small and large animals.

***ToR : To propose or develop methods and procedures that facilitate harmonisation of international standards and guidelines applicable to the designated specialty***

**2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the surveillance and control of animal diseases, food safety or animal**

## welfare

Proposal title	Scope/Content	Applicable area
FAO Risk profile - Group B Streptococcus (GBS) - Streptococcus agalactiae sequence type (ST) 283 in freshwater fish	RGU Dr Makita contributed to FAO risk profile as an expert. Bangkok. <a href="https://doi.org/10.4060/cb5067en">https://doi.org/10.4060/cb5067en</a>	<input type="checkbox"/> Surveillance and control of animal diseases <input checked="" type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
WHO/WPRO draft manual on mitigation of public health risks in traditional food markets in the Asia-Pacific Region	RGU Dr Makita contributed to manual development as a temporal expert	<input type="checkbox"/> Surveillance and control of animal diseases <input checked="" type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
Food Safety Commission AMR Working Group, Cabinet Office of Japan	RGU Dr Makita contributed to amendment of guideline of risk assessment for AMR by use of antimicrobials to livestock	<input type="checkbox"/> Surveillance and control of animal diseases <input checked="" type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
Working Group Endorsement of Methods of Analysis and Sampling Meeting	NCFS participated in the preparation for the endorsement of the methods of analysis and sampling to be put forward at CCMAS41 for consideration	<input type="checkbox"/> Surveillance and control of animal diseases <input checked="" type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
ASEAN Consultative Meeting on AMR	<p>NCFS participated in the development of the following:</p> <ul style="list-style-type: none"> <li>• 5-Year Regional Plan of Action on Antimicrobial Resistance in Aquaculture</li> <li>• ASEAN Guideline on Techniques for Veterinary Drug Residue Detection in Aquaculture Products</li> <li>• ASEAN Guideline for the Prudent Use of Antimicrobials in Aquaculture</li> <li>• ASEAN guideline on Performing Risk Analysis for Antimicrobial Resistance arising from the use of Antimicrobial Agents in Aquaculture</li> </ul> <p>Plan of Action for the ASEAN Cooperation in Combatting AMR in Aquaculture Sector</p>	<input type="checkbox"/> Surveillance and control of animal diseases <input checked="" type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
Japan Food Research Laboratories (JFRL)	NCFS participated in the verification of LC-MS/MS method for detection of ciguatoxins	<input type="checkbox"/> Surveillance and control of animal diseases <input checked="" type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare

***ToR: To establish and maintain a network with other OIE Collaborating Centres designated for the same specialty, and should the need arise, with Collaborating Centres in other disciplines***

***ToR: To carry out and/or coordinate scientific and technical studies in collaboration with other centres, laboratories or organisations***

**3. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?**

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Instituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise G.Caporale (IZSAM)	Italy	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East	Conduct a joint training program of risk analysis
3rd OIE Regional Meeting for OIE Reference Centres in Asia and the Pacific	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the following RCs/CCs activities:  • Exploration on lab twinning and possible collaborations  Held from 24-25 Feb 2021. (Virtual platform)
18th AFTLC Meeting	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS reviewed the on-site visit reports for 5-year term renewal of AFRLs submitted by the panel of experts from 4-5 Mar 2021. (Virtual platform)
APEC High Level Policy Dialogue on Agricultural Biotechnology - Virtual Workshop on Building Regulatory Capacities for Biotechnology (Genetic Engineering)	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the dialogue to raise the awareness of APEC member economies on the various policy and regulatory approaches toward agricultural biotechnologies that would facilitate the adoption, use, and commercialization of biotech products from 27-28 Apr 2021. (Virtual platform)

APEC Workshop – Discussing the Strategies Promoting the Application of Shared Responsibility	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on APEC Food Safety Modernisation Framework to the Management of Import and Export Food Safety in the APEC Region on 22 May 21. (Virtual platform)
14th session of the Codex Committee of Contaminants in Food	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on maximum levels of contaminants such as heavy metals and toxins in different food commodities and the Code of Practice for reduction of contaminants were discussed from 3-7, 13 May 21. (Virtual platform)
41st session of the Codex Committee on Methods of Analysis and Sampling	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on international quality standards for analysis and sampling of foods, and these standards then become binding for all parties involved in food analysis from 17-25 May 21. (Virtual platform)
WHO Workshop on Regulatory and food safety aspects of alternative proteins for conventional animal products	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on regulatory perspectives and food safety aspects of alternative proteins on 20 May 21. (Virtual platform)
25th Meeting of Expert Working Group on the Harmonization of MRLs of Pesticides among ASEAN Member States (EWG-MRLs)	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on issues and maximum levels of pesticides for harmonization from 24-25 May 21. (Virtual platform)
1st Meeting of the AMR Technical Advisory Group of the South Asian Association of Regional Cooperation	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on development the Terms of References for the TAG, as well as discuss emerging technical issues on AMR surveillance and current needs in setting up and sustaining a harmonized AMR surveillance within countries and across the region from 5-7 Jul 21. (Virtual platform)
18th Meeting of the ASEAN Genetically Modified Food Testing Network (GMFNet)	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on issues related to GM food analysis on 15 Jul 21. (Virtual platform)
25th session of the Codex Committee on Residues of Veterinary Drugs (CCRVDF) in Food	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on maximum residues levels (MRLs) of various drug residues were discussed from 12-16 and 20 Jul 2021. (Virtual platform)

52nd Session of Codex Committee on Pesticide Residues (CCPR) in Food	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on maximum residues levels (MRLs) of various drug residues were discussed from 26-30 Jul & 3 Aug 21. (Virtual platform)
2021 International Workshop for Non-Animals Approaches in Food Sector - An Overview of The Current Situation & Avenues for Further Research	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on current non-animal approaches to toxicological and allergenicity detection from 21-22 Oct 21. (Virtual platform)
11th Annual Global Summit on Regulatory Science	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on discussion on regulatory Sciences for Food/Drug Safety with Real-World Data and Artificial Intelligence (AI) from 4-6 Oct 21. (Virtual platform)
WHO SEARO Regional Roundtable Meeting	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	<p>NCFS participated on the following:</p> <ul style="list-style-type: none"> <li>• Updated progress made in implementation of Framework for Action on Food Safety in WHO South-East Asia Region.</li> <li>• Discussed various (regulatory and technical) aspects of National Food Control System under Framework for Action on Food Safety including a regional networking.</li> <li>• Proposed key recommendations to accelerate implementation of the Framework for Action on Action on Food Safety.</li> </ul> <p>Held from 25-28 Oct 21. (Virtual platform)</p>
Recent Advances in Food Analysis (RAFA 2021)	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on insights into contemporary trends in analytical & bioanalytical strategies in food quality and safety control and discuss challenges / novel approaches in food and natural product analysis from 3-4 Nov 21. (Virtual platform)

The 18th Asia Nano Forum Summit (ANFoS2021) - Nanosafety Forum on Country Experiences and Predictive Model Developments for Safety Guidelines and Standardization	Singapore	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	NCFS participated in the discussion on an update on the status of nanotechnology development in their countries and share experiences among peers to promote collaboration in the future from 5-8 Aug 21. (Virtual platform)
WHO Biregional Advocacy Meeting on Risk Mitigation In Traditional Food Markets in the Asia Pacific Region	Philippines	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	RGU participated in the Biregional Advocacy Meeting on Risk Mitigation In Traditional Food Markets in the Asia Pacific Region on 1 and 2 September, 2021 (virtual platform)

**4. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?**

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
National Veterinary Assay Laboratory	Japan	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Joint research on antimicrobial drug resistance in livestock and vegetables by RGU, and on prudent use by University of Tokyo
Onderstepoort Veterinary Research Institute, the OIE Reference Laboratory for rabies	South Africa	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Joint research on rabies in wildlife/ domestic dogs and humans
National Institute of Animal Health	Japan	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Joint epidemiological research in classical swine fever

**ToR: To place expert consultants at the disposal of the OIE.**

**5. Did your Collaborating Centre place expert consultants at the disposal of the OIE?**

No



**ToR: To provide, within the designated specialty, scientific and technical training to personnel from OIE Member Countries**

**6. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by the OIE, to personnel from OIE Member Countries?**

Yes

a) Technical visits: 140

b) Seminars: 1755

c) Hands-on training courses: 115

d) Internships (>1 month): 1

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
a	KPMG visit to understand various capabilities at the SFA's National Centre for Food Science	Singapore	5
a	Minister visit to understand various capabilities at the SFA's National Centre for Food Science	Singapore	3
a	NUS FST Student visit to understand various capabilities at the SFA's National Centre for Food Science	Singapore	132
b	Rabies prevention officers youtube seminar by Ministry of Health, Labour and Welfare of Japan: Animal rabies during outbreaks - Japan, Vietnam and South Africa. Prof Makita at RGU, February 2021	Japan	200
b	Japan Veterinary Association online seminar: Classical swine fever in wild boar. Prof Makita at RGU, March 6, 2021	Japan	200
b	OIE-CC for Food Safety in Asia and Pacific and Europe risk analysis webinar. May 31, 2021	Bhutan, Brunei, China, Ethiopia, Fiji, Hong Kong, India, Indonesia, Japan, Malaysia, Maldives, Mongolia, Nepal, New Caledonia, New Zealand, Singapore, Taiwan, Thailand, Timor L'este, Vanuatu, and Vietnam	71
b	The 8th One health research forum: Impact of COVID-19 on the present and future (RGU and online platform). May 13, 2021	Japan, Thailand, Cambodia	50
b	Assessment of exposure of agricultural agents and health effects. by Prof Ikenaka at Hokkaido University, hosted by RGU (June 17, 2021)	Japan and other Asian and African countries	13

b	Japan Association of Livestock Clinics online seminar: What epidemiology makes change? Prof Makita, RGU, July 9, 2021	Japan	30
b	Hokkaido University online zoonosis control expert lecture series: Control of brucellosis in Uganda and Tanzania. Prof Makita at RGU, September 2, 2021	Bangladesh, China, Japan, Mongolia, Sri Lanka, Thailand, Zambia	30
b	OIE-CC online seminar at Japan Society for Veterinary Science: The heart and shape of veterinary extension. Prof Oikawa and Prof Makita, September 9, 2021	Japan	100
b	Dr Calvin Yeo gave a presentation titled, "Enhancing Laboratory Competence Development in ASEAN" to Rakuno Gakuen University on 19 Jan 2021.	Japan	30
b	Japan Livestock Industry Association online seminar: Classical swine fever in wild boar. Prof Makita at RGU, September 17, 2021	Japan	200
b	Elanco online seminar: Action for AMR toward sustainable production and provision of animal-source foods. Prof Makita at RGU, October 1-31, 2021	Japan	200
b	Hokkaido University online One Health seminar: Control of brucellosis in Uganda and Tanzania. Prof Makita at RGU, November 15, 2021	Bangladesh, China, Japan, Mongolia, Sri Lanka, Thailand, Zambia	31
b	Association of Animal Clinical Medicine online seminar: Effects of COVID-19 on veterinary clinics. Prof Makita, November 20, 2021	Japan	200
b	The 6th One Health Lecture Series on Solutions to Global One Health Challenges Towards Human Animals and Environmental Health. Prof Makita, Prof Usui, Prof Asakawa, and Dr. Uchida at RGU, and researchers from Hokkaido University and Thammasat University, December 10-11, 2021	Japan, Thailand, Cambodia, other countries	200
b	Joint Conference between University Tokyo and National Taipei University College of Bio-Resources and Agriculture.	Chinese Taipei	100
b	Commemorative Symposium on One Health for the Completion of OIE Veterinary Education Establishments (VEE) Twinning Project between University Tokyo and Royal University of Agriculture, Cambodia.	Cambodia	100
c	Swedish University of Agricultural Science PhD program 'Risk analysis hands on online course'. Main tutor Prof Makita at RGU, March 8-19, 2021.	Sweden, Cambodia, Italy, Thailand, Vietnam	20

c	OIE-CC for Food Safety Risk Analysis online course for the OIE Member countries. May 31 – June 11	Bhutan, Brunei, China, Ethiopia, Fiji, Hong Kong, India, Indonesia, Japan, Malaysia, Maldives, Mongolia, Nepal, New Caledonia, New Zealand, Singapore, Taiwan, Thailand, Timor L'este, Vanuatu, Vietnam	35
c	JICA online hands-on training course: Veterinary epidemiology and herd health. Prof Makita, November 24, 2021.	Mongolia	60
d	Ph.D. program on epidemiology in avian influenza at RGU	South Africa	1

***ToR: To organise and participate in scientific meetings and other activities on behalf of the OIE***

**7. Did your Collaborating Centre organise or participate in the organisation of scientific meetings on behalf of the OIE?**

Yes

National/International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	Food safety risk analysis course for the OIE Member Countries in Asia and Pacific region; open webinar	OIE-CC for Food Safety in Europe/ILRI/  Addis Ababa University	05/21	Virtual	71
International	Joint FAO/WHO/UNEP/OIE/WFP event for Asia and the Pacific, Together we make food safe: One Health approach; presenting 'Animal Production and Health' on behalf of the OIE	FAO/WHO/UNEP/WFP	06/21	Virtual	200
International	OIE Regional Workshop on Animal Feed Safety  FAMIC Virtual Training on Heavy metals; contributed as a moderator	FAMIC, Japan	11/21	Virtual	70

**ToR: To collect, process, analyse, publish and disseminate data and information relevant to the designated specialty**

**8. Publication and dissemination of any information within the remit of the mandate given by the OIE that may be useful to Member Countries of the OIE**

a) Articles published in peer-reviewed journals: 67

1. Churak A, Poolkhet C, Tamura Y, Sato T, Fukuda A, Thongratsakul S. 2021. Evaluation of nosocomial infections through contact patterns in a small animal hospital using social network analysis and genotyping techniques. *Scientific Reports*. 11:1647.
2. Fukuda A, Nakamura H, Umeda K, Yamamoto K, Hirai Y, Usui M, Ogasawara J. 2021. Seven-year surveillance of the prevalence of antimicrobial-resistant *Escherichia coli* isolates, with a focus on ST131 clones, among healthy people in Osaka, Japan. *Int J Antimicrob Agents* 57:106298.
3. Fukuda A, Usui M, Ushiyama K, Shrestha D, Hashimoto N, Sakata MK, Minamoto T, Yoshida O, Murakami K, Tamura Y, Asai T. 2021. Prevalence of Antimicrobial-Resistant *Escherichia coli* in Migratory Greater White-Fronted Geese (*Anser albifrons*) and their Habitat in Miyajimanuma, Japan. *J Wildl Dis* 57:954-958.
4. Katada S, Fukuda A, Nakajima C, Suzuki Y, Azuma T, Takei A, Takada H, Okamoto E, Kato T, Tamura Y, Usui M. 2021. Aerobic Composting and Anaerobic Digestion Decrease the Copy Numbers of Antibiotic-Resistant Genes and the Levels of Lactose-Degrading Enterobacteriaceae in Dairy Farms in Hokkaido, Japan. *Frontiers in Microbiology* 12.
5. Kudo H, Sugiura T, Higashi S, Oka K, Takahashi M, Kamiya S, Tamura Y, Usui M. 2021. Characterization of Reproductive Microbiota of Primiparous Cows During Early Postpartum Periods in the Presence and Absence of Endometritis. *Frontiers in Veterinary Science* 8.
6. Nakamura K, Fujiki J, Furusawa T, Nakamura T, Gonsaira S, Sasaki M, Usui M, Higuchi H, Sawa H, Tamura Y, Iwano H. 2021. Complete Genome Sequence of a Veterinary *Pseudomonas aeruginosa* Isolate, Pa12. *Microbiol Resour Announc* 10:e0039821.
7. Nakamura K, Fujiki J, Nakamura T, Furusawa T, Gonsaira S, Usui M, Higuchi H, Tamura Y, Iwano H. 2021. Fluctuating Bacteriophage-induced galU Deficiency Region is Involved in Trade-off Effects on the Phage and Fluoroquinolone Sensitivity in *Pseudomonas aeruginosa*. *Virus Research* 306:198596.
8. Odoi JO, Takayanagi S, Sugiyama M, Usui M, Tamura Y, Asai T. 2021. Prevalence of Colistin-Resistant Bacteria among Retail Meats in Japan. *Food Saf (Tokyo)* 9:48-56.
9. Sabala RF, Usui M, Tamura Y, Abd-Elghany SM, Sallam KI, Elgazzar MM. 2021. Prevalence of colistin-resistant *Escherichia coli* harbouring mcr-1 in raw beef and ready-to-eat beef products in Egypt. *Food Control* 119:107436.
10. Sato T, Usui M, Harada K, Fukushima Y, Nakajima C, Suzuki Y, Yokota SI. 2021. Complete Genome Sequence of an mcr-10-Possessing *Enterobacter roggenkampii* Strain Isolated from a Dog in Japan. *Microbiol Resour Announc* 10:e0042621.
11. Sato T, Usui M, Harada K, Fukushima Y, Nakajima C, Suzuki Y, Yokota SI. 2021. Complete Genome Sequence of an mcr-9-Possessing *Enterobacter asburiae* Strain Isolated from a Cat in Japan. *Microbiol Resour Announc* 10:e0028121.
12. Tsunoda R, Usui M, Tagaki C, Fukuda A, Boonla C, Anomasiri W, Sukpanyatham N, Akapelwa ML, Nakajima C, Tamura Y, Suzuki Y. 2021. Genetic characterization of coliform bacterial isolates from environmental water in Thailand. *J Infect Chemother* 27:722-728.
13. Umeda K, Nakamura H, Fukuda A, Matsumoto Y, Motooka D, Nakamura S, Yasui Y, Yoshida H, Kawahara R. 2021. Genomic characterization of clinical *Enterobacter roggenkampii* co-harboring blaIMP-1- and blaGES-5-encoding IncP6 and mcr-9-encoding IncHI2 plasmids isolated in Japan. *Journal of Global Antimicrobial Resistance*. 24:220-227.
14. Usui M, Nozawa Y, Fukuda A, Sato T, Yamada M, Makita K, Tamura Y. 2021. Decreased colistin resistance and mcr-1 prevalence in pig-derived *Escherichia coli* in Japan after banning colistin as a feed additive. *J Glob*

Antimicrob Resist 24:383-386.

15. Usui M, Tase J, Onozaki M, Suzuki Y, Tamura Y, Nakajima C. 2021. Campylobacter Express Resistance Array for detecting the presence of fluoroquinolone- and macrolide-resistant Campylobacter jejuni and Campylobacter coli in broiler farms. *J Appl Microbiol* doi:10.1111/jam.15390.
16. Usui M, Tateno S, Onozaki M, Misawa N, Suzuki Y, Tamura Y, Nakajima C. 2021. Rapid and simultaneous detection of fluoroquinolone- and macrolide-resistant Campylobacter jejuni/coli in retail chicken meat using CAMpylobacter Express Resistance Array (CAMERA). *Food Control* 123:107815.
17. Fujiki J, Yoshida S, Nakamura T, Nakamura K, Amano Y, Nishida K, Nishi K, Sasaki M, Iwasaki T, Iwasaki T, Sawa H, Komatsuzawa H, Hijioaka H, Iwano H. 2021. Novel Virulent Bacteriophage  $\Phi$ SG005, Which Infects *Streptococcus gordonii*, Forms a Distinct Clade among *Streptococcus* Viruses. *Viruses*. 13(10):1964.
18. Otsuka M, Sugiyama M, Ito T, Tsukano K, Oikawa S, Suzuki K. 2021. Diagnostic utility of measuring serum amyloid A with a latex agglutination turbidimetric immunoassay in bovine mastitis: Comparison with haptoglobin and alpha-1 acid glycoprotein. *J. Vet. Med. Sci.* 83:329-332.
19. Elmeligy E, Oikawa S, Mousa SA, Bayoumi SA, Hafez A, Mohamed RH, Al-Iethie AA, Hassan D, Khalphallah A. 2021. Role of insulin, insulin sensitivity, and abomasal functions monitors in evaluation of the therapeutic regimen in ketotic dairy cattle using combination therapy with referring to milk yield rates. *Open Vet. J.* 11:228-237.
20. Fukumori R, Takayama T, Izumi K, Oikawa S. 2021. Effects of digestive drug containing betaine hydrochloride on dry matter intake, rumen profiles, and blood concentrations of gut hormones in non-lactating cows. *The Japanese Journal of Animal Hygiene* 47(4) in press.
21. Sarentonglaga B, Ahibe S, Kato T, Atchalalt K, Fukumori R, Nagao Y. 2021. The effects of glutathione ethyl ester in in vitro maturation on the developmental ability of oocytes derived from cattle with liver abnormalities. *Theriogenology* 170 85-90.
22. Fukumori R, Shi W, Oikawa S, Oba M. 2021. Evaluation of relationship between ruminal pH and the proportion of de novo fatty acids in milk. *JDS Communications* 2(3) 123-126.
23. Fukumori R, Ikeno R, Izumi K, Doi K, Otsuka O, Suzuki K, Oikawa S. 2021. The effect of sodium butyrate supplementation on ruminal and fecal pH and serum lipopolysaccharide-binding protein after ruminal acidosis challenge in non-lactating cows. *Animal Science Journal* (accepted)
24. Nagahata H, Kine M, Watanabe H, Tanaka A, Takahashi A, Gonsaira S, Higuchi H. 2021. Somatic cell and innate immune responses in mammary glands of lactating cows to intramammary infusion of *Bifidobacterium breve* at pre-drying off period. *J Vet Med Sci* 82(12) 1845-1851.
25. Ganbaatar O, Konnai S, Okagawa T, Nojima Y, Maekawa N, Ichikawa Y, Kobayashi A, Shibahara T, Yanagawa Y, Higuchi H, Kato Y, Suzuki Y, Murata S, Ohashi K. 2021. Programmed death-ligand 1 expression in swine chronic infections and enhancement of interleukin-2 production via programmed death-1/programmed death-ligand 1 blockade. *Immun. Inflamm. Epub* 2021.
26. Nishi K, Gonsaira S, Okamoto M, Matsuda K, Sato A, Kato T, Sasagawa M, Tanaka T, Higuchi H. 2021. Inflammatory cytokine mRNA and protein levels in the synovial fluid of *Mycoplasma arthritis* calves. *J Vet Med Sci* 83(1):31-35
27. Gonsaira S, Nishi K, Fujiki J, Iwano H, Watanabe R, Eguchi A, Hirano Y, Higuchi H, Nagahata H. 2021. Innate immune response in bovine neutrophils stimulated with *Mycoplasma bovis*. *Vet Res* 52(1):58.
28. Nishi K, Hirano Y, Sato A, Eguchi A, Matsuda K, Toda M, Watanabe T, Iwasaki T, Takahashi N, Hosotani M, Watanabe R, Kato T, Ohtsuka H, Gonsaira S, Higuchi H. 2021. Effects of intra-articular inoculation with *Mycoplasma bovis* on immunological responses in calf joints. *Vet immunol immunopathol*, in press.
29. Kitano N, Kiku Y, Gonsaira S, Takahashi T. Effect of sampling volume for viable bacterial count and somatic cell count in cows' foremilk. 2021. *Jp J Anim Hyg* 46:189-193.
30. Hagiwara K, Matsumoto T, Tsendendamba P, Baba K, Hoshino B. 2021. Bacterial Characteristics of Dust Particle

Saltation in Gobi Dust Sites, Mongolia. *Atmosphere*, 12:1456.

31. Sukmak M, Okamoto M, ANDO T., Hagiwara K. 2021. Genetic stability of the open reading frame 2 (ORF2) of borna disease virus 1 (BoDV-1) distributed in cattle in Hokkaido. *J Vet Med Sci*, 21:155.
32. Kato-Mori Y, Okamura T, Kawashita N, Hagiwara K. 2021. Characterization of a variant CD4 molecule in Japanese Black cattle. *Vet Immunol immunopathol*, 232:110167.
33. Luvai EAC, Uchida L, Tun MMN, Inoue S, Weiyin H, Shimoda H, Morita K, Hayasaka D. 2021. Seroepidemiological surveys of tick-borne encephalitis virus and novel tick-borne viruses in wild boar in Nagasaki, Japan. *Ticks Tick Borne Dis* 13(1):101860.
34. Shimooka M, Sakurai Y, Muramatsu Y, Uchida L. 2021. Isolation and Characterization of Mosquito-Associated *Spiroplasma cantharicola* from *Aedes japonicus* Collected in Hokkaido, Japan. *Insects* 12(12) 1056.
35. Uchida L, Shibuya M, Morales-Vargas RE, Hagiwara K, Muramatsu Y. 2021. Zika Virus Potential Vectors among *Aedes* Mosquitoes from Hokkaido, Northern Japan: Implications for Potential Emergence of Zika Disease. *Pathogens* 10(8):938.
36. Kooriyama T, Ogata N. 2021. Salivary stress markers in dogs: Potential markers of acute stress. *Res in Vet Sci*, 141:48-55.
37. Kooriyama T, Mukhopadhyay A, Moore G.E, Ogata N. 2021. Salivary Chromogranin A (CgA) Response to the Noradrenaline Transporter Blocker Atomoxetine in Dogs. *Animals*, 11(10):2844.
38. Matsushiro M, Kurono H, Yamamoto K, Kooriyama T. 2021. Cortisol changes in bottlenose dolphins in the dolphin interactive program. *Japanese Journal of Vet Res*, 69(2):99-108.
39. Ukita M, Hozé N, Nemoto T, Cauchemez S, Asakura S, Makingi G, Kazwala R, Makita K. 2021. Quantitative evaluation of the infection dynamics of bovine brucellosis in Tanzania. *Preventive Veterinary Medicine* 194, 105425. <https://doi.org/10.1016/j.prevetmed.2021.105425>
40. Makita K, Sugahara N, Nakamura K, Matsuoka T, Sakai M, Tamura Y. 2021. Current status of antimicrobial drug use in Japanese companion animal clinics and the factors associated with their use. *Frontiers in Veterinary Science* 8: 705648. doi: 10.3389/fvets.2021.705648
41. Makita K, Ikegami M, Matsumoto T. 2021. Improving the livelihood of livestock and farmers and public health in developing countries through the provision of solutions for the various risks they face. *Japan Agricultural Research Quarterly* 55 (S1), 533-541.
42. Yamagami T, Miyama T, Toyomaki H, Sekiguchi S, Sasaki Y, Sueyoshi M, Makita K. 2021. Analysis of the effect of feedback feeding on the farm-level occurrence of porcine epidemic diarrhea in Kagoshima and Miyazaki Prefectures, Japan. *Journal of Veterinary Medical Science* 83(11), 1772-1781. <https://doi.org/10.1292/jvms.21-0343>
43. Nakada S, Fujimoto Y, Kohara J, Adachi Y, Makita K. 2021. Estimation of economic loss by carcass weight reduction of Japanese dairy cows due to infection with bovine leukemia virus. *Preventive Veterinary Medicine* 198, 105528. <https://doi.org/10.1016/j.prevetmed.2021.105528>
44. Makita K, Isoda N, Ito S, Fukumoto F, Ito M, Kuwata K. 2021. Estimation of basic reproduction number of classical swine fever in wild boar during the early phase of the outbreak. *Journal of the Japan Veterinary Medical Association (in Japanese)*.
45. Makita K. 2021. Animal health and food safety risk assessments. *Rev. Sci. Tech. Off. Int. Epiz.* 40(2), 533-544. <https://doi.org/10.20506/rst.40.2.3243>
46. Noda J, Tomizawa S, Takahashi K, Morimoto K, Mitarai S. 2021. Air pollution and airborne infection with mycobacterial bioaerosols: a potential attribution of soot. *Int. J. Environ. Sci. Technol.* 1-10. doi:10.1007/s13762-021-03203-7.
47. Morales Vargas R, Tsunoda T, Noda J, Bousset P, Nguyen TY, Hasebe F, Dujardin JP. 2021. Shape relatedness between geographic populations of *Culex tritaeniorhynchus*, the primary vector of Japanese encephalitis virus: A

landmark study. *Infect. Genet. Evol.* 90: 104764. doi: 10.1016/j.meegid.2021.104764.

48. Kokubo M, Fujiyoshi S, Ogura D, Nakajima M, Fujieda A, Noda J, Maruyama F. 2021. Relationship between the Microbiome and Indoor Temperature/Humidity in a Traditional Japanese House with a Thatched Roof in Kyoto, Japan. *Diversity*, 13(10):475. <https://doi.org/10.3390/d13100475>.

49. Dong J, Liu G, Gao N, Suo J, Matthijssens J, Li S, Yuan D, Du Y, Zhang J, Yamashita N, Haga T, Cook FR, Zhu W. 2021. A reassortant G3P[12] rotavirus A strain associated with severe enteritis in donkeys (*Equus asinus*) *Equine Veterinary Journal* doi: 10.1111/evj.13425.

50. Faizah AN, Kobayashi D, Maekawa Y, Amoa-Bosompem M, Fauziyah S, Mulyatno KC, Subekti S, Rohmah EA, Lusida MI, Mori Y, Miura K, Hirayama K, Isawa H, Sawabe K. 2021. Identification and Isolation of Japanese Encephalitis Virus Genotype IV from *Culex vishnui* Collected in Bali, Indonesia in 2019. *Am J Trop Med Hyg.*:tpmd201554. doi: 10.4269/ajtmh.20-1554. Online ahead of print.PMID: 34280147

51. Fujimoto K, Kawasaki M, Endo Y, TYokoyama T, Yamane I, Yamazaki H, Kure K, Haga T, Sugiura K. 2021. Establishing defined daily doses (DDD) for antimicrobial agents used in pigs, cattle and poultry in Japan and comparing them with European DDD values, *PLoS one* 16 (4), e0245105

52. Fujimoto K, Kawasaki M, Endo Y, Yokoyama T, Yamane I, Yamazaki H, Kure K, Haga T, Sugiura K. 2021. Antimicrobial use on 74 Japanese pig farms in 2019: A comparison of Japanese and European defined daily doses in the field. *PLoS One*. 16(8):e0255632.

53. He Y, Ayansola H, Hou Q, Liao C, Lei J, Lai Y, Jiang Q, Hori M, Zhang B, 2021. Genistein inhibits colonic goblet cell loss and colorectal inflammation induced by *Salmonella Typhimurium* infection. *Molecular Nutrition Food Research*, 65, 2100209. [[doi.org/ 10.1002/mnfr.202100209](https://doi.org/10.1002/mnfr.202100209)]

54. Huy HL, Koizumi N, Nuradji H, Noor SM, Dharmayanti NI, Haga T, Hirayama K, Miura K. 2021. Antimicrobial resistance in *Escherichia coli* isolated from brown rats and house shrews in markets, Bogor, Indonesia. *Journal of Veterinary Medical Science, J Vet Med Sci.*;83(3):531-534. doi: 10.1292/jvms.20-0558.

55. Iida M, Desamero MJ, Yasuda K, Nakashima A, Suzuki K, Chambers JK, Uchida K, Ogawa R, Hachimura S, Nakayama J, Kyuwa S, Miura K, Kakuta S, Hirayama K. 2021. Effects of orally administered *Euglena gracilis* and its reserve polysaccharide, paramylon, on gastric dysplasia in A4gnt knockout mice. *Sci Rep.* 2021;11(1):13640. doi: 10.1038/s41598-021-92013-5.

56. Ishida H, Murakami S, Kamiki H, Matsugo H, Katayama M, Sekine W, Ohira K, Takenaka-Uema A, Horimoto T. 2021 Construction of an Influenza D Virus with an Eight-Segmented Genome. *Viruses.*;13(11):2166. doi: 10.3390/v13112166. PMID: 34834971

57. Koizumi K, Morita M, Pheng V, Wann C, Masuoka H, Higa Y, Wada T, Hirayama K, Ohnishi M, Miura K. 2021. Rat trade and leptospirosis: Molecular epidemiology of *Leptospira* species in rats exported from Cambodia to Vietnam, *Transbound Emerg Dis.* 2021 Mar 18.

58. Ohnuki N, Kobayashi T, Matsuo M, Nishikaku K, Kusama K, Torii Y, Inagaki Y, Hori M, Imakawa K, Satou Y. 2021. A target enrichment high throughput sequencing system for characterization of BLV whole genome sequence, integration sites, clonality and host SNP. *Sci Rep.* 2021, 11:4521. [[doi.org/10.1038/s41598-021-83909-3](https://doi.org/10.1038/s41598-021-83909-3)]

59. Soda K, Yamane M, Hidaka C, Miura K, Ung TTH, Nguyen HLK, Ito H, LE MQ, Ito T. 2021. Prior infection with antigenically heterologous low pathogenic avian influenza viruses interferes with the lethality of the H5 highly pathogenic strain in domestic ducks. *J Vet Med Sci.* 83(12):1899-1906. doi: 10.1292/jvms.21-0515

60. Sugiura K, Kure K, Kato T, Kyutoku F, Haga T. 2021. Change in the ASF entry risk into Japan as a result of the COVID-19 pandemic. *Transboundary and Emerging Diseases* 68 (3), 1700-1703

61. Thi DL, Vu SN, Lo C-W, Dao TD, Bui VN, Ogawa H, Imai K, Sugiura K, Aida Y, Haga T. 2021. Association between BoLA-DRB3 polymorphism and bovine leukemia virus proviral load in Vietnamese Holstein Friesian cattle HLA.

62. Thi DL, Vu SN, Okamoto M, Yamashita-Kawanishi N, Duy TD, Nghia VB, Ogawa H, Imai K, Haga T. 2021. Molecular characterization of bovine foamy virus and its association with bovine leukemia virus infection in

Vietnamese cattle. *Journal of Veterinary Medical Science*, DOI:10.1292/jvms.21-0190

63. Tokunaga Y, Yoshizaki H, Triumi A, Kawaharada R, Ishida C, Hori M, Nakamura A. 2021. Effects of omega-7 palmitoleic acids on skeletal muscle differentiation in a hyperglycemic condition. *J Vet Med Sci*. 83:1369-1377. [doi.org/10.1292/jvms.21-0309]

64. Yamashita-Kawanishi N, Ito S, Chambers JK, Uchida K, Sato M, Chang HW, Knight C, van der Mee Fr, Haga T. 2021. Vulvar squamous cell carcinoma associated with *Equus caballus papillomavirus type 2* infection in a Japanese mare. *Tumour Virus Research* 12, 200226

65. Yokoyama T, Nishimura T, Uwamino Y, Kosaki K, Furusaki K, Onishi R, Onodera T, Haritani M, Sugiura K, Kirisawa R, Hasegawa N. 2021. Virucidal Effect of the Mesoscopic Structure of CAC-717 on Severe Acute Respiratory Syndrome Coronavirus-2. *Microorganisms*, 9: 2096. <https://doi.org/10.3390/microorganisms9102096>.

66. K. H. Ong. 2021. Whole-Genome Sequencing Analysis of *Salmonella* Isolates from Poultry Farms, a Slaughterhouse, and Retail Stalls in Thailand. *American Society for Microbiology Microbiology Resource Announcement*. Vol 10, Issue 19. 1-4.

67. M. L. Chau. 2021. Group B *Streptococcus* in retail food– beyond ST283 and raw fish. *Food Control*. 133: 108625

b) International conferences: 16

1. Usui M, One Health approach against antibiotic resistance in Japan. OIE Collaborating Centre Consortium for Food Safety in Asia and Pacific and Europe/ Addis Ababa University/ILRI webinar on risk analysis, 2021. May. 31.

2. Makita K. Introduction to risk assessment. OIE Collaborating Centre Consortium for Food Safety in Asia and Pacific and Europe/ Addis Ababa University/ILRI webinar on risk analysis, 2021. May. 31.

3. Li A. Introduction to risk management and communication. OIE Collaborating Centre Consortium for Food Safety in Asia and Pacific and Europe/ Addis Ababa University/ILRI webinar on risk analysis, 2021. May. 31.

4. Yokoyama T. BSE. OIE Collaborating Centre Consortium for Food Safety in Asia and Pacific and Europe/ Addis Ababa University/ILRI webinar on risk analysis, 2021. May. 31.

5. Ping S. Points of Food Safety problem: Drugs & Residues. OIE Collaborating Centre Consortium for Food Safety in Asia and Pacific and Europe/ Addis Ababa University/ILRI webinar on risk analysis, 2021. May. 31.

6. Kudo H, Higashi S, Oka K, Takahashi M, Tamura Y, Usui M. Complete genome sequencing and transcriptome analysis of Extended-Spectrum Beta-lactamase-producing *Escherichia coli* exposed to flavophospholipol. *ECCMID2021*. 2021. July. 9-12.

7. Usui M, Current situation and future prospect of antibiotic-resistant bacteria derived from animals. *FFTC-TLRI symposium*. 2021. November. 17

8. Uchida L, Zika Virus Potential Vectors among *Aedes* Mosquitoes from Northern Japan. *Joint International Tropical Medicine Meeting (JITMM 2021)*. 2021. December. 15.

9. Uchida L. Zika Virus Potential Vectors among *Aedes* Mosquitoes in Hokkaido, Northern Japan. *The 6th One Health Lecture Series on Solutions to Global One Health Challenges Towards Human Animals and Environmental Health*. December 10, 2021.

10. Usui M. Antibiotic resistant bacteria and antibiotic resistance genes in livestock environment in Japan. *The 6th One Health Lecture Series on Solutions to Global One Health Challenges Towards Human Animals and Environmental Health*. December 10, 2021.

11. Asakawa M. Platyhelminthes as pathogens of fish diseases from captive fishes in aquariums in Japan. *The 6th One Health Lecture Series on Solutions to Global One Health Challenges Towards Human Animals and Environmental Health*. December 11, 2021.

12. Noda J. Bioaerosol science and environmental health: essential aspects and further challenges. *The 6th One Health Lecture Series on Solutions to Global One Health Challenges Towards Human Animals and Environmental Health*. December 11, 2021.



13. Noda J, Aoyama T, Maki T, Morimoto K, Mitarai, S. Atmospheric Air pollution and bioaerosols: Soot as attributing factor for UV resistance. 4th International Chemical Hazard Symposium. 2021 March. 3.
14. Wu Q. 2021. Establishment of a Transferable Untargeted Screening Strategy and Its Application in Food Safety Early Alert. Rapid Method Europe conference from 1 Feb to 3 Feb 2021.
15. Ching KW. 2021. Rapid Susceptibility Profiling of *Aeromonas dhakensis* Using A Microscan: A High Prevalence of Carbapenem-Resistant In Clinical Strains. 1st International Electronic Conference on Antibiotics- The Equal Power of Antibiotics and Antimicrobial Resistance on 8-17 May 2021.
16. Ching KR. 2021. Benchmarking NGS platforms for WGS analysis to support foodborne outbreak investigations. Rapid Method Europe 2021.

c) National conferences: 35

1. Nakamura K, Fujiki J, Furusawa T, Mumby M, Nakamura T, Usui M, Gondaira S, Higuchi H, Tamura Y, Iwano H. Fluctuating Bacteriophage-induced galU Deficiency Region is Involved in Trade-off Effects on the Phage and Fluoroquinolone Sensitivity in *Pseudomonas aeruginosa*. 2021. March. 24. Japanese Society for Bacteriology. Japan.
2. Fukuda A. Role of flies on the dissemination of antimicrobial resistant bacteria in environment. 2021. April 24. Symposium. Study group of Antibacteria for animals. Japan.
3. Fukuda A, Usui M, Suzuki M, Makita K. Quantitative analysis of dissemination of antimicrobial resistant bacteria and antimicrobial resistance genes to soils and crops by the immigration of livestock waste. 2021. September 7-9. Japan Society for Veterinary Medical Science. Japan.
4. Suzuki K, Fukuda A, Nakajima C, Suzuki Y, Usui M. Repeated exposure of high concentration antimicrobials increases the spore formation rate in *Clostridioides difficile*. 2021. September 7. Japan Society for Veterinary Medical Science. Japan.
5. Enami M, Fukuda A, Nakajima C, Suzuki Y, Usui M. Heated scallop shell powder and lime nitrogen could control antibiotic-resistant bacteria in composting. 2021. September 7. Japan Society for Veterinary Medical Science. Japan.
6. Fukuda A, Usui M, Suzuki M, Makita K. Elucidation of the amount of propagation of antibiotic resistance in soil and crops by applying livestock wastes. 2021. September 7. Japan Society for Veterinary Medical Science. Japan.
7. Uchiyama T, Fukuda A, Azuma T, Usui M. Survey of ESBL-producing and carbapenem-resistant *Escherichia coli* in aquatic environment 2021. September 7. Japan Society for Veterinary Medical Science. Japan.
8. Usui M. The relationship between antibiotic resistance and livestock wastes. October 28, 2021. Japanese Society of Water Treatment Biology. Japan.
9. Uchida L, Sakurai Y, Muramatsu Y. Survey of arboviruses in *Aedes* mosquitoes collected in Hokkaido, Japan. September 7, 2021. Japan Society for Veterinary Medical Science. Japan.
10. Miki K, Iwamoto K, Eshita Y, Orba Y, Sawa H, Muramatsu Y. Evaluation of Zika viral quasispecies generated in *Aedes japonicus*. September 7, 2021. Japan Society for Veterinary Medical Science. Japan.
11. Kawae S, Iwamoto K, Eshita Y, Orba Y, Sawa H, Muramatsu Y. Comparison of Zika virus susceptibility of *Aedes japonicus*, *Aedes albopictus*, and *Aedes aegypti*. September 7, 2021. Japan Society for Veterinary Medical Science. Japan.
12. Muramatsu Y., Itani, H., Nomura M., Uchida L., and Kooriyama T. Comparison between oral microbiome and frequency on bacterial detection from oral cavities of dogs and their owners. September 7, 2021. Japan Society for Veterinary Medical Science. Japan.
13. Shoji J, Fukumori R, Eguchi A, Gondaira S, Chisato K, Oikawa S. The relationship between de novo fatty acids in milk and milk production, diseases and plasma concentrations of metabolic hormones in dairy cows. September 11, 2021. The Japanese Society of Animal Science. Japan.
14. Sato H, Kumano R, Osada T, Kamata M. Shimada K, Izumi K, Fukumori R, Chisato K, Oikawa S. Effects of starch

contents in calf starter on feed intake, growth and plasma concentrations of metabolic hormones in dairy calves. September 11, 2021. The Japanese Society of Animal Science. Japan.

15. Takamatsu Y, Chisato K, Fukumori R, Kusayanagi A, Taguchi T, Oikawa S. Blood VLDL concentration in primiparous and multiparous cows. September 7, 2021. The Japanese Society of Veterinary Medical Science. Japan.

16. Kumano R, Sato H, Osada T, Kamata M, Taguchi T, Kusayanagi A, Izumi K, Fukumori R, Chisato K, Oikawa S. Changes in serum lipoprotein concentrations before and after colostrum feeding in dairy calves. September 7, 2021. The Japanese Society of Veterinary Medical Science. Japan.

17. Sato H, Kumano R, Osada T, Kamata M, Shimada K, Izumi K, Fukumori R, Chisato K, Oikawa S. Effects of starch contents in calf starter on growth, plasma biochemical component concentrations and fecal scores in dairy calves. September 7, 2021. The Japanese Society of Veterinary Medical Science. Japan.

18. Shoji J, Fukumori R, Eguchi A, Gonsaira S, Chisato K, Oikawa S. The relationship between de novo fatty acids in milk and blood BHBA concentrations in dairy cows. September 7, 2021. The Japanese Society of Veterinary Medical Science, Japan.

19. Osada S, Chisato K, Fukumori R, Kusayanagi A, Taguchi T, Oikawa S. Changes in serum lipoprotein concentrations before and after calving in primiparous and multiparous cows. September 7, 2021. The Japanese Society of Veterinary Medical Science, Japan.

20. Fusada K, Eguchi A, Nishi K, Gonsaira S, Higuchi H. Intracellular invasion mechanism of *Mycoplasma bovis* into bovine mammary epithelial cells. October 23, 2021. The Japanese Society of Bovine Mastitis. Japan.

21. Tachibana A, Nishi K, Eguchi A, Matsuda K, Sato A, Kato T, Gondaira S, Higuchi H. Intracellular kinetics of *Mycoplasma bovis* using endosome vesicles. September 7-13, 2021. The Japan Society for Veterinary Medical Science, Japan.

22. Eguchi A, Watanabe R, Nishi K, Inoue H, Gondaira S, Higuchi H. Dynamic changes in free amino acids in milk in bovine mastitis. September 7-13, 2021. The Japan Society for Veterinary Medical Science, Japan.

23. Eguchi A, Watanabe R, Nishi K, Inoue H, Gondaira S, Higuchi H. Effects of free amino acids in milk on immune response in the mammary gland in bovine mastitis. June 26, 2021. The Japanese Society of Animal Hygiene.

24. Takahashi T, Yumoto S, Nakamura H, Eguchi A, Watanabe R, Hirano Y, Nishi K, Gondaira S, Higuchi H. Evaluation of serum antibody titers in bovine mycoplasma infection. 2021. June 26. The Japanese Society of Animal Hygiene.

25. Kure S, Fukuhara T, Hayashi T, Nagasawa Y, Tajima Y, Kosenda K, Otsuka H. The relationship between immune factors from macrophages in milk and milk composition in dairy cattle. December 5, 2021. The Society of Farm Animal in Infectious Diseases.

26. Shimazaki H, Bahame D, Bugeza J, Nseroko G, Byaruhanga J, Anzai M, Muramatsu Y, Vudriko P, Mwebembezi W, Makita K. Understanding dairy value chain in Mbarara district, Uganda. March 6, 2021. Japan Society of Veterinary Epidemiology.

27. Okamura A, Yokoyama A, Makita K. Estimating carcass center temperature for export of beef to foreign countries. March 6, 2021. Japan Society of Veterinary Epidemiology.

28. Tokunaga N, Usui M, Fukuda A, Asai T, Makita K. The risk profile of beta-lactam antibiotics resistance bacteria of livestock origin through consumption of vegetables. March 6, 2021. Japan Society of Veterinary Epidemiology.

29. Ukita M, Kuwata K, Tanaka E, Isoda N, Sakoda Y, Makita K. Prediction of the change of CSF antibody titers of sow herds by generation using a simulation model. March 6, 2021. Japan Society of Veterinary Epidemiology.

30. Makita K, Kamata Y, Tojinbara K. Evaluation of the effects of rabies control in the elimination in Japan using effective reproductive number. March 6, 2021. Japan Society of Veterinary Epidemiology.

31. Ukita M, Kuwata K, Tanaka E, Isoda N, Sakoda Y, Makita K. Consideration of prefecture specific classical swine fever vaccination program based on the timing of starting pig farm vaccination by simulation model. September

9, 2021. Japanese Society of Veterinary Medical Science, Japan.

32. Makita K, Suzuki T, Mogano K, Chirima G, Sabeta C. Characterizing rabies transmission dynamics in northern South Africa by genome analysis. September 9, 2021. Japanese Society of Veterinary Medical Science, Japan.

33. Fukumoto F, Makita K, Kimura Y, Hori A, Tanaka A, Tsutsumi A. Effect of COVID-19 on Japanese pet animal clinics. September 9, 2021. Japanese Society of Veterinary Medical Science, Japan.

34. Ota C, Noda J, Morimoto K, Mitarai S. The protective effect of soot on Mycobacteria from UV-Abactericidal effect of ozone on the bioaerosol in the barn. September 7-13, 2021. Japan Society for Veterinary Medical Science. Japan.

35. Osaki N, Narikawa S, Noda J, Kon K, Goto M, Kishida M, Takahasi T. bactericidal effect of ozone on the bioaerosol in the barn. September 7-13, 2021. Japan Society for Veterinary Medical Science. Japan.

d) Other

(Provide website address or link to appropriate information): 15

Invited speeches:

1. Makita K. Animal rabies during outbreaks – Japan, Vietnam and South Africa. Rabies prevention officers youtube seminar by Ministry of Health, Labour and Welfare of Japan, February 2021.

2. Makita K. Japan Veterinary Association online seminar: Classical swine fever in wild boar. March 6, 2021.

3. Takahashi Y. The Relationship between Religious Cultures and the Number of Educational Post Mortem Dissection of Companion Animals. Association of Bioethics in Kyoto, March, 2021

4. Takahashi Y. Humanistic-Social Disciplines and COVID-19. The 8th One health research forum: Impact of COVID-19 on the present and future. May 13, 2021.

5. Makita K. Animal Production and Health. Joint FAO/WHO/UNEP/OIE/WFP event for Asia and the Pacific, Together we make food safe: One Health approach, June 21, 2021.

6. Makita K. What epidemiology makes a change? Japan Association of Livestock Clinics online seminar, July 9, 2021.

7. Oikawa S, Fukumori R, Chisato K. Field activities of Rakuno Gakuen University. OIE-CC online seminar at Japan Society for Veterinary Science: The heart and shape of veterinary extension. September 9, 2021.

8. Makita K. Veterinary extension in international frameworks. OIE-CC online seminar at Japan Society for Veterinary Science: The heart and shape of veterinary extension. September 9, 2021.

9. Makita K. Classical swine fever in wild boar. Japan Livestock Industry Association online seminar, September 17, 2021

10. Takahashi Y. The Characteristics of Animal Ethical Theory of Bernard E. Rollin: A Comparison with Peter Singer. Japanese Association of Ethics, October, 2021.

11. Makita K. Action for AMR toward sustainable production and provision of animal-source foods. Elanco online seminar, October 1-31, 2021.

12. Makita K. Control of brucellosis in Uganda and Tanzania. Hokkaido University online One Health seminar, November 15, 2021

13. Makita K. Effects of COVID-19 on veterinary clinics. Association of Animal Clinical Medicine online seminar, November 20, 2021.

14. Makita K. Learning from ecohealth and history of rabies to achieve "Zero by 30". Special lecture, The 6th One Health Lecture Series on Solutions to Global One Health Challenges Towards Human Animals and Environmental Health. December 11, 2021.

15. Makita K. International veterinary extension activities. The 10th JICA-JISNAS –New movement of international education and research using international students network. December 20, 2021, online.

**9. Additional comments regarding your report:**